V. INTERNATIONAL WORLD HEALTH CONGRESS

AUGUST 5-6, 2023
ADANA, TÜRKIYE

EDITORS

DR. KÜBRA İRDAY

DR. MERVE KILIÇ ÇİL

CONGRESS BOOK

V. International World Health Congress

August 22-24, 2023 Adana / TURKIYE

PROCEEDINGS BOOK

EDITORS

Dr. Kübra İRDAY
Dr. Merve KILIÇ ÇİL

CONGRESS ID

CONGRESS TITLE
V. International World Health Congress

DATE AND PLACE
August 5-6, 2023 / Adana, Türkiye

ORGANIZATION
Economic Development and Social Research Institute

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(Chief Physician of Adana City Education and Research Hospital)

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Merve KIDIRYUZ

PARTICIPANTS COUNTRIES (16 Countries)
Türkiye (57 paper)
Morocco, Pakistan, India, Portugal, Azerbaijan, Tunisia, Spain, Iraq, Algeria, Indonesia, Nigeria, Albania, Kosovo, Bangladesh, Iran
(61 paper)
Total Accepted Article:118
Total Rejected Papers: 11
*All applications have undergone a double-blind peer review process

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V. INTERNATIONAL WORLD HEALTH CONGRESS

August 5-6, 2023 / Adana, Türkiye

CONGRESS PROGRAM

zoom

Meeting ID: 812 5934 6695
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exp. H-1, Merve KIDIRYUZ

ONLINE PRESENTATIONS / 05.08.2023

⏰ ANKARA LOCAL TIME - 10 ^{00} : 12 ^{00}	🎥 ZOOM ID: 812 5934 6695
🧑‍🏫 HALL-1, SESSION-1	ZOOM PASSCODE: 050505

HEAD OF SESSION: Assoc. Prof. Dr. Saadet BELHAN

AUTHORS	AFFILIATION	TOPIC TITLE
Shaymaa Ghazi QADER Prof. Dr. Yusuf KURT	Harran University (Türkiye)	DEVELOPMENT A DNA ISOLATION PROTOCOL FOR BREAST CANCER SAMPLE OF FORMALIN-FIXED PARAFFIN EMBEDDED TISSUES
Dr. Ciler COKAN DONMEZ	Çukurova University (Türkiye)	EFFECT OF URINARY INCONTINENCE ON WOMEN'S HEALTH
Assoc. Prof. Dr. Gülbahtiyar DEMİREL Assoc. Prof. Dr. Feride TAŞKIN YILMAZ	Sivas Cumhuriyet University (Türkiye) Sakarya University of Applied Sciences (Türkiye)	THE RELATIONSHIP WITH THE QUALITY OF SEXUAL LIFE OF CONTRACEPTION METHOD PREFERRED BY WOMEN IN THE REPRODUCTIVE PERIOD
Assoc. Prof. Dr. Feride TAŞKIN YILMAZ Assoc. Prof. Dr. Gülbahtiyar DEMİREL	Sakarya University of Applied Sciences (Türkiye) Sivas Cumhuriyet University (Türkiye)	SYMPTOMS EXPERIENCED AND ANALGESIC USE BEHAVIORS OF WOMEN IN THE MESTRUAL PERIOD
Emine TÜREN DEMİR Harun TOY Sabri HERGÜNER Haluk DÜLGER	Necmettin Erbakan University (Türkiye)	EFFECTS OF MATERNAL OXYTOCIN, CORTISOL LEVELS AND MATERNAL DEPRESSION ON PRENATAL ATTACHMENT
Dr. İbrahim ÖMEROĞLU	Tepecik Training and Research Hospital (Türkiye)	PRENATALLY DIAGNOSED SACROCOCCYGEAL TERATOMA
Taleb Ali KHALID Aarab AHMED	Université Abdelmalek Essaâdi (Morocco)	MEDICINAL PLANTS ADOPTED BY TRADITIONAL GYNAECOLOGISTS TO TREAT SOME GYNAECOLOGICAL AND OBSTETRICAL DISORDERS IN THE SOUSS MASSA REGION
Assoc. Prof. Dr. Saadet BELHAN	Van Yuzuncu Yıl University (Türkiye)	EFFECTS OF CURCUMIN-NANOPARTICLE ON SPERM PARAMETERS IN AN EXPERIMENTAL DIABETES MODEL

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ANKARA LOCAL TIME - 10 ^{00} : 12 ^{00}	ZOOM ID: 812 5934 6695
HALL-2, SESSION-1	ZOOM PASSCODE: 050505

HEAD OF SESSION: Dr. Kübra İRDAY

AUTHORS	AFFILIATION	TOPIC TITLE
Dr. Merve KILIÇ ÇİL Dr. Metin ÇİL Surgeon Zerrin ÖZÇELİK	Adana City and Education Research Hospital (Türkiye)	CAT-STRATCH DISEASE IN 4 CASES WITH DIFFERENT CLINICAL PRESENTATIONS
Dr. Suzan Meryem ÖZDOĞAN GÖK M.D. Specialist Mustafa Kurthan MERT Assoc. Prof. Dr. Selvi GÜLAŞI M.D. Specialist Eren KALE ÇEKİNMEZ M.D. Specialist Murat BAŞARANOĞLU	Adana City Training and Research Hospital (Türkiye)	EVALUATION OF EARLY TERM OUTCOMES OF VERY LOW BIRTH WEIGHT PRETERM INFANTS
Dr. Halise METİN BAZ	Adana City Training and Research Hospital (Türkiye)	EVALUATION OF SLEEPAND FEEDING PATTERNS IN CHILDREN FOLLOWED AT DEVELOPMENTAL PEDIATRICS OUTPATIENT CLINIC
Dr. Sevinç GARİP Dr. Nazmiye YÜKSEK	Health Sciences University Adana Training (Türkiye) Zonguldak Bülent Ecevit University (Türkiye)	DIAGNOSTIC APPROACH IN CHILDHOOD LYMPHADENOPATHIES
Dr. Onur DOYURGAN	Diyarbakir Gazi Yasargil Training and Research Hospital (Türkiye)	OUR RESULTS OF SECUNDUM ATRIAL SEPTAL DEFECT REPAIR WITH GLUTARALDEHYDE-TREATED AUTOLOGOUS PERICARDIAL PATCH IN CHILDREN
Assist. Prof. Dr. Ahmet YEŞİL Dr. Murat KÜÇÜK	Mardin Artuklu University (Türkiye) Batman Training and Research Hospital (Türkiye)	RETROSPECTIVE ANALYSIS OF DROWNING CASES FROM THE EMERGENCY MEDICINE TO THE INTENSIVE CARE UNIT

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HALL-3, SESSION-1		ZOOM PASSCODE: 050505

HEAD OF SESSION: Dr. İshak BASATEMUR

AUTHORS	AFFILIATION	TOPIC TITLE
Midwife Çiğdem GÖK Res. Assist. Habibe YAŞAR YETİŞMIŞ	Uşak Dikilitaş Family Health Center (Türkiye) Munzur University (Türkiye)	OBESITY DURING PREGNANCY AND MIDWIFERY CARE
Res. Assist. Habibe YAŞAR YETİŞMIŞ Midwife Çiğdem GÖK	Munzur University (Türkiye) Uşak Dikilitaş Family Health Center (Türkiye)	MIDWIFE-LED CONTINUITY OF CARE: LITERATURE REVIEW
Sümeyye ŞİMŞEK Assist. Prof. Dr. Sümeyye ALTIPARMAK Assist. Prof. Dr. Ayşe Nur YILMAZ	İnönü University (Türkiye) İnönü University (Türkiye) Fırat University (Türkiye)	BREASTFEEDING AND FORMULA CODE IN EMERGENCY SITUATIONS
Zeynep KALKAN Assist. Prof. Dr. Ayşe Nur YILMAZ Assist. Prof. Dr. Sümeyye ALTIPARMAK	İnönü University (Türkiye) Fırat University (Türkiye) İnönü University (Türkiye)	STRESS IN PREGNANCY AND ITS FETAL EFFECTS
Tuğba YILMAZ Tuba KARABEY	Tokat Gaziosmanpaşa University (Türkiye)	KEY ROLE IN PATIENT SAFETY NURSE'S ADVOCACY ROLE
Hamit Sırrı KETEN Güler Gizem DOGAN Önder ERCAN Numan GÜVENC	Gaziantep University (Türkiye) Gaziantep University (Türkiye) Vatan Hospital Gynecology and Obstetrics Hospital (Türkiye)	DETERMINING THE KNOWLEDGE LEVELS OF HIGH SCHOOL STUDENTS ON HUMAN PAPILLOMA VIRUS (HPV) AND ITS VACCINE
Dr. Sümeyra Mihrap İLTER	Osmaniye Korkut Ata University (Türkiye)	LEVELS OF CARE ADDICTION AND RELATED FACTORS OF HEMODIALYSIS PATIENTS: A DETAILED SECTIONAL RESEARCH
Dr. Sümeyra Mihrap İLTER	Osmaniye Korkut Ata University (Türkiye)	TELEHEALTH PRACTICES FOR THE ELDERLY: EVIDENCE-BASED APPROACHES

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HALL-4, SESSION-1		ZOOM PASSCODE: 050505

HEAD OF SESSION: Dr. Burak ÜN

AUTHORS	AFFILIATION	TOPIC TITLE
Dr. F. Işıl ADIGÜZEL	Adana City and Education Research Hospital (Türkiye)	PREDICTION OF MECONIUM-STAINED AMNIOTIC FLUID VIA PULMONARY ARTERY DOPPLER EXAMINATION
Sıla ESEN Ümran KILINÇDEMİR TURGUT Aslı ARTINORDU ATÇI Ezgi TURGUT	Adana City and Education Research Hospital (Türkiye)	PERINATAL-MULTIDISCIPLINARY APPROACH TO A RARE CASE OF OROPHARYNGEAL FETAL TERATOMA DETECTED IN THE PRENATAL PERIOD
Dr. Burak ÜN Dr. Erdoğan KOCA Dr. Büşra ÇETİNKAYA ÜN	Adana City Training and Research Hospital (Türkiye)	SPONTANEOUS PREGNANCY IN A PERIMENOPAUSAL WOMAN WITH LOW AMH LEVEL: A CASE REPORT
Ragaz Azad HAMAD Prof. Dr. Yusuf KURT	Harran University (Türkiye)	A NEW DNA EXTRACTION PROTOCOL FOR FORMALIN-FIXED PARAFFIN EMBEDDED TISSUE OF UTERUS CANCER
Assoc. Prof. Dr. Nabila SHER Dr. Gulnaz BEGUM Assoc. Prof. Dr. Seema ZUBAIR	Khyber Medical University Peshawar (Pakistan)	EFFECT OF LIPID-BASED MULTIPLE MICRONUTRIENTS SUPPLEMENTATION IN UNDERWEIGHT PRIMIGRAVIDA PRE-ECLAMPTIC WOMEN ON MATERNAL AND PREGNANCY OUTCOMES: RANDOMIZED CLINICAL TRIAL
Dr. Sadık KÜKRER	University of Health Sciences Adana City Training and Research Hospital (Türkiye)	COMPARISON OF OBSTETRIC AND NEONATAL OUTCOMES IN PREGNANT WOMEN WITH PLACENTA PREVIA, WITH AND WITHOUT PLACENTA ACCRETA SPECTRUM: A RETROSPECTIVE COHORT ANALYSIS IN A TERTIARY CENTER
Dr. Barış SEVER	Tepecik Training and Research Hospital (Türkiye)	APPROACH TO HYPOTHYROIDISM IN PREGNANCY

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ANKARA LOCAL TIME - 10 ^{00} : 12 ^{00}		ZOOM ID: 812 5934 6695
HALL-5, SESSION-1		ZOOM PASSCODE: 050505

HEAD OF SESSION: Hande KÜSEN

AUTHORS	AFFILIATION	TOPIC TITLE
Assist. Prof. Dr. Humaira LATIF Zarmina SAEED	Bahauddin Zakariya University (Pakistan)	SOCIAL APPEARANCE ANXIETY AND PSYCHOLOGICAL DISTRESS AMONG INSTAGRAM USERS
Faik ÖZDENGÜL Hande KÜSEN Behiye Nur KARAKUŞ Aysu ŞEN	Necmettin Erbakan University (Türkiye) Selcuk University (Türkiye) Necmettin Erbakan University (Türkiye) Necmettin Erbakan University (Türkiye)	EFFECT OF COVID-19 DISEASE ON PHYSIOLOGICAL PARAMETERS, ANXIETY AND SLEEP QUALITY IN PREGNANT WOMEN EVALUATION OF SLEEP AND ANXIETY IN COVID 19 POSITIVE PREGNANTS
Dr. Saima ARZEEN M. Mobassar KHAN Dr. Naeema ARZEEN	University of Peshawar (Pakistan)	THE MODERATING ROLE OF INNOVATIVE WORK BEHAVIOR ON THE RELATIONSHIP BETWEEN TRANSFORMATIONAL LEADERSHIP STYLES AND PROJECT SUCCESS
Amna IRFAN Mubeen ANJUM Dr. Shahnila TARIQ	University of Management and Technology (Pakistan)	HEALTH ANXIETY, SOMATIC SYMPTOMS AND FEAR OF CONTAMINATION IN NURSES
Dr. Yash KAUSHIK Prof. Dr. J.P SHARMA	University of Delhi (India)	EFFECT OF PHYSICAL ACTIVITY ON HEALTH DURING COVID-19
V. VARALAKSHMI R. DEVI Dr. R. SRINIVASAN	Bharath Institute of Higher Education and Research (India)	A STUDY TO ASSESS THE EFFECT OF MEDIA IN PROMOTING SELF - MEDICATION USE
Tânia RODRIGUES	Research Center for Health Technologies and Services (Portugal)	IMPROVEMENT OF QUALITY OF LIFE OF WOMEN WITH BREAST SURGERY AFTER REHABILITATION PROGRAM

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HALL-1, SESSION-2	ZOOM PASSCODE: 050505

HEAD OF SESSION: Assist. Prof. Dr. Gülbahar KESKİN

AUTHORS	AFFILIATION	TOPIC TITLE
Assist. Prof. Dr. Sevda EFİL Nurse Ceren Mina BÜKRÜK Nurse Ebru ÖZEN	Canakkale Onsekiz Mart University (Türkiye)	SOCIAL VULNERABILITY AND MEDICATION ADHERENCE IN INDIVIDUALS WITH CHRONIC OBSTRUCTIVE PULMONARY DISEASE
Assist. Prof. Dr. Sema KOÇAŞLI Nurse Nuray ÇETİNTAŞ Nurse Sema SELVİ Nurse Hacer Toprak ŞEPCİ Nurse Eylem ABAK	Ankara Yıldırım Beyazıt University (Türkiye) Ankara Bilkent City Hospital (Türkiye) Ankara Bilkent City Hospital (Türkiye) Ankara Bilkent City Hospital (Türkiye) Ankara Bilkent City Hospital (Türkiye)	ECMO UYGULANAN HASTALARDA GÜNLÜK HEMŞİRELİK BAKIMININ HEMODINAMIK PARAMETRELERE ETKISI
Meral MADENOĞLU KIVANÇ Assist. Prof. Dr. Gülbahar KESKİN	Istanbul Kultur University (Türkiye) Haliç Istanbul Kultur University (Türkiye)	THE IMPORTANCE OF NURSES IN SMART DRUG USE
Assist. Prof. Dr. Şerafettin OKUTAN Assist. Prof. Dr. Mehmet Tahir HUYUT	Bitlis Eren University (Türkiye) Erzincan Binali Yıldırım University (Türkiye)	THE EFFECT OF RELIGIOUS INTERVENTION ON VITAL FINDINGS IN COMA PATIENTS IN THE SURGICAL INTENSIVE CARE UNIT
Assist. Prof. Dr. Fatma KARASU Assist. Prof. Dr. Ebru ÖZTÜRK ÇOPUR	Kilis 7 Aralık University (Türkiye)	THE RELATIONSHIP BETWEEN INTERCULTURAL TOLERANCE AND EMPATHIC TENDENCY LEVELS OF SENIOR NURSING STUDENTS
Assist. Prof. Dr. Şerafettin OKUTAN Assist. Prof. Dr. Mehmet Tahir HUYUT	Bitlis Eren University (Türkiye) Erzincan Binali Yıldırım University (Türkiye)	INVESTIGATION OF THE EFFECT OF VIRTUAL REALITY ON COMFORT AND SATISFACTION LEVELS IN ONCOLOGY PATIENTS RECEIVING CHEMOTHERAPY TREATMENT
Assist. Prof. Dr. Ezgi DİRGAR Prof. Dr. Nermin OLGUN	Gaziantep University (Türkiye) Hasan Kalyoncu University (Türkiye)	EVALUATING THE TRAINING EFFECTIVENESS FOR THE ERGONOMIC RISKS EXPOSED BY NURSES WHILE MEASURING BLOOD PRESSURE
Zeynep Dönüş ÖZTÜRK Assoc. Prof. Dr. Eylem TOPBAŞ	Amasya University (Türkiye)	DETERMINING SELF-EFFICACY AND SELF-MANAGEMENT LEVELS IN HYPERTENSIVE PATIENTS
Nurse Ahmet Anıl ÇANTAŞ Assist. Prof. Dr. Hatice ERDOĞAN	Atasehir Acıbadem Hospital (Türkiye) Maltepe University (Türkiye)	COLLEAGUE SOLIDARITY OF SURGICAL NURSES IMPACT ON QUALITY OF WORK LIFE

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ANKARA LOCAL TIME - 12 ^{30} : 14 ^{30}		ZOOM ID: 812 5934 6695
HALL-2, SESSION-2		ZOOM PASSCODE: 050505

HEAD OF SESSION: Assist. Prof. Dr. Fatma Kübra SAYIN

AUTHORS	AFFILIATION	TOPIC TITLE
Assist. Prof. Dr. Tuba YALÇIN Assist. Prof. Dr. Seda ÇİFTÇİ	İzmir Kâtip Çelebi University (Türkiye) Izmir Democracy University (Türkiye)	THE EFFECT OF PERCEIVED STRESS AND DIET QUALITY ON COLONIC TRANSIT TIME
Assist. Prof. Dr. Fatma Kübra SAYIN	Necmettin Erbakan University (Türkiye)	MYOKINES AND THEIR METABOLIC EFFECTS
Lect. Dr. Bedriye URAL Beyza Gülnur BULUT Sena Begüm HOZER Şeyda TOPÇU Umay GÜNDÜZ	University of Health Sciences (Türkiye)	A LOOK AT THE NUTRITION OF GENERATION Z: FOOD PREFERENCES AND DIETARY HABITS
Lect. Dr. Bedriye URAL Merve Sema MALLI Elifnaz ÖZÇAĞLAYAN Cennet Tuğba ARPACIK	University of Health Sciences (Türkiye)	THE EFFECT OF MOOD CHANGES ON FOOD PREFERENCES
Ayesha BATOOL Dr. Farkhanda ANJUM	University of Agriculture (Pakistan)	EATING STYLE OF FEMALE STUDENTS AND ITS EFFECT ON THEIR HEALTH
Assoc. Prof. Dr. Jothi LAKSHMI	Bharath Institute of Higher Education and Research (India)	POLYHERBAL FORMULATIONS: NATURAL APPROACHES FOR MANAGING HYPERLIPIDEMIA AND HIGH BLOOD GLUCOSE
Dr. Nihan GÜNTEKİN Assist. Prof. Dr. Sedat ÖZDEMİR	Oğuzeli State Hospital (Türkiye) Gaziantep Islamic Science and Technology University (Türkiye)	ANALYSIS OF INFORMATIVE CONTENT OF VIDEOS PRESENT IN TURKISH ABOUT OBESITY ON YOUTUBE
R. Jothi LAKSHMI Prof. Dr. R. SRINIVASAN	Bharath Institute of Higher Education and Research (India)	MEDICINAL PLANTS USED IN THE TREATMENT OF DIABETES-A SHORT FREVIEW

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ANKARA LOCAL TIME - 12 ³⁰ : 14 ³⁰	ZOOM ID: 812 5934 6695
HALL-3, SESSION-2	ZOOM PASSCODE: 050505

HEAD OF SESSION: Assist. Prof. Dr. Oğuzhan METE

AUTHORS	AFFILIATION	TOPIC TITLE
Zehra KORKUT Yasemin KARAASLAN Nida LALECAN Tanyeli GÜNEYLİGİL KAZAZ Şeyda TOPRAK ÇELENAY	Ankara Yıldırım Beyazıt University (Türkiye) Hatay Mustafa Kemal University (Türkiye) Ankara Yıldırım Beyazıt University (Türkiye) Gaziantep University (Türkiye) Ankara Yıldırım Beyazıt University (Türkiye)	DETERMINATION OF FACTORS AFFECTING PAIN ACTIVITY PATTERNS IN INDIVIDUALS WITH MIGRAINE: A PILOT STUDY
Assist. Prof. Dr. Oğuzhan METE Assoc. Prof. Dr. Şeyda TOPRAK ÇELENAY	University of Health Sciences (Türkiye) Ankara Yıldırım Beyazıt University (Türkiye)	THE RELATIONSHIP BETWEEN THE LEVEL OF PHYSICAL ACTIVITY AND POSTURE, PERCEIVED STRESS, AND QUALITY OF LIFE IN YOUNG ADULT WOMEN
Fzt. Nida LALECAN Dr. Fzt. Yasemin KARAASLAN Dr. Fzt. Zehra KORKUT Lect. Tanyeli GÜNEYLİGİL KAZAZ Assoc. Prof. Dr. Şeyda TOPRAK ÇELENAY	Ankara Yıldırım Beyazıt University (Türkiye) Hatay Mustafa Kemal University (Türkiye) Ankara Yıldırım Beyazıt University (Türkiye) Gaziantep University (Türkiye) Ankara Yıldırım Beyazıt University (Türkiye)	INVESTIGATION OF PAIN ACTIVITY PATTERNS, FUNCTIONAL STATUS, PSYCHOLOGICAL STATUS, SLEEP AND PHYSICAL ACTIVITY IN PEOPLE WITH MIGRAINE: PILOT STUDY
İrem KEMER Res. Assist. Gamze ÇOBANOĞLU Dr. Sinem SUNER KEKLİK	Sivas Cumhuriyet University (Türkiye) Gazi University (Türkiye) Sivas Cumhuriyet University (Türkiye)	THE EFFECT OF SMOKING STATUS ON RESPIRATORY FUNCTION AND PELVIC FLOOR DYSFUNCTION
Ayşegül YETİŞİR Emine ÇETİN	Çukurova University (Türkiye) Adana City and Education Research Hospital (Türkiye)	EVALUATION OF THE EFFECT OF DULOXETINE USE ON QUALITY OF LIFE AND NECK PAIN IN WOMEN WITH FIBROMYALGIA
Res. Assist. DR. Praveen KUMAR Prof. Dr. J.P SHARMA	University of Delhi (India)	EFFECT OF SIX WEEKS SURYANAMASKAR TRAINING ON SELECTED PHYSIOLOGICAL AND MOTOR FITNESS VARIABLES OF SCHOOL GOING STUDENTS OF DELHI
Assoc. Prof. Dr. Mahendra SAWANT	Lakshmibai National College Of Physical Education (India)	THE IMPACT OF THERAPEUTIC EFFECTS OF YOGA AND ITS ABILITY TO INCREASE QUALITY OF LIFE
Mohammad Rasoul KHODADADI Elham HASANPOUR Samin JODAIRY	University of Tabriz (Iran)	THEMATIC ANALYSIS OF INCLUSION TO CHAMPIONSHIP SPORTS IN GIRLS WITH A QUALITATIVE APPROACH (CASE STUDY: GIRLS OF TABRIZ)

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HEAD OF SESSION: Assist. Prof. Dr. Nilgün TUNCEL ÇİNİ

AUTHORS	AFFILIATION	TOPIC TITLE
Gulgiz HUSEYNOVA Nermin EFENDIYEVA	Azerbaijan Medical University (Azerbaijan)	REFLECTION OF THE KIMMERLE`S ANOMALY ON THE MORPHOLOGICAL FEATURES OF THE ATLAS
Assist. Prof. Dr. Nilgün TUNCEL ÇİNİ	Bilecik Şeyh Edebali University (Türkiye)	MORPHOMETRIC EVALUATION OF THE DISTAL PART OF THE FEMUR: PILOT STUDY
Melisa GULCAN Servet CELİK Canberk TOMRUK Okan BİLGE Yigit UYANIKGİL	Ege University (Türkiye) Ege University (Türkiye) Samsun Education and Research Hospital (Türkiye) Ege University (Türkiye) Ege University (Türkiye)	SHRINKAGE IN THE MODIFIED SIHLER'S STAINING TECHNIQUE
G.E. KERİMZADE N.T. MOVSUMOV	Azerbaijan Medical University (Azerbaijan)	STATISTICAL ANALYSIS OF THE DISTANCE OF THE STYLOMASTOID FORAMEN TO THE TIP MASTOID PROCESS IN DRY SKULLS OF DIFFERENT AGE GROUPS
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F. DABLA A. El YAMANI	University Mohammed V Souissi Rabat (Morocco)	POSTERIOR TEETH RESTORATION
R. SELVAKUMAR Assoc. Prof. Dr. R. Jothi LAKSHMI Asoc. Prof. Dr. R. DEVI Prof. Dr. R. SRINIVASAN K. Pushpa RAJ	Bharath Institute of Higher Education and Research (India)	THERAPEUTIC POTENTIAL OF CARICA PAPAYA L. LEAVES-DENGUE FEVER
Amani JARBOUI Safa GAMOUDI Younes MISSAOUI Maria Jesus PERIAGO CASTÓN	Gafsa University (Tunisia) Organic Chemistry Laboratory (Tunisia) Nutrition and Bromatology University of Murcia (Spain)	EXTRACTION OF THE ACTIVE INGREDIENTS POLYPHENOLS AND TANNINS FROM THE MEDICINAL PLANT EPHEDRA
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Astha SAXENA	Amity University (India)	ENUMERATION OF MICROORGANISMS FROM TEXTILE WASTEWATER

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HEAD OF SESSION: Assoc. Prof. Dr. Onur ÇETİN

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Oladimeji, Olanrewaju Adedipupo	Federal Polytechnic (Nigeria)	THE USE OF HOSPITAL STATISTICS IN THE HOSPITAL MANAGEMENT
Anmol SAXENA Rishabha MALVIYA	Galgotias University (India)	NEXT-GENERATION HEALTHCARE: UNLEASHING THE POTENTIAL OF 3D PRINTABLE DRUG DELIVERY SYSTEMS
Lect. Ali AĞAR Lect. Soner BERŞE Assist. Prof. Dr. Sedat YİĞİT	Artvin Coruh University (Türkiye) Gaziantep University (Türkiye) Gaziantep University (Türkiye)	BIBLIOMETRIC ANALYSIS OF PUBLICATIONS ON CHATGPT IN THE FIELD OF HEALTH: A VISUAL MAPPING APPROACH CHATGPT
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Gentian VYSHKA Elmas SHAQIRI Tedi MANA Arben LLOJA	University of Medicine in Tirana (Albania) Institute of Legal Medicine (Albania)	A DEED WITHOUT A NAME: UNETHICAL ETHICS

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HEAD OF SESSION: Dr. Muhammet Yusuf TEPEBAŞI

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EFFECT OF PLEURAL CONTACT LENGTH ON LUNG BIOPSY RESULTS

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ABSTRACT

The aim of this study was to evaluate the relationship between pleural contact length (PCL) and diagnostic adequacy and the relationship between pleural contact length and pneumothorax complication in lung biopsies.

Material-method: This retrospective study included 179 patients who had contact with the pleura and underwent lung biopsy between 2016-2022. Tru-cut biopsy was performed in 107 patients and fine needle aspiration biopsy (FNAB) was performed in 72 patients. The PCL of all patients was measured in the axial plane by tomography. Adequate and inadequate histopathology results were determined from the hospital database. The PLC of the patients whose histopathological results were adequate and inadequate were compared. In addition, the PCL of the patients who developed and did not develop pneumothorax complications after the biopsy were compared.

Results: Histopathological results of patients who underwent Tru-cut biopsy; 18 of them were insufficient (16.82%) and 89 of them (83.17%) were adequate. No significant difference was found between the PCL of two groups (p=0.828). Histopathological results of patients who underwent FNAB; 24 of them (33.3%) were inadequate and 48 of them (66.6%) were adequate. No significant difference was found between the PCL of two groups (p=0.994). Pneumothorax developed in 11 patients after biopsy. The PCL of the patients who developed pneumothorax was found to be significantly shorter (p=0.005).

Conclusion: In our study, no significant difference was found between PCL and the diagnostic adequacy of the biopsy. However, the PCL of the lesions developing pneumothorax was found to be significantly shorter.

Keywords: Lung biopsy, Pleural contact length, Tru-cut, FNAB

PRENATAL DÖNEMDE SAPTANAN NADİR OROFARİNGEAL FETAL TERATOM OLGUSUNA PERİNATAL-MULTİDİSİPLİNER YAKLAŞIM

PERINATAL-MULTIDISCIPLINARY APPROACH TO A RARE CASE OF OROPHARYNGEAL FETAL TERATOMA DETECTED IN THE PRENATAL PERIOD

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Giriş

Teratomlar pluripotent kökenli, vücudun çok çeşitli kısımlarından kaynaklanabilen tümörlerdir. Orofaringegal fetal teratomlar ise çok nadirdir. Vaka bildirimleri şeklinde kısıtlı bilgiler literatürde mevuttur.

Vaka Sunumu

Geçmişinde özellik bulunmayan, G2p1 29 yaşında gebe, fetal kranial bölgede kitle saptanması nedeniyle perinatoloji kliniğine başvurdu. Yapılan obstetrik ultrason muayenesinde, fetal biyometrisi 20 hafta ile uyumlu intrauterin tek canlı fetüs izlendi. Amniyon mai en derin kadran 9 cm, hafif polihidriamnios saptandı. Üst, alt dudak ve maxillar kemik doğal izlendi ancak fetal sağ orofaringeal bölgeden kaynaklandığı düşünülen yaklaşık 6 cm kitle fetal ağız içinden dışarıya protrüdeydi. Kitle lobuleydi ve solid alanlar içermekteydi. Doppler ile yüksek debili kanlanma izlendi. Amniyosentez yapıldı, karyotip ve microarray sonucu normal olarak değerlendirildi. Olası fetal ve obstetrik komplikasyonlar hakkında aile bilgilendirildi. Perinatoloji Kliniğinde düzenli kontrol önerildi. Gebeliğin 28. haftasında şiddetli polihidroamnios, preterm eylem tehdidi ön tanısı ile hastane yatışı sağlandı. Yapılan vajinal

muayenede, 2-3 cm servikal dilatasyon saptandı ve tokoliz tedavisine rağmen düzenli uterin kontraksiyonlar izlendi. Ex utero intrapartum tedavi (EXIT) prosedürü planlandı ve sezaryen doğum ile 1430 gr kız bebek doğurtuldu. EXIT prosedürü ile trakeostomi açıldı sonrasında yenidoğan yoğun bakım ünitesine devredildi. Yenidoğanın ilk fizik muayenesinde; orofaringeal kaynaklı kitle, 8-10 cm boyutunda, ağız içinden dışarıya protrude, makroskopik olarak teratom ile uyumlu olarak değerlendirildi (Figure 1). Kitlede kanama izlendi ve doğum sonrası 3. saatte fetal hemoglobin 6,8 g/dL di. Ne yazık ki doğum sonrası 7. saatte kardiyopulmoner arrest sonrası yenidoğan ölümü gerçekleşti.

Sonuç

Fetal teratomlar nadirdir fakat yüksek obstetrik ve neonatal komplikasyon riski mevcuttur. Yaşam şansını arttırmak için perinatoloji kliniğinde yakın takip ve multidisipliner yaklaşım sağlanmalıdır.

Anahtar kelimeler: Fetal teratom, EXIT prosedürü, Preterm eylem, Polihidroamnios

Introduction

Teratomas are tumors of pluripotent origin that can be detected in various parts of the body. Oropharyngeal fetal teratomas are very rare. There is limited information in literature as case reports.

Case Report

A 29-year-old, G2P1 pregnant woman, whose history was unremarkable, was admitted to the perinatology clinic because of a fetal cranial mass. In the obstetric ultrasound examination there was intrauterine a single live fetus and fetal biometric measurements was observed approximately 20 weeks. The deepest vertical pocket was 9 cm and mild polyhydramnios was diagnosed. Maxillary bone, lower and upper lip were visualized normal but approximately 6 cm mass, which was estimated to originate from the fetal right oropharyngeal region, was protruded through the fetal mouth. The mass was lobulated and contained solid areas. High blood flow was observed with Doppler. Amniocentesis was performed, karyotype and

microarray results were observed normal. The family was informed about possible fetal and obstetric complications. Regular examination was recommended in Perinatology Clinic. At the 28th week of pregnancy, she was hospitalized with the diagnosis of severe polyhydramnios and threatened of preterm labor. In vaginal examination, there was 2-3 cm cervical dilation and regular uterine contractions despite tocolytic treatment. Ex utero intrapartum treatment (EXIT) protocol was planned and 1430 gr female baby was delivered with cesarean section. The tracheostomy was performed with EXIT procedure after that newborn was transferred to the neonatal intensive care unit. In the first physical examination of the newborn; there was an oropharyngeal original mass, approximately 8-10 cm in size, protruding from the mouth, macroscopically compatible with a teratoma (Figure 1). There was bleeding in the mass, and the hemoglobin level measured was 6.8 g/dl at the 3rd hour after delivery. Unfortunately, neonatal death occurred after cardiopulmonary arrest at the 7th hour after birth.

Discussion

Teratomas are the most common fetal tumors(1). Oropharyngeal teratomas are extremely rare and the risk of recurrence in subsequent pregnancy is very low(2). Fetal teratomas can be recognized by ultrasound examination with high sensitivity and low false-positive rate. For the diagnosis of fetal teratomas, the false positivity rate with ultrasound examination was given as 3.3%(3). Fetal MRI may provide additional benefits for the location and surgical planning of fetal teratomas(4). In our case report, oropharyngeal giant teratoma was diagnosed with fetal ultrasound examination. MRI was planned for surgical planning, but could not be performed due to preterm delivery.

Pregnancies with a fetal teratoma may result in high obstetric complications such as fetal death, polyhydramnios, preterm labor and preeclampsia(5). Fetal therapy has been described in the literature. Minimally invasive fetal therapies, such as fetoscopic laser ablation, radio frequency ablation, or vascular coiling, provide interruption of vascular flow to tumors. Fetal therapy can potentially improve perinatal outcomes but is often complicated by intrauterine death and preterm birth(6).

Prenatal diagnosis, management of obstetric complications, fetal MRI requirement, planning EXIT procedure, and postnatal surgical treatment could be possible to improve fetal outcomes with a multidisciplinary approach with perinatology, radiology, pediatrics and pediatric surgery.

Conclusion

Fetal teratomas are rare but have a high risk of obstetric and neonatal. Close follow-up in Perinatology Clinic and a multidisciplinary approach should be provided to increase survival.

Keywords: Fetal teratoma, EXIT procedure, Preterm labor, Polyhydramnios

Figure 1. Postnatal picture, giant mass protruding from the mouth of newborn, tracheostomy procedure was applied.

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IMPACT OF POST COVID-19 PANDEMIC ON DEMAND FOR MEDICAL APPLIANCES IN PAKISTAN

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ABSTRACT

This research investigates the Impact of Post COVID-19 pandemic on demand for medicalappliances in Pakistan. Data were collected from 20 medical appliances suppliers in Karachi and Hyderabad. Data were analyzed by using SPSS-25-version. In Pakistan $785 million health care medical appliances imported from various countries. It was revealed that medical appliances demand increased by 25% percent and also increase the price of US$ has negative impact on purchasing behavior of the supplier as well as customers in Pakistan. Due to increase in US$ prices very few suppliers are purchasing medical appliances from United States of America. It was further revealed that after post COVID-19 pandemic low health man power, lack of trainings to use these appliances also a big issue in many hospitals so government and private sector should come forward to trained people about these medical appliances.

Key words: Post COVID-19, Pandemic, medical appliances, Pakistan.

KEY ROLE IN PATIENT SAFETY NURSE'S ADVOCACY ROLE

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ABSTRACT

Nurses, who are the strongest defenders of patient safety, in which the nurse plays a key role, fight for patient safety and take precautions by working meticulously. By advocating and defending the rights of patients, nurses strive for patients to receive the service they deserve with the quality they deserve. Patient safety measures prevent financial losses and provide savings. Patient safety is important to improve the quality of health services. This study was organized to establish patient safety and culture, the nurse's advocacy role and practices, the measures to be taken, and international strategies to be determined and put into practice. Scope of work; patient safety culture, medical errors, the development stages of the concept of patient safety culture, national and international practices, and targets were tried to be examined. In the light of current literature, the advocate role of the nurse in patient safety is discussed.

Keywords: patient safety, nurse roles, medical error, patient safety culture

KEY ROLE IN PATIENT SAFETY NURSE'S ADVOCACY ROLE

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ABSTRACT

Nurses, who are the strongest defenders of patient safety, in which the nurse plays a key role, fight for patient safety and take precautions by working meticulously. By advocating and defending the rights of patients, nurses strive for patients to receive the service they deserve with the quality they deserve. Patient safety measures prevent financial losses and provide savings. Patient safety is important to improve the quality of health services. This study was organized to establish patient safety and culture, the nurse's advocacy role and practices, the measures to be taken, and international strategies to be determined and put into practice. Scope of work; patient safety culture, medical errors, the development stages of the concept of patient safety culture, national and international practices, and targets were tried to be examined. In the light of current literature, the advocate role of the nurse in patient safety is discussed.

Keywords: patient safety, nurse roles, medical error, patient safety culture

INTRODUCTION

Nurses have taken on the role of patient advocacy, which is a key role in providing safe and effective care to patients from their first steps in hospitals with high-risk environments (Barr, Wynaden & Heslop, 2019). Nurses work with great devotion to ensure the safety of the patients and are in an important position to protect the rights of the patients and to ensure that the patients are discharged as soon as possible with the highest quality service (Karlsson et al., 2019). Patient safety and health service quality are directly proportional, and nurses provide better quality service every day with the measures taken (Liu et al., 2019). The concept of patient safety has emerged with the concept of quality in health services, and it is the cornerstone of quality health services, which includes all the measures taken to prevent the harm that health services will cause to the person, together with Hippocrates, for the first time with the understanding of "not harm first" (Korkmaz 2018; Yüceler 2021; Korkmaz 2022).

In other words, the concept of malpractice; is defined as the harm to the patient due to ignorance, errors, and inexperience of the healthcare professionals (Pekince & Sahin Duman, 2023). Medical interventions applied to the patient carry some risks for the patient's right to life, which is the only right that should be protected, and these errors occur due to carelessness, imprudence, extreme fatigue, lack of knowledge, inexperience, negligence, as well as doing the wrong procedure, not doing the necessary action, and doing the necessary action incorrectly. income (Değdaş, 2018). The types of medical errors applied to the patient are;

Medication Error: Errors related to the medication treatment process administered by the physician.

Diagnostic Error: Diagnostic errors often occur when the patient's problem is not diagnosed correctly and promptly, or there is a disruption in communicating the correct diagnosis to the patient.

Treatment Error: Incorrect or incomplete treatment in the light of valid medical information.

Patient Safety Errors: Dropping the patient, and misidentifying the patient are the patient safety issues that cause the most medical errors and take place in the literature.

Other Errors (Due to System Deficiencies): Malfunctions in the equipment used (monitor, ventilator, etc.), insufficient automation, inadequate devices, missing devices, and

medical errors caused by the technical structure and administrative structure of the hospital are evaluated in this group (Çarıkçı- Eslek- Kırbaş- Aktaşçı- Baştimur, 2021).

The purpose of patient safety is to provide opportunities that will have positive results for patients, staff, and patient relatives (Yüceler, 2021). Detection, prevention, and remedial activities related to patient and employee safety are important (Aydin, 2018).

Historical Development of Patient Safety

Although the first studies on patient safety emerged in 1951 in the USA, it gained a place in the health sector after the 1960s. In 1955, it was the work of the US physician Ernest Cedman on patient files. Following this, the Anesthesia Patient Safety Foundation "Harvard Medicine Practice" study was established in 1984 and the "Medical Practice Study" was conducted in Colorado and Utah in 1992. The 1st Annenberg Patient Safety Conference was held in 1995. Patient safety studies gained momentum with the involvement of politicians in studies on patient safety in 1996. Studies on patient safety and reports of research results were shared with the public in 1997-1998. In 2000, standards for quality and patient safety began to be established. In 2001, the National Patient Safety Task Force (FDA, AHRQ, CDC, CMS) was established. In 2002, insurance companies also carried out studies on patient safety. The priority areas for the national action report have been published by the (IOM), the FDA's criteria for drug coding have been determined, and the health promotion institute has developed interactive quality resources. (Korkmaz, 2018). For patient safety, the Patient Safety Association was established in Turkey in 2006 and the Ministry of Health published standards with thirty-four items under the title "Patient and Employee Safety", which include the objectives of JCI and WHO. Regulation on Ensuring Patient and Employee Safety" has been published (Korkmaz, 2018).

Ensuring Patient Safety

The main reason for the high number of nurse-related errors reported in Turkey is that blood collection and drug treatment practices are under the responsibility of nurses, and in this context, these errors can be prevented by increasing the number of nurses, strengthening nurses and in-service training (Çakmak-Konca-Teleş, 2018).

To ensure Patient Safety; Hospital administrators should identify risky situations in advance. Institutional culture should be established for the detection and recording of medical errors. Physicians should be able to access the information of their patients quickly and easily.

Patient file access should be facilitated by electronic archiving. The patients and their relatives should be informed about all treatments and procedures applied to the patients, the risks should be explained and consent should be signed. National and international training programs, seminars, and congresses on patient safety should be supported. Training should be organized for all personnel before starting work and for personnel who need training. Necessary legal arrangements should be made in order not to encounter grievances and obstacles against medical errors. And the compensations to be paid in cases where the error is finalized should be stated in detail and clearly. (Kurt- Scaring, 2021). The workload should be lightened by increasing the number of employees and employee hours should be regulated. Training should be organized to prevent communication disorders caused by verbal requests and to make patient safety notifications. An environment of trust should be established between the manager and the employee, and their suggestions should be taken by ensuring the participation of employee representatives in committee meetings (Öztürk- Çelik, 2021).

Nurse's Advocacy Role and Safe Nursing Practices

Nurses have many roles and responsibilities, and one of them is the advocacy role (Stievano, A., & Tschudin, 2019). In her role as a nurse advocate, she reduces the factors that violate the patient's rights, helps her to express herself, and advocates for patients' rights that are violated and ignored in the health system (Kirkland & Hyman, 2021). The nurse's advocacy role is an autonomous role with a high degree of independence. It is closely related to ethical values as it is based on patient and human rights (Banerjee et al., 2021).

Nurse patient; informs and obtains consent in all treatment and diagnosis processes, protects the patient from unnecessary procedures, takes care of the patient's interests and acts on the side of the patient, acts on patient rights sensitivity and supervisors, prevents sexual abuse against the patient, supports the patient's self-expression, patient rights sensitivity and includes control approaches (Açıkgöz – Baykal 2023, Taylan-Alan-Kadıoğlu 2011, Aydemir 2018). Nurses and physicians have a lot of responsibility for medical errors. After a medical error, not only the patient is harmed, but also the country's economy suffers due to the increase in hospitalization times and extra expenditures (Zirpe et al., 2020). In addition, even the most insignificant medical error causes a loss of confidence in the patient and his relatives against the healthcare professionals and dissatisfaction with the healthcare system. Recording and reporting medical errors ensures the reduction, prevention, management, and development of appropriate strategies (Çarıkçı et al., 2021).

In patient safety, nurses are responsible for patient authentication, effective communication, ensuring drug safety to prevent medication errors, transfusion safety, drop precautions, radiation safety, reduction in hospital infections, marking the right side in surgical procedures, reporting medical errors, learning national codes correctly and using them appropriately is the responsibility (Khan & Tidman, 2022).

Authentication of patients; It is done with patient wristbands with name, surname, protocol number, identity number, and date of birth, given to the people by the hospital by the nurse (Marufu et al, 2022). Ensuring effective communication; By avoiding terminological language, information is given to the patient and their relatives in an understandable and plain language (Goldsmith et al., 2019). Ensuring drug safety; inpatient medications are recorded by the nurse and notified to the physician the responsible physician periodically evaluates the medications, and the physician records the patient's medication, dose, time, and method of administration on the patient sign (Gangwar et al., 2023). To ensure the safety of transfusion, the nurse first verifies the patient's identity, and consent is obtained from the patient or his relatives. The nurse who will perform the transfusion initiates the transfusion process according to the transfusion protocol and makes the follow-up (Malhotra et al., 2022). In the process of reducing the risk of infection; The nurse carries out the procedures by the infection control and prevention program standards determined by the institution by the "Inpatient Treatment Institutions Infection Control Regulation" (Liu et al., 2020). Actions to be taken to prevent patient falls; patients are evaluated by nurses and patients at risk of falling are identified and necessary precautions are taken (Nyberg et al., 2019). Safe application of surgical procedures; Nurses are responsible for material control in the surgical environment, authentication, transfusion to the operating room, and admission to the operating room (Li & Huang, 2022). To prevent the negativities arising from waiting in hospitals; The priority status of the patient is evaluated, information is given about the waiting time and reasons, the patient is directed to another institution if he/she wishes, and timely intervention is provided (Lee & Lee, 2020). According to the situations of the units that threaten the health of health workers; the nurse provides protective equipment and protects the patient and herself from infectious diseases and ensures patient safety (Kurt- Korkutan, 2021).

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A COMPREHENSIVE REVIEW ON LIPOSOMES: A NOVEL DRUG DELIVERY SYSTEM

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ABSTRACT:

Aim and objective: Liposome was derived from two Greek words "Lipos" meaning fat, and "Soma" meaning body. Liposomes, where spherical-shaped vesicles consist of phospholipids and cholesterol vesicles are under extensive investigation as drug carriers for improving the bioavailability and delivery of therapeutic agents. Due to innovative developments in liposome technology, numerous liposome-based drug delivery systems are currently in a clinical trial, and recently some of them have been approved for clinical use. Due to their size, hydrophobic and lipophilic character, they are upcoming systems for drug delivery. This novel drug delivery system aims to target the drug directly to the site of action. **Method:** Liposomes are biocompatible and stable They have the unique property to entrap both hydrophilic drug and lipophilic drugs (amphipathic nature) to their compartment and lead to a controlled-release effect. They are 0.05 to 5micrometertre in diameter. These are prepared by using various methods handshaking method, sonication, freeze-drying method, ethanol injection method, ether injection method, and micro-emulsion method. **Results:** After the formulation, the evaluation of liposomes is checked by using physical parameters, chemical parameters, and biological for the establish the purity and potency of various lipophilic constituents. **Conclusion**: The conclusion of the study it can be used as a therapeutic tool in the fields like tumor targeting, genetic transfer, immunomodulation, skin and topical therapy, treatment of infection, anti-cancer, vaccination, and gene delivery system.

KEYWORDS: Liposomes, novel delivery, Phospholipids, controlled release.

A LOOK AT THE NUTRITION OF GENERATION Z: FOOD PREFERENCES AND NUTRITIONAL HABITS

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ABSTRACT

Purpose: The preferences and purchasing power of generation Z, the world's largest consumer group, lead to an increase in food diversity. This study aims to determine the food choices, eating habits and access to healthy nutrition of the generation Z. **Method:** The research was carried out with 197 university students, 137 female and 60 male, born in 2000 and above, between February and April 2023. The research data were collected by a questionnaire form on a free online platform. The obtained data were analyzed and evaluated in SPSS 25 package program. **Results:** It was observed that 87.3% of the participants skipped meals, and breakfast was skipped the most. When the food consumption frequencies are examined, 54.8% consume red meat, 35.5% milk/yogurt, 38% consume vegetables 1-2 times a week. Foods that can be accessed frequently are home-made meals at 55.3%, and fast food at 40.6%. While preferring food, satiating (82.7%) and easily accessible (48.2%) were the most important factors. The majority of the Z generation participants (83.8%) eat out 1-2 times a week or more, also 69.5% prefer the online food ordering method. It was determined that they paid the attention to the price (frequently 39.1%; always 25.9%), while choosing food. **Conclusion:** The majority of the participants live in the family home, which has increased access to home meals. However, when the food preferences and consumption frequencies of the generation Z are examined, it has been determined that the consumption of eating out, fast foods, sweetened beverages, and packaged foods is high, and the consumption frequency of basic food groups (meat, dairy, vegetables) is low.
Key words: Dietary Habits, Food Access, Food Preferences, Generation Z

1. Introduction

There have been significant changes in the lifestyles, eating habits and food preferences of individuals worldwide compared to the past centuries (Ozturk and Tekeli, 2021). One of the important factors affecting the lifestyles and behaviors of individuals is generational differences. Generation Z is considered to be the generation of individuals born in and after the year 2000. This generation is the generation born with technology and has easy access to information since their lives are integrated with technology (Dilber and Dilber, 2021; Saulo, 2016). It has been observed that the generation Z, who can easily access information about healthy nutrition, are selective in their food preferences (Ozturk and Tekeli, 2021; Ermiş ve ark., 2015). At the same time, the preferences and purchasing power of Generation Z, the world's largest consumer group, lead to an increase in food diversity (Zuo et al., 2022).

Individuals must meet their biological, psychological, social and cultural needs in order to maintain their lives, one of the most important is nutrition (Dilber and Dilber, 2021). Nutrition; It is the use of nutrients in the body for growth, maintenance of life and health. For this reason, adequate and balanced intake of energy and nutrients is important for individuals to be healthy. It has been pointed that growth and development are adversely affected and health is deteriorated in insufficient or excessive intake of nutrients (Baysal, 2020). Nutrition does not only meet physiological needs, but is also associated with factors such as social, economic, cultural, and religious beliefs. It is great importance to be deeply informed about the food preferences and nutritional habits of different generations and to determine the factors that affect these preferences in order to develop future nutrition policies (Ozturk and Tekeli, 2021). In this study, it was aimed to determine the nutritional habits and food preferences of the generation Z.

2. Material and Method

This cross-sectional, descriptive study was conducted in the province of Istanbul with the questionnaire method.

This study was carried out with a total of 197 generation Z university students, 137 women and 60 men, born in 2000 and above. Following the ethical approval (decision no 10/1), data were collected from adult volunteers on the online platform between February and April 2023, and the findings were evaluated in May 2023.

Data collection form
A data collection form was consisted to evaluate the general characteristics of individuals (gender, place of residence, smoking/alcohol use, income status, regular exercise, etc.), nutritional habits and food preferences. The participants' height (cm) and body weight (kg) were questioned and their body mass index (BMI) (kg/m^2) was calculated by the researchers.

Statistical analysis

The obtained data was analyzed using the Statistical Package for Social Sciences (SPSS) version 25.0. In the context of descriptive statistics, the answers to the appropriate questions in the data collection form were calculated with frequency (n), percentage (%); the minimum and maximum values, mean values and standard deviations of the individuals' age, height, body weight and BMI were determined. Chi-square test based on frequency distribution was used to determine for a systematic relationship of the two variables. The level of significance was accepted as $p<0.05$.

3. Findings and Discussion

A total of 197 participants 137 (69.5%) were female and 60 (30.5%) were male. Mean age was 21.12+1.31 years, mean body weight was 63.15±13.94 kg, mean height was 169.99±9.90 cm and the mean BMI is 21.65±3.12 (kg/m²) of students. The general characteristics of the participants are given in Table 1.

Table 1. General characteristics of the participants

		n	%
Gender	Female	137	69.5
	Male	60	30.5
Living place	Dormitory	36	18.3
	With Friends	42	21.3
	With Family	119	60.4
Regular exercise	Yes	50	25.4
	No	147	74.6
Income status	Not sufficient	3	1.5
	Sufficient for my needs	21	10.7
	Middle	99	50.3
	High	74	37.5
Smoking	Yes	44	22.3
	No	127	64.5
	Sometimes	26	13.2
Alcohol	Yes	28	14.2
	No	99	50.3
	Sometimes	70	35.5

It was determined that most of the generation Z participants sometimes skip meals (63.5%), while the most skipped main meal was breakfast with 46.2%, the least skipped meal was dinner with 8.3%. There was no significant difference in the frequency of skipping meals according to gender (p=0.256). Likewise, in another study, when university students were evaluated in terms of nutritional habits, it was revealed that the most skipped meal was breakfast and the least skipped meal is dinner (Zeren, 2022).

Home meals (73.1%) are the main meal group preferred by the participants, but the rate of those who frequently access these meals was found to be 55.3%. While the rate of those who prefer fast food/street food is 23.9%, those who have access to these meals more frequently are 40.6%. There was no significant difference according to gender in terms of preferred foods (p=0.810).

Dilber and Dilber (2021), found that 32.4% eat out once a week, 15.8% twice a week of Z generation participants. In a study carried out to reveal the nutritional knowledge and behaviors of high school students, who are also in the generation Z, they prefer to eat meals out and they prefer mostly fast foods. (Kazkondu, 2021). In our study, it was observed that 83.2% of the generation Z students eat out at least 1-2 times a week or more. Table 2 shows the frequencies eating out of participants.

Table 2. The frequencies eating out of participants

Frequencies eat out	n	%
Never	0	0
1-2/month	32	16.2
1-2/week	86	43.7
3-4/week	53	26.9
5-6/week	11	5.6
Everyday	15	7.6

Table 3 shows the factors that participants pay attention when choosing food or meal.

Table 3. Factors that participants pay attention to when choosing food or meal

Factors	Yes		No	
	n	%	n	%
Healthy	92	46.7	105	53.2
Fulfilling	163	82.7	34	17.3
Cheap	75	38.1	122	61.9
High nutritional value	61	31.0	136	69.0
High in nutrients and minerals	39	19.8	158	80.2
High protein content	49	24.9	148	75.1
Easy preparation	89	45.2	108	54.8
Accessible	95	48.2	102	51.8
Organic	22	11.2	175	88.8
Non food additives	34	17.3	163	82.7
Low in calories	17	8.6	180	91.4

Table 4 shows the frequencies of the factors that participants pay attention to while purchasing food.

Table 4. The frequencies of factors that participants pay attention to when purchasing food

Factors	Never		Sometimes		Often		Always	
	n	%	n	%	n	%	n	%
Healthy	13	6.6	89	45.2	76	38.6	19	9.6
Price	2	1.0	67	34.0	77	39.1	51	25.9
Organic	45	22.8	121	61.4	25	12.7	6	3.1
Food additives	51	25.9	97	49.2	34	17.3	15	7.6

Food preferences of individuals vary depending on factors such as social life, economic status, education, gender, age, their attitudes towards foods and healthy nutrition information (Cappelli and Cini, 2020; Bartkiene et al., 2019). Therefore, generational differences, which are one of the important factors affecting the lifestyles and behaviors of individuals, also affect their eating habits. Ozturk and Tekeli (2021), observed that the Z generation consume the foods they think are healthy even though they do not have sensory appeal, and they ignore the practicle factor in the foods they think are unhealthy. In our study, it was observed that participants preferred food fulfulling (82.7%) and accessible (48.2%) factors. In addition, it was determined that they most often pay attention to the price when purchasing food.

The food consumption frequencies of the participants are given in Table 5.

Table 5. Frequency of food consumption

Food groups	Never n	Never %	1 /month n	1 /month %	1-2 /week n	1-2 /week %	3-4 /week n	3-4 /week %	Everyday n	Everyday %
Meat	10	5.1	42	21.3	108	54.8	33	16.8	4	2.0
Chicken	3	1.5	20	10.2	125	63.4	42	21.3	7	3.6
Fish	47	23.8	113	57.4	37	18.8	0	0	0	0
Egg	11	5.6	29	14.7	75	38.1	52	26.4	30	15.2
Milk, yogurt, kefir, ayran	8	4.1	7	3.6	70	35.5	68	34.5	44	22.3
Cheese (cheddar, feta cheese, etc.)	13	6.6	8	4.1	74	37.6	47	23.8	55	27.9
Vegetable	7	3.6	11	5.6	75	38.1	64	32.4	40	20.3
Fruit	3	1.5	13	6.6	80	40.6	52	26.4	49	24.9
Legumes	8	4.1	38	19.3	107	54.3	36	18.2	8	4.1
Nuts	5	2.5	50	25.4	72	36.6	45	22.8	25	12.7
Salami, sausage , bacon, sausage, etc.)	37	18.8	69	35,1	71	36,0	15	7.6	5	2.5
Packaged foods (chocolate, waffles)	5	2.5	34	17.3	78	39.6	47	23.9	33	16.7
Pastries (bread, bagel, cake)	6	3,1	57	28.9	84	42.6	37	18.8	13	6.6
Fast food (burgers, pizza, etc.)	8	4.1	65	33.0	101	51.3	18	9.1	5	2,5
Soft drinks	61	30.9	37	18.8	62	31.5	24	12.2	13	6.6
Coffee	10	5,1	17	8.6	62	31.5	35	17.8	73	37.0
Tea	7	3,6	15	7.6	56	28.4	40	20.3	79	40.1

4. Conclusion

In this study, the nutritional habits, food preferences and food consumption frequencies of young adults of the generation Z were determined. It has been seen that accessibility and fulfilling are important factors in the food preferences of the Z generation. The food consumption frequency of healthy and nutritious food groups such as milk, meat, cheese and vegetables was found to be low, and the frequency of packaged foods and eating out was found to be relatively high. With the developing technologies, access to foods has become even more easily, especially with the online ordering method. The food preferences and dietary habits of the generation Z, which is a large consumer group, should be investigated very carefully in order to create a healthy society.

It is thought that this study will contribute to the development of appropriate suggestions by revealing the food choices and habits of the generation Z, both today's and future potential consumers.

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GELİŞİMSEL PEDİATRİ POLİKLİNİĞİNDE TAKİP EDİLEN ÇOCUKLARIN UYKU VE BESLENME SORUNLARININ DEĞERLENDİRİLMESİ

EVALUATION OF SLEEP AND FEEDING PATTERNS IN CHILDREN FOLLOWED AT DEVELOPMENTAL PEDIATRICS OUTPATIENT CLINIC

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Uzm. Dr., Adana Şehir Eğitim ve Araştırma Hastanesi Gelişimsel Pediatri Polikliniği

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ÖZET

Uyku ve beslenme düzeni, çocukların sağlıklı fiziksel ve zihinsel gelişimi için kritik öneme sahip olduğu bilinen önemli faktörlerdir. Gelişimsel açıdan risk altında olan veya gelişimsel zorluklar yaşayan çocuklar, bu alanlarda sorunlar yaşama eğilimindedir ve bu durum, onların sağlık ve gelişimini olumsuz yönde etkileyebilir. Bu nedenle, bu tür çocukların izlenmesi ve yönetimi için gelişimsel pediatri poliklinikleri önemli bir rol oynamaktadır.

Bu çalışmanın amacı, gelişimsel pediatri polikliniğine başvuran hastalar arasında ebeveynlerin çocuklarının uyku ve beslenme ile ilgili sorun yaşama sıklığını belirlemek ve gelişimsel zorlukları olan çocuklarda ailelerin bu konudaki kaygılarını vurgulamaktır. Çalışmada, Kasım 2022 ile Haziran 2023 tarihleri arasında Adana Şehir Eğitim ve Araştırma Hastanesi Gelişimsel Pediatri Polikliniği'ne başvuran hastalardan elde edilen tıbbi kayıtlar geriye dönük olarak taranmıştır. Bu kayıtlardan ebeveynlerin ve çocukların sosyodemografik verilerine ve ebeveynlerin "Çocuğunuzun uykuları nasıl?" ve "Çocuğunuzun yemesi nasıl?" sorularına verdikleri yanıtlara ulaşılmıştır. Elde edilen veriler, frekans tabloları ve yüzdelik hesaplamaları kullanılarak analiz edilmiştir.

Toplam 248 hastanın verilerine eksiksiz olarak ulaşılmıştır. Çalışmanın sonuçlarına göre, gelişimsel zorlukları olan çocukların ebeveynleri, çocuklarının uyku ve beslenme düzenleri ile ilgili yüksek sıklıkta sorunlar yaşadıklarını bildirmiştir. Özellikle bu durumu; ailelerin %45.6'sının beslenme sorunu yaşayan, %36.3'ünün uyku sorunu yaşayan çocuklarını ifade etmesi vurgulamaktadır. Ayrıca, bu çocukların %22.2'sinin hem yeme hem de uyku sorunlarına sahip olması, bu konuda yapılan müdahalelerin zorluğunu ortaya koymaktadır.Bu sonuçlar, gelişimsel pediatri polikliniklerinde yapılan uygulamalarda ailelerin çocukların uyku ve beslenme ile ilgili kaygılarının dikkate alınmasının önemini vurgulamaktadır. Gelişimsel zorlukları olan çocuklar başta olmak üzere tüm hastaların sağlıklı gelişimi için uygun değerlendirme ve destek stratejilerinin uygulanmasının, çocukların sağlıklı ve dengeli gelişimi açısından

büyük bir önem taşıdığı ve uzun dönemli sonuçları üzerinde olumlu etkileri olduğu göz önünde bulundurulmalıdır.

Anahtar kelimeler: uyku, yeme, gelişimsel zorluklar, ebeveynler

ABSTRACT

Sleep and feeding patterns are well-known critical factors for the healthy physical and mental development of children. Children who are at developmental risk or experiencing developmental challenges tend to encounter issues in these areas, which can negatively impact their overall health and development. Therefore, developmental pediatrics clinics play a significant role in monitoring and managing children facing such difficulties.

The aim of this study is to determine the frequency of sleep and feeding problems reported by parents among patients attending the developmental pediatrics clinic and to highlight the concerns of parents regarding their children's sleep and feeding, especially those with developmental challenges. Medical records of patients who visited the Adana City Training and Research Hospital Developmental and Behavioral Pediatrics Outpatient Clinic between November 2022 and June 2023 were retrospectively analyzed. Socio-demographic data of parents and children were recorded, and parents' responses to the questions "How are your child's sleep patterns?" and "How is your child's feeding?" were examined. The data were analyzed using frequency tables and percentage calculations.

Complete data of 248 patients were obtained. According to the findings, parents of children with developmental challenges reported a higher frequency of sleep and feeding problems. Specifically, 45.6% of parents reported feeding problems, while 36.3% reported sleep problems in their children. Additionally, 22.2% of children experienced both feeding and sleep problems, highlighting the complexity of intervention required for these cases.

These results underscore the importance of considering parents' concerns about their children's sleep and feeding in the practices of developmental pediatrics clinics. Proper assessment and support strategies are crucial for the healthy development of all patients, particularly those with developmental challenges. It is essential to recognize the long-term positive effects of such interventions on the overall well-being and balanced development of children.

Key words: sleep, eating, developmental disabilities, parents

MEDICINAL PLANTS ADOPTED BY TRADITIONAL GYNAECOLOGISTS TO TREAT SOME GYNAECOLOGICAL AND OBSTETRICAL DISORDERS IN THE SOUSS MASSA REGION

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ABSTRACT

The population of southern Morocco particularly that of Souss Massa uses traditional empirical care, several specialties of traditional medicine exist in the region including women healers considered traditional pediatricians, these women used medicinal plants to treat gyneco-obstetrical disorders using herbal recipes and traditional practice. this study was carried out in order to collect information on the therapeutic practices and medicinal plants adopted and used by women healers named locally by "ferraga" or "tachrift" and "tagouramt" in the Souss Massa region (Agadir Idaoutanan, Inzegane Ait Meloul and Chtouka Ait Baha), in order to preserve and protect this invaluable inheritance from loss and overlook.Using questionnaires, a series of surveys were conducted during the years 2018-2019 and 2019-2020, on the one hand, among the population (sample of 279 people) to determine the importance of these women healers in the health sector of the region of these women healers, and on the other hand, a survey was conducted among these women healers to collect the recipes adopted in the treatment of children's diseases. The population that uses traditional medicine frequently resorts frequently to these women healers to urogenital infections (vaginitis and endometritis) Dysmenorrhoea (menstrual pain), infertility, Breastfeeding (insufficient milk) and Retroverted uterus. The floristic analysis of the adopted recipes has revealed 59 species divided into 28 botanical families, of which the Apiaceae 20.7% and the Zingiberaceae 17.2% are the most widespread, sometimes the delay in pregnancy is linked to an effect of witchcraft, in which case the healers recommend an incense known as tfoussikha, made up of 15 species divided into 13 botanical families, and a mineral, alum stone. While lebriq designates another mixture of warming plants adopted as emmenagogues and to treat dysmenorrhoea, 33 species were collected, divided into 19 botanical families, of which the most common are the Lamiaceae (42.10%). In total, 86 species were recorded in 40 botanical families of which Lamiaceae (30%) and Apiaceae (27.5%), Asteraceae, and Zingiberaceae (17.2%) are the most represented .These results show that the women healers have a very important place in the health service, especially they have a very interesting knowledge of the treatment of digestive and respiratory disorders and especially of the effects attributed to sorcery. The plants identified in this study could constitute a data base for further research in the field of phytochemistry and pharmacology.

Keywords: Traditional medicine, Women Healers, medicinal plants, urogenital diseases

COMPARISON OF OBSTETRIC AND NEONATAL OUTCOMES IN PREGNANT WOMEN WITH PLACENTA PREVIA, WITH AND WITHOUT PLACENTA ACCRETA SPECTRUM: A RETROSPECTIVE COHORT ANALYSIS IN A TERTIARY CENTER

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ABSTRACT

Background. Placenta previa (PP) and the accreta spectrum (PAS) are significant contributors to the occurrence of postpartum hemorrhage (PPH). The aim of this study was to address the existing knowledge gap by conducting a comparative analysis of various maternal and neonatal outcomes, including gestational age at delivery, the amount of bleeding during surgery, the number of blood products transfused, admission to the intensive care unit, and length of hospital stays. Methods. Pregnant women with placenta previa who underwent MRI scans between October 2017 and May 2022 were retrospectively included in the study. The sample population analyzed comprised 71 pregnant women at various stages of gestation, ranging from 23 to 41 weeks. Results. A comparison of the length of hospital stays between the groups indicated that patients with PAS had a significantly longer duration (p<0.001). Statistically significant differences were observed in the surgical procedures conducted between the groups (p<0.001). Most patients in the PAS group (65.9%) underwent total abdominal hysterectomy (TAH), while the non-PAS group (34.1%) underwent cesarean section (C/S) surgery. Conclusions. Our results suggest that risk factors for placenta previa vary depending on the presence of PAS. These results aim to support clinicians in identifying risks and unfavorable perinatal outcomes for pregnant women with placenta previa, with or without PAS.

Keywords: Placenta previa, Placenta accreta spectrum, maternal outcomes, neonatal outcomes

SOCIAL VULNERABILITY AND MEDICATION ADHERENCE IN INDIVIDUALS WITH CHRONIC OBSTRUCTIVE PULMONARY DISEASE

KRONİK OBSTRÜKTİF AKCİĞER HASTALIĞI OLAN BİREYLERDE SOSYAL KIRILGANLIK VE İLAÇ UYUMU

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ABSTRACT

Background & Aim: The association between social vulnerability and medication adherence in individuals with chronic obstructive pulmonary disease is unclear. The aim of this study was to show the correlation of social vulnerability and medication adherence in individuals with chronic obstructive pulmonary disease.

Methods: Data collection was conducted by face to face interview in November 2022 and May 2023. A Data Gathering Form, the Social Vulnerability Scale and the Medication Adherence Report Scale were used to collect data. The study included 136 patients. Descriptive statistics, the Mann–Whitney U test, Kruskal-Wallis tests, Spearman's correlation, and simple linear regression analysis were used to analyze the data.

Results: The mean scores of individuals with chronic obstructive pulmonary disease for social vulnerability and medication adherence were 20.02±6.69 and 22.76±3.29 respectively. Levels of social vulnerability varied according to comorbidity (p=0.01), hypertension (p=0.01), heart failure (p=0.03), being admitted to hospital/emergency department due to COPD exacerbation (p=0.03), and using herbal products instead of medication (p=0.00). Mean scores for medication adherence were lower in women (p=0.02), never smokers (p=0.01), and those who used herbal products instead of medication (p=0.01).

Conclusions: Having a higher level of social vulnerability is associated with worse medication adherence. Knowing the potential factors affecting social vulnerability and medication adherence can provide an opportunity to determine appropriate strategies to increase the medication adherence of individuals with chronic obstructive pulmonary disease.

Keywords: Chronic obstructive pulmonary disease, frailty, social vulnerability, medication adherence

ÖZET

Giriş ve Amaç: Kronik obstrüktif akciğer hastalığı olan bireylerde sosyal kırılganlık ve ilaç uyumu arasındaki ilişki net değildir. Bu çalışmanın amacı, kronik obstrüktif akciğer hastalığı olan bireylerde sosyal kırılganlık ile ilaç uyumu arasındaki ilişkiyi göstermektir.

Method: Verilerin toplanması Kasım 2022 ve Mayıs 2023 tarihlerinde yüz yüze görüşme yoluyla gerçekleştirildi. Veri toplamak için Veri Toplama Formu, Sosyal Kırılganlık Ölçeği ve İlaç Uyumunu Bildirim Ölçeği kullanıldı. Çalışmaya 136 hasta dahil edildi. Verilerin analizinde tanımlayıcı istatistikler, Mann-Whitney U testi, Kruskal-Wallis testleri, Spearman korelasyonu ve basit doğrusal regresyon analizi kullanıldı.

Bulgular: Kronik obstrüktif akciğer hastalığı olan bireylerin sosyal kırılganlık ve ilaç uyumu puan ortalamaları sırasıyla 20,02±6,69 ve 22,76±3,29'du. Sosyal kırılganlık düzeyleri eşlik eden hastalık (p=0,01), hipertansiyon (p=0,01), kalp yetersizliği (p=0,03), KOAH alevlenmesi nedeniyle hastaneye/acil servise başvurma (p=0,03) ve ilaç yerine bitkisel ürün kullanma (p=0,00) durumlarına göre farklılık gösterdi. Kadınlarda (p=0,02), hiç sigara içmeyenlerde (p=0,01) ve ilaç yerine bitkisel ürün kullananlarda (p=0,01) ilaç uyumu puan ortalamaları daha düşüktü.

Sonuç: Daha yüksek düzeyde sosyal kırılganlığa sahip olma, daha kötü ilaç uyumu ile ilişkilidir. Sosyal kırılganlık ve ilaç uyumunu etkileyen potansiyel faktörlerin bilinmesi, kronik obstrüktif akciğer hastalığı olan bireylerin ilaç uyumunu artırmak için uygun stratejilerin belirlenmesine fırsat sağlayabilir.

Anahtar Kelimeler: Kronik obstrüktif akciğer hastalığı, kırılganlık, sosyal kırılganlık, ilaç uyumu

INVESTIGATION OF THE EFFECT OF DAPAGLIFLOZIN ON SEPSIS-INDUCED CARDIOTOXICITY VIA ER STRESS AND AUTOPHAGY SIGNALING PATHWAYS

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ABSTRACT

Cardiotoxicity caused by sepsis is a common consequence that reduces patients' chances of survival. Sepsis-induced cardiotoxicity, endoplasmic reticulum (ER) stress, and autophagy dysfunction are important. Dapagliflozin (DPG), Sodium-glucose cotransporter 2 (SGLT2) inhibitor is an oral antidiabetic agent. and has anti-inflammatory, antioxidant and anti-apoptotic effects. The aim of this study is to investigate the effect of DPG on ER stress and autophagy pathways on cardiotoxicity caused by sepsis.

In the study, 32 Wistar Albino rats were divided into four equal groups as control (5 days 1 ml of saline (SF) orally (p.o.) and the 5th day 0.5 ml of saline intraperitoneally (i.p.), LPS (1 ml of SF p.o. for 5 days. and 5 mg/kg i.p. LPS on day 5), LPS+DPG (10 mg/kg DPG p.o. for 5 days and 5 mg/kg LPS i.p. on day 5). and DPG (10 mg/kg (2) DPG p.o. for 5 days. and 0.5 ml of SF i.p. on day 5). At the end of the experiment, the mRNA relative fold change values of the GRP78, IRE1, Beclin1, Perk, ATF4, CHOP and ATF6 genes were determined from the heart tissues of the rats sacrificed using the RT-qPCR method.

It was determined that mRNA relative fold change values of GRP78, IRE1, Beclin1, Perk, ATF4, CHOP and ATF6 genes increased significantly in the group given LPS, and decreased significantly in the group treated with DPG ($p < 0.001$). These results showed that DPG regulates ER stress and autophagy in cardiotoxicity induced by experimental sepsis model.

Keywords: Lipopolysaccharide, Dapagliflozin, Endoplasmic Reticulum stress, Autophagy

REPRODUCTIVE TRAITS OF THE HOOGHLY CROAKER *PANNA HETEROLEPIS* FROM THE BAY OF BENGAL: IN RELATION WITH ECO-CLIMATIC FACTORS

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ABSTRACT

This study is emphasized the reproductive biology of Hooghly Croaker, *Panna heterolepis* which is one of the notable fish in the Bay of Bengal (southwestern Bangladesh). In this research, we explore the correlations between the GSI (gonadosomatic index) and eco-climatic factors (temperature, rainfall, dissolved oxygen, and pH) and this research offers comprehensive insights into different facets of reproduction such as sexual maturity, spawning season, and the peak spawning period. A total of 569 female individuals captured from Bay of Bengal through monthly sampling from January to December 2019. Measuring board and a digital balance were used in measurements, including total length (TL) and body weight (BW). Gonads were meticulously excised and weighed to an accuracy of 0.01 g. The GSI (gonadosomatic index in percentage), MGSI (modified gonadosomatic index in percentage), and DI (Dobriyal index) were taken into consideration to evaluate size at sexual maturity (L_m), spawning season, and peak spawning season. Based on these indices, the L_m was estimated 15.0 cm in TL. Additionally, a logistic simulation estimated L_{50} to be 15.0 cm TL. Highest values of GSI, MGSI, and DI indicated the spawning season, which lasted from January to July with a peak in February. Additionally, there was a substantial relationship between GSI and Fulton's condition factor (K_F). Furthermore, a significant correlation between GSI and temperature was observed. Other environmental parameters, such as rainfall, dissolved oxygen, and pH, did not exhibit any appreciable relationship with GSI. The findings of our research might also be used to the implementation of particular management strategies for *P. heterolepis* in the Bay of Bengal and its surrounding aquatic ecology.

Keywords: Bay of Bengal, Eco-climatic factors, Gonadosomatic index, Hooghly Croaker, Size at sexual maturity, Spawning season,

NANOMEDICINE IN CARDIOVASCULAR DISEASE-APPLICATION FOR DRUG DELIVERY SYSTEM IN CVDs-ANTI-IMFLAMMATORY NANOMEDICINE FOR CVDs

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ABSTRACT

Nanotechnology can be used in therapies for atherosclerosis by increasing systemic agent circulation time, lowering off-target cytotoxicity of drugs, improving drug solubility, decreasing the required dosage, combining diagnostic and therapeutic agents to form theranostics. Nanotechnology can be used in therapies for atherosclerosis by increasing systemic agent circulation time, lowering off-target cytotoxicity of drugs, improving drug solubility. For cardiac related disorders, such as atherosclerosis, hypertension, and myocardial infarction etc.. Cardiovascular diseases (CVDs) are the leading causes of morbidity and mortality worldwide. However, the early and long outcomes vary considerably in patients, especially with the current challenges facing the detection and treatment of CVDs. Nanotechnology offers the opportunity to use nanomaterials in improving health and controlling diseases. Notably, nanotechnologies have recognized potential applicability in managing chronic diseases in the past few years, especially cancer and CVDs. It carriers to increase the pharmaco-efficacy and safety of conventional therapies. Different strategies have been proposed to use nanoparticles as drug carriers in CVDs; however, controversies regarding the selection of nanomaterials and nano formulation are slowing their clinical translation. Therefore, this review focuses on nanotechnology for drug delivery and the application of nanomedicine in CVDs. Despite the improved clinical management, cardiovascular mortality is predicted to rise in the next decades due to the increasing impact of aging, obesity, and diabetes. Treatment for cardiovascular diseases is limited currently to oral medicines or invasive surgery. This review will explore for potential solutions to the limited pharmacological therapies currently on the market and the future that lies ahead for the place of nanotechnology within cardiovascular medicine.

Keywords: cardiovascular disease, controlled release of drugs, nanomedicine, nanotechnology, application of drug delivery system in CVDs

DeNovo SAMPLING AND SEQUENCE DERIVED STRUCTURAL DESCRIPTORS BASED IN-SILICO IDENTIFICATION OF HOST-PATHOGEN PROTEIN INTERACTIONS

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ABSTRACT

The prediction of host-pathogen protein-protein interactions (HPPPIs) is crucial for understanding the mechanisms of infectious diseases and developing effective therapies. Experimental methods for identifying these interactions are time-consuming and expensive, and there is a need for efficient computational methods to predict these interactions. In this study, we propose a novel approach for predicting HPPPIs that combines sequence-derived structural features with de novo sampling for negative examples. Firstly, we extract structural features from the amino acid sequences of the host and pathogen proteins using a computational tool. These features include pseudo-amino acid compositions (PseAAC), autocorrelation features: normalized Moreau–Broto autocorrelation, Moran autocorrelation, Geary autocorrelation, composition, transition, distribution, and Sequence-order. Then, we develop a machine learning model that combines these structural features with the DeNovo sampling of non-interacting proteins to predict HPIs. The DeNovo sampling technique and sequence-derived structural features increase the likelihood of identifying novel HPIs and improve the accuracy of the predictions. To evaluate the performance of our method, we apply it to a dataset of known HPIs and compare its results with those of other state-of-the-art methods. According to our findings, our method performs better than other methods in terms of accuracy and sensitivity. By employing a proper cross-validation scheme, we have been able to portray real generalization performance where host-pathogen interactions were not supposed to be known at the training time. We also demonstrate the applicability of our approach to predict HPIs between newly sequenced proteins. Overall, our study provides a valuable tool for predicting HPIs and advancing our understanding of infectious diseases.

Keywords: Machine learning, Protein interactions, infectious diseases, host-pathogen interactions, Predictive modeling, Protein sequence

A DEED WITHOUT A NAME: UNETHICAL ETHICS

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ABSTRACT

The issue of teaching someone else how to behave and act is part of normal pedagogy; but the word itself – *pedagogy* – refers to children strictly.

Nevertheless, normal part of colonialism (here including cultural colonialism) was also the modulation of native people behaviors, a mission granted to *educated* persons. Injecting culture and why not, religious beliefs, to primitive beings was the mission of the *Kulturträger* (bearer of culture) as incarnated from Odysseus, while cunningly offering wine to his unhappy host: Polyphemus.

Long-term presence of imposing, wealthy and ruling aliens will have an impact into the society as a whole, its stratification, and even into the living habitat. There are several, why not numerous, ways to induce, provoke or try cultural changes or at least to modulate centennial and deeply rooted behaviors. As such, we would like to lend our perspective into three forms of having an everlasting say into the life of native people:

a. Concrete buildings and infrastructural interventions.
b. Gestures, verbal and non-verbal schemata, here including music and literature, so far unfamiliar to another people, meant to become part of the everyday life.
c. More sophisticated and long-term interventions such as curricula changes or academic pressure provided there would be fertile soil for reflection.

EXTRACTION OF THE ACTIVE INGREDIENTS POLYPHENOLS AND TANNINS FROM THE MEDICINAL PLANT EPHEDRA

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ABSTRACT

Ephedra is one of the medicinal plants used in traditional medicine to treat many diseases. Additionally, this plant is able to interfere with certain drugs and can potentially be used in food, cosmetic and pharmaceutical production.

Aqueous extract of Ephedra growing in the wild in Djeffara is rich in active ingredients, including polyphenols and tannins. These active ingredients have a wide range of potential health benefits, including protection against cardiovascular diseases, inflammation, and viral infections. Ephedra is also a potential source of ingredients for food, cosmetic, and pharmaceutical production. However, Ephedra is sensitive to extraction methods, organic solvents, analytical techniques, and temperature. This means that the active ingredients in Ephedra may vary depending on how the plant is extracted and processed. The purpose of this study is to identify and analyse the active ingredients "polyphenols and tannins" of the aqueous extract of the plant Ephedra growing in the wild in Djeffara with different methods of extraction: UV-Visible, HPLC, Folin- Ciocalteu (decoction and maceration) in various solvent extraction. Analyses showed that Ephedra plant extract is rich in active ingredients polyphenols (10, 19 mg EAG/g) more then in tannins (2,14 mg EC/g). Based on these studies, it is concluded that Ephedra is a natural source of active ingredients that are sensitive to extraction methods, organic solvents, analytical technique, and temperature.

Keywords: Ephedra, active ingredients, extraction, polyphenols, tannins, solvents.

HEALTH ANXIETY, SOMATIC SYMPTOMS AND FEAR OF CONTAMINATION IN NURSES

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ABSTRACT

The current study was aimed to predict the relationship between fear of contamination, health anxiety and somatic symptoms in nurses. According to first hypothesis there is likely to be a correlation between fear of contamination, health anxiety, and somatic symptoms and fear of contamination and health anxiety is likely to predict somatic symptoms. Purposive sampling technique was used to collect data from 150 nurses including both genders. The measures included The Contamination Self-Efficacy Scale, The Health Anxiety Inventory, and The Somatic Symptoms Scale. The result showed that there is a positive relationship between the study variables whereas negative relationship was found between health anxiety and somatic symptoms with regard to age and number of children. The findings will be beneficial for the nurses working in health sector in order to reduce anxiety of the nurses.

Keywords: Health Anxiety, Somatic Symptoms, Fear of Contamination, Nurses

SYNTHESIS AND CHARACTERIZATION OF A NEW ORGANIC-INORGANIC HYBRID MATERIAL BASED ON BISMUTH

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ABSTRACT

The organic-inorganic hybrid materials has been widely investigated in recents years owing to the attractive physical properties, such as photocatalysis, ferroelectric transitions, non-linear optical activity, piezoelectricity, semi-conductivity and luminescence. In this project, we centers on the synthesis and the research of physicals properties of a new zero-dimensional (0D) organic−inorganic hybrid crystal namely $(C_8H_7N_2)_4 Bi_2Cl_{10}$. The synthesis is due at room temperature by slow evaporation method. The structural properties of obtained sample was determined via X-ray diffraction, Hirshfeld surface analysis, FT-IR and electric and dielectric studies. The crystal structure of the title compound exhibits one octahedral geometry of $[Bi_2Cl_{10}]^{4-}$ interacting with two protonated cations through hydrogen bonds in a triclinic unit cell with $P\bar{1}$ space group, which accords to this structure its 0D character. Intermolecular interactions occur within the grown single crystal were elaborated by Hirshfeld surface and 2-D fingerprint plot. The vibrational properties were inquired plying the IR absorption spectroscopy. Furthermore, the dielectric, impedance and ac conductivity have been carried out over a wide range of frequency and temperature: 40 Hz–7MHz and 323–413 K, respectively. The Nyquist plots revealed the existence of grains and grain boundaries that were fitted to an equivalent circuit. As a conclusion, the investigation of complex impedance spectra indicates a relaxation phenomenon and semiconductor-type behavior of $[C_8H_7N_2]_2Bi_2Cl_{10}$. The AC conductivity obeys the Jonscher's law.

Keywords: Crystal structure; Halogenobismuthate (III); Hirshfeld surface; FT-IR; dielectric proprieties.
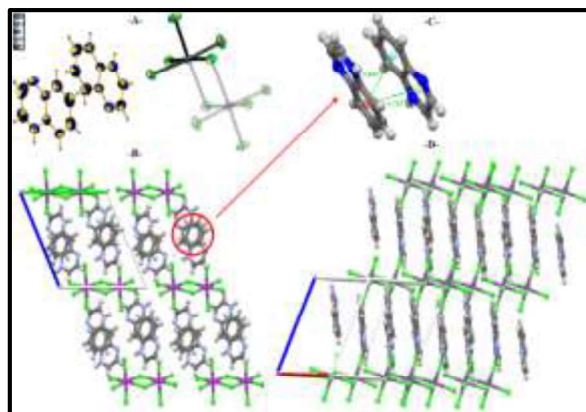
Fig.A.1: a) unit asymmetric, b) Projection in the plane (a, c), c) The π- π interactions, d) Projection along a axis of $(C_8H_7N_2)_2\ Bi_2Cl_{10}$.

EATING STYLE OF FEMALE STUDENTS AND ITS EFFECT ON THEIR HEALTH

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ABSTRACT

Eating style is way of eating that is influenced by culture, behavior and society. Like few things considered good or healthy in one culture but simultaneously people from other culture do not like to eat those things. Healthy or nutritional eating is a way of balancing the food a person eats to keep his/her body to be strong, energized and well nourished. This study was conducted to explained that eating habits of females directly affect their health. It was observed during the study that female students who do not take their meals on time faced health issues which also effected their academic performance as well. In this study objectives were set to get a comprehensive explanation of problems faced by female students in university regarding their nutritional health. The questionnaire was developed in the light of research objectives which was pre-tested from 20 respondents. Data were collected through simple random technique. 120 respondents were interviewed from three universities of District Faisalabad, 40 respondents from each university respectively. It was observed and analyzed that about 96.3% respondents thought that poor nutritional and imbalance diet is a cause of their poor health. In the same study 72.3% female accepted that due to lack of healthy and nutritional food in their habits they are facing many health issues to great extent. Majority of the respondents 68.8% thought that their eating habits affect their health to great extent. 46.9% of the respondents thought that junk food affect their heath to some extent. Only 28.1% of the female respondents were taking vitamins and minerals to maintain good health. The bi-variate analysis demonstrated that there is a significant relationship between monthly family income and eating habits. From the conducted study it was concluded that most of the students do not take care of their when they are away from home specially the ones who are living in hostels. Their eating habits became so much unhygienic and unhealthy. After conducting this research it is recommended that female students should must be aware about healthy eating lifestyle through seminars, conferences etc. They must visit a nutritionist at least once in a month to check that whether they are taking nutritional food or not.

Keywords: Eating Style, Female Students, Health

THE ROLE OF ACUPUNCTURE THERAPY IN ELDERLY WITH CANCER PAIN:
A CASE REPORT

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ABSTRACT

Introduction: Pain is an uncomfortable sensation that is felt by someone who can be related to musculoskeltal problems, cancer, and others. Pain is the biggest contributor to hospital visits. In elderly patients, the management of pain requires cautions because it is associated with increased drug side effects. Acupuncture is one of the non-pharmacological therapeutic modalities that is carried out by puncture of fine needles at the acupoints. Several studies of acupuncture in the last 20 years have shown effective results, especially in the management of pain.

Case Illustration: A 67-year-old man was consulted on acupuncture to treat pain in the lower back spine area due to cancer metastasis to the spine. Laser acupuncture therapy used Nogier A wave, 4 joules per point was performed at acupoints LI4, LR3 and ST36, and manual acupuncture at the ear BFA point. During acupuncture therapy, there is a reduction in pain in the lower back spine (initial VAS 4-5 to VAS 1), and the target of mobilization i.e. right and left tilt and sitting position can be achieved. In addition, no side effects were felt by the patient.

Conclusion: Acupuncture therapy can be considered as an effective therapy to reduce pain, including pain caused by cancer.

Keywords: Acupuncture, Cancer Pain, Elderly, Laser

EFFECT OF LIPID-BASED MULTIPLE MICRONUTRIENTS SUPPLEMENTATION IN UNDERWEIGHT PRIMIGRAVIDA PRE-ECLAMPTIC WOMEN ON MATERNAL AND PREGNANCY OUTCOMES: RANDOMIZED CLINICAL TRIAL

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ABSTRACT

Background and Objectives: In pre-eclampsia, restricted blood EFFECT OF LIPID-BASED MULTIPLE MICRONUTRIENTS supply due to the lack of trophoblastic cell invasion and spiral artery remodeling is responsible for adverse pregnancies and maternal outcomes, which is added to by maternal under nutrition. This study was designed to investigate the effects of lipid-based supplements (LNS-PLW) on pregnancy and maternal outcomes in underweight primigravida pre-eclamptic women.

Materials and Methods: A total of 60 pre-eclamptic, underweight primigravida women from the antenatal units of tertiary care hospitals in the Khyber Pakhtunkhwa Province, Pakistan, were randomly divided into two groups (Group 1 and Group 2). The participants of both groups were receiving routine treatment for pre-eclampsia: iron (60 mgs) and folic acid (400 ug) IFA daily. Group 2 was given an additional sachet of 75 gm LNS-PLW daily till delivery. The pregnancy outcomes of both groups were recorded. The clinical parameters, hemoglobin, platelet count, and proteinuria were measured at recruitment.

Results: The percentage of live births in Group 2 was 93% compared to 92% in Group 1. There were more normal vaginal deliveries (NVDs) in Group 2 compared to Group 1 (Group 2, 78% NVD; group 1, 69% NVD). In Group 1, 4% of the participants developed eclampsia. The frequency of cesarean sections was 8/26 (31%) in Group 1 and 6/28 (22%) in Group 2. The number of intrauterine deaths (IUDs) was only 1/28 (4%) in Group 2, while it was 2/26 (8%) in Group 1. The gestational age at delivery significantly improved with LNS-PLW supplementation (Group 2, 38.64 ± 0.78 weeks; Group 1, 36.88 ± 1.55 weeks, p-value 0.006). The Apgar score (Group 2, 9.3; Group 1, 8.4) and the birth weight of the babies improved with maternal supplementation with LNS-PLW (Group 2, 38.64 ± 0.78 weeks: Group 1, 36.88 ± 1.55; p-value 0.003). There was no significant difference in systolic blood pressure, while diastolic blood pressure (Group 2, 89.57 ± 2.08 mmHg; Group 1, 92.17 ± 5.18 mmHg, p-value 0.025) showed

significant improvement with LNS-PLW supplementation. The hemoglobin concentration increased with the LNS-PLW supplement consumed in Group 2 (Group 2, 12.15 ± 0.78 g/dL; Group 1, 11.39 ± 0.48 g/dL, p-value < 0.001). However, no significant difference among the platelet counts of the two groups was observed.

Conclusions: The pregnancy and maternal outcomes of underweight pre-eclamptic women can be improved by the prenatal daily supplementation of LNS-PLW during pregnancy, along with IFA and regular antenatal care and follow-up.

Keywords: pre-eclampsia; lipid-based nutritional supplements; pregnancy outcome; maternal outcome; Khyber Pakhtunkhwa Province of Pakistan

Registration: ISRCTN15485068, April 2018:https://doi.org/10.1186/ISRCTN15485068.

STRUCTURE-BASED DRUG REPURPOSING TO INHIBIT THE DNA GYRASE OF MYCOBACTERIUM TUBERCULOSIS

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Short Introduction:

Drug repurposing is an alternative avenue for identifying new drugs to treat tuberculosis (TB). Although TB can be cured with anti-tubercular drugs, the emergence of multidrug-resistant and extensively drug-resistant strains of Mycobacterium tuberculosis H37Rv (Mtb), as well as the significant death toll globally, necessitate the development of effective drugs to treat TB.

Experiments and Key result findings:

In this study, drug repurposing approach was employed to address this drug resistance problem by screening drugbank database to identify novel inhibitors of the Mtb target enzyme, DNA gyrase. The compounds were screened against the ATPase domain of gyrase B subunit (MtbGyrB47), and the docking results showed Echinacoside, Doxorubicin, Epirubicin, and Idarubicin possess high binding affinities against MtbGyrB47. Comprehensive assessment using fluorescence spectroscopy, SPR, and CD titration studies revealed that Echinacoside as a potent binder against MtbGyrB47. Further, ATPase, and DNA supercoiling assays exhibited IC_{50} values of 2.1-4.7 µM for Echinacoside, Doxorubicin, Epirubicin, and Idarubicin. Among these compounds, the least MIC_{90} of 6.3 µM and 12 µM were observed for Epirubicin and Echinacoside, respectively. Hence, our findings indicate that Echinacoside and Epirubicin target mycobacterial DNA gyrase, inhibit its catalytic cycle, and retard mycobacterium growth. Further these compounds exhibits potential scaffolds for optimizing novel anti-mycobacterial agents that can act on drug-resistant strains.

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ANTIHISTAMINES AS ADJUVANT THERAPY FOR ATOPIC DERMATITIS: A SYSTEMATIC REVIEW

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ABSTRACT

Atopic dermatitis (AD) is a common chronic relapsing inflammatory skin disease affecting up to 20% of children and adolescents worldwide. As the prevalence of AD consistently increased in Europe, Asia, Africa, and Middle East. AD requires long-term treatment so it is necessary to consider the costs, efficiency, and effectiveness of the treatment. Histamine plays important role in AD pathology. However, there is still some pros and cons in using antihistamines as adjuvant therapy for AD. This study aims to evaluate the effectiveness of antihistamines as adjuvant therapy for AD.

We systematically searched in Pubmed, Cochrane, and Springer Link database for articles published from 2018-2023. We identified 224 studies and assessed their titles, abstracts, and full texts. We focused on the treatment, mainly about the effectiveness of antihistamines for AD patients.

A total of 11 studies were selected. Nine of 11 studies, showed that antihistamines as adjuvant therapy have beneficial effects for AD patients, such as improves clinical symptoms (mainly eczema), improves immune functions, and reduces the recurrent rates. Sedating antihistamines were more prescribed in patients who saw dermatologists compared to those who saw the other types of provider (72.9% versus 50% respectively). That could be useful for the context of interrupted sleep to improves quality of life in AD patients. Antihistamine therapy were safe and cost-effective, especially in developing countries which has limited resources.

Based on our study, we concluded that antihistamine therapy can be used as adjuvant therapy for AD.

Keywords: Antihistamine, Atopic Dermatitis, Eczema, Effectiveness.

THE MODERATING ROLE OF INNOVATIVE WORK BEHAVIOR ON THE RELATIONSHIP BETWEEN TRANSFORMATIONAL LEADERSHIP STYLES AND PROJECT SUCCESS

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ABSTRACT

The objective of this study was to examine how innovative work behavior moderates the association between transformational leadership style and project success among IT professionals. A sample of 200 IT professionals was selected from various government sector IT departments located in Punjab and KPK. Data were collected using three reliable measures: the Multifactor Leadership Questionnaire by Bass & Avolio (1997), the Project Success Scale by Aga, Noorderhaven, & Vallejo (2016), and the Innovative Work Behavior Scale by Janssen (2000). The study's results demonstrated a significant positive relationship between transformational leadership style and its dimensions. Additionally, using Andrew Hayes' process model for moderation regression analysis, the study confirmed that innovative work behavior plays a significant positive role in the relationship between transformational leadership and project success among IT professionals. Finally, the study's implications for future research were discussed.

FARKLI YAŞ GRUPLARINDAN KURU KAFATASINDA STYLOMASTOID FORAMEN'İN UÇ MASTOİD SÜRECİNE MESAFESİNİN İSTATİSTİKSEL ANALİZİ
STATISTICAL ANALYSIS OF THE DISTANCE OF THE STYLOMASTOID FORAMEN TO THE TIP MASTOID PROCESS IN DRY SKULLS OF DIFFERENT AGE GROUPS

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ÖZET

Bu makale, Kemik İnsan Anatomisi ve Tıbbi Terminoloji Müzesi deposundan 150 kuru sertifikalı kafatası üzerinde temporal kemiğin mastoid çıkıntısının tepe noktası ile stilomastoid foramen arasındaki mesafeye ilişkin bir çalışmanın sonuçlarını sunmaktadır. Tüm kafatasları 6 yaş grubuna ayrıldı: Grup I - 7-12 yaş (n=23), Grup II - 13-16 yaş (n=23), Grup III - 17-21 yaş (n=26), Grup IV - 22-35 yaş (n=22), grup V - 36-60 yaş (n=46) ve grup VI - 61-74 yaş (n=10). Mesafe, yatay düzlemde eğik bir çizgi boyunca ölçülmüştür. Elde edilen veriler kaydedildi ve istatistiksel olarak işlendi. Bu mesafenin grup I'den (sağda - 8,4 ± 0,4 mm, solda - 8,3 ± 0,5 mm) grup V dahil (sağda - 12,9 ± 0,2 mm, solda - 13,1±0,2 mm) arasında arttığını bulduk.) ve grup VI'da azalır (sağda - 11,5±0,7 mm, solda - 11,5±0,6 mm). Aynı zamanda, tüm gruplar için göstergelerin karşılaştırılması her iki tarafta da yüksek bir güvenilirliğe sahipti (PH = 0.001). Ayrıca, bu gösterge grup I'de II (PU =0,001), III (PU =0,001), IV (PU =0,001), V (PU =0,001) ve VI (sağ PU<0,002; sol) ile karşılaştırıldığında her iki tarafta da daha düşüktü. PU <0,001). Grup VI'daki parametreler II (sağ ve sol PU=0,001), IV (sağ PU<0,022; sol PU<0,006) ve V (sol PU<0,013) ile karşılaştırıldığında anlamlı olarak azaldı. Grup II ile IV (sağda, PU<0,008; solda, PU<0,001) ve V (solda, PU<0,005) gruplarının göstergeleri karşılaştırıldığında da önemli farklılıklar kaydedildi. Sonuç olarak, bu göstergedeki artışın genel dinamiklerinin 60 yaşdan sonra azaldığı ve muhtemelen kapsayıcı süreçlerle ilişkili olduğu varsayılabilir. Elde edilen sonuçlar, farklı yaşlardaki insanlarda fasiyal sinir nevraljisi blokajları için kılavuzlardan biri olarak kullanılabilir.

Anahtar kelimeler: stilomastoid foramen, mastoid çıkıntı, fasiyal sinir bloğu.

ABSTRACT

This paper presents the results of a study of the distance between the apex of the mastoid process of the temporal bone and the stylomastoid foramen on 150 dry certified skulls from the repository of the Bone Museum of Human Anatomy and Medical Terminology. All skulls were divided into 6 age groups: Group I - 7-12 years old (n=23), Group II - 13-16 years old (n=23), Group III - 17-21 years old (n=26), Group IV - 22-35 years old (n=22), group V - 36-60 years old (n=46) and group VI - 61-74 years old (n=10). The distance was measured along an oblique line in the horizontal plane. The obtained data were recorded and statistically processed. We found that this distance increases from group I (on the right - 8.4 ± 0.4 mm, on the left - 8.3 ± 0.5 mm) to group V inclusive (on the right - 12.9 ± 0.2 mm, on the left - 13.1±0.2 mm), and decreases in group VI (on the right - 11.5±0.7 mm, on the left - 11.5±0.6 mm). At the same time, the comparison of indicators for all groups had a high reliability on both sides (PH = 0.001). Also, this indicator was lower on both sides in group I compared with II (PU =0.001), III (PU =0.001), IV (PU =0.001), V (PU =0.001) and VI (right PU<0.002; left PU <0.001). Parameters in group VI significantly decreased in comparison with II (right and left PU=0.001), IV (right PU<0.022; left PU<0.006) and V (left PU<0.013). Significant differences were also noted when comparing the indicators of group II with IV (on the right, PU<0.008; on the left, PU<0.001) and V (on the left, PU<0.005) groups. In conclusion, it can be assumed that the overall dynamics of the increase in this indicator decreases after 60 years and is probably associated with involutive processes. The results obtained can be used as one of the guidelines for blockades of facial nerve neuralgia in people of different ages.

Key words: stylomastoid foramen, mastoid process, facial nerve block.

LEVELS OF CARE ADDICTION AND RELATED FACTORS OF HEMODIALYSIS PATIENTS: A CROSS SECTIONAL RESEARCH

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ABSTRACT

Objective: This study was carried out to examine the level of care dependence and the factors affecting the level of care dependence in hemodialysis patients.

Method: The research was conducted between 10.09.2022 and 24.09.2022 as a descriptive cross-sectional study. The population of the study consists of 82 patients receiving hemodialysis treatment. In the research, it was aimed to reach the whole universe. The study was completed with 74 patients. Thus, 90.24% of the universe has been reached. The score range of this scale, which consists of 17 items covering activities of daily living, is 17-85. A high score indicates that the patient has a high level of independence in meeting their care needs, and a low one indicates that they are dependent on others. Research data were collected with a questionnaire and care addiction scale. The survey application time lasted 8-10 minutes.

Results: The mean score of care dependency level of hemodialysis patients was determined as 54.68 ± 18.27 . The mean score of the female participants was higher than that of the male participants, and the mean score of the married participants was statistically significantly higher than the single participants ($p < 0.05$). A statistically significant difference was found between the mean score of the care dependency scale according to the variables of hemodialysis treatment duration, presence of other chronic diseases, and the most frequently experienced symptoms ($p < 0.05$).

Conclusion : As a result, it was determined that the care dependencies of the hemodialysis patients were at a moderate level, and that they mostly had care dependencies in the areas of daily living activities, mobility, learning, memory and memory. In this respect, it can be suggested that hemodialysis patients should be evaluated individually by health professionals during the treatment process, and their daily living activities should be planned by determining their dependent and independent functions with the participation of the family.

Keywords: Hemodialysis, Care, Care Addiction

INTRODUCTION

is among the most preferred treatment methods in the treatment of end-stage renal disease (ESRD) (Akyol Durmaz, 2016). Physiological deficiencies in patients during the hemodialysis treatment process, changes in their roles in the family as a result of being dependent on the health institution and the treatment device, limitation of working life and social relations, deterioration in sexual functions, fatigue, fluid and nutrient restriction, changes in body image, treatment process and concerns about the prognosis of the disease hemodialysis are reported as frequently reported problems by their patients (Tayaz & Koç, 2020). It is reported that the necessity of being in the treatment center with certain frequencies for hemodialysis treatment affects the self-efficacy of individuals, their ability to perform routine activities, and affects the level of independence by reducing their quality of life (Bektaş et al., 2019; Muz & Eğlenci , 2013) . Changes occur in the family, work and social lives of the patient receiving hemodialysis treatment, and the treatment process causes an increase in care needs (Bektaş et al. , 2019; Tayaz & Koç, 2020). Hemodialysis treatment makes the individual dependent on the health institution, the hemodialysis machine and the health personnel or, most of the time, on someone else (Güler et al., 2022).

Care addiction is defined as the patient's need for professional support, a decrease in the level of meeting their self-care needs, and a certain level of care demand according to their addiction status (Tuncay Özkan & Fertelli Kars , 2019). In order to evaluate the level of addiction according to activities of daily living, the individual is asked about the control of body temperature, personal hygiene and dressing, breathing , eating and drinking, movement, digestion, and excretion, and it is checked how much of these activities they can perform (Çevik & Eşer, 2014; Tuncay Özkan) . & Fertelli Kars, 2019). Care addiction consists of a very complex structure, is subjective, and refers to areas of care where the patient lacks self-care that needs to be supported (Türk & Üstün, 2018). Care addiction is also a dynamic process that is directly affected by the individual's illness or disability (Çevik & Eşer, 2014; Türk & Üstün, 2018). In order to provide care in a professional way, nurses who are at the forefront of the care role need to determine the care dependency levels and care needs of the patients, primarily in their care goals. In addition, nurses plan patient-specific approaches to support patients' independence in daily life activities and to perform self-care (Güler et al. , 2022; Tuncay Özkan & Fertelli Kars, 2019). Determining the care dependencies of hemodialysis patients who are dependent on institutional treatment will contribute to the planning and healthy management of care.

Nursing interventions planned in line with the level of care dependency and needs of patients will positively affect patient satisfaction and quality of care. Accordingly, this study aimed to determine the care dependency of hemodialysis patients.

METHOD

Type of Research

The research is descriptive and cross-sectional.

Place and Time of Research

The study was conducted in a descriptive cross-sectional manner to examine the levels of care dependence and the factors affecting the patients receiving hemodialysis treatment between 10.09.2022 and 24.09.2022.

Population and Sample of the Study: The population of the study consists of 82 patients receiving hemodialysis treatment. In the research, it was aimed to reach the whole universe. The study was completed with 74 patients. Thus, 90.24% of the universe has been reached.

Inclusion Criteria: Patients over the age of 18 , who could read and write in Turkish, and volunteered to participate in the study and were receiving hemodialysis treatment were included in the study.

Data Collection: Data were collected with a questionnaire, care dependency scale.

Questionnaire Form: It is the form that includes the socio- demographic characteristics of the patients , the characteristics of end-stage renal disease and hemodialysis treatment.

Care Dependency Scale: Dijkstra et al. It was developed in the Netherlands in 1998, based on Virginia Henderson's Theory of Human Needs, to evaluate the care dependency status of patients. The scale evaluates the patient's physical and psychological care dependence comprehensively. The Cronbach alpha value of the original form of the scale was found to be 0.97 (Djkstra et al.,1999). Validity and reliability study in Turkey by Yont et al. (2010) scale 5 likert scale t string is a scale (Yant et al, 2010). The score range of this scale, which consists of 17 items covering activities of daily living, is 17-85. A high score indicates that the patient

has a high level of independence in meeting their care needs, and a low one indicates that they are dependent on others.

Ethical Aspect of the Research:

This study was carried out in accordance with the "Helsinki Declaration" , ethics committee permission (Date: 07.07.2022 number: 2022/6/7) and the permission of the health institution where the research was conducted (date / number: 06.09.2022-E. 82707) for data collection.) and consent was obtained from the participants.

Statistical Analysis and Evaluation of Data: Number, percentage and mean were used in the evaluation of data on descriptive characteristics. One in assessing the homogeneity of the data Sample Kolmogorov-Smirnov test was applied. Student's t test, Manny Whitney U test for two groups , for more than two groups; One-Way Analysis of Variance and Kruskal Wallis test and Tukey post hoc tests were used.

RESULTS

Socio- Demographical Characteristics, Disease-Specific Characteristics of Hemodialysis Patients , and the Relationship of These Features with the Care Dependence Scale (BAI) Mean Scores

It was determined that 24.32% of the participants were in the age group of 50-57, 24.32% were in the age group of 58 years and above , 54.05% were female, 68.91% were married, 68.91% had different chronic diseases. At the same time, it was determined that 43.26% of the participants had a period of 1-5 years of hemodialysis treatment. The mean score of the care addiction scale was found to be statistically significantly lower in male patients receiving hemodialysis treatment, single patients, and patients with hemodialysis treatment duration of 10 years or more ($p<0.05$) (Table 1).

Table 1. Socio- Demographical Characteristics, Disease-Specific Characteristics of Hemodialysis Patients , and the Relationship of These Features with the Care Dependence Scale (CDS) Mean Scores

FEATURE	n (%)	CDS Score Average X±SD	pTest _ value

Age			
18-25 [a] _	7 (9.45)	55.10±10.08	**0.040** F=14.228
26-33 [b]	5 (6.75)	58.28±13.47	b,c > e ,f
34-41c _	10 (13.5)	56.61±11.32	
42-49 [d]	16 (21.65)	53.22±11.08	
50- 57 [e]	18 (24.32)	53.45±10.24	
58 and above [f]	18 (24.32)	51.12 ± 11.35	
Gender			
Woman	40 (54.05)	57.18±17.76	**0.038** t = 3.448
Male	34 (45.95)	52.76±16.22	
Marital status			
Married	51 (68.91)	56.06±14.66	**0.036** t=2.802
Not married	23 (31.09)	51.07±18.23	
Education level			
Primary education	40 (54.05)	58.27±14.57	0.866 F = 8.997
High school	21 (28.37)	59.77±14.64	
University	13 (17.56)	59.39±13.55	
Any Other Chronic Diseases ?			
Yes	51 (68.91)	55.27±16.22	**0.018** t =4.702
No	23 (31.09)	59.33±12.38	
Economical situation			
Bad	18 (24.32)	61.07±12.55	
Middle	37 (50.00)	60.55±14.58	0.528 KW=14.506
Good	19 (25.68 **)**	57.19 ± 16.07	
Hemodialysis time			
[than] 1 year	13 (17.56)	60.11±13.45	**0.044** F = 8875

1-5 years [b]	32 (43.26)	57.48±13.44	c>a
6-10 years [c]	29 (39.18)	53.24±12.64	
person living with			
Spouse-Child	28 (37.82)	57.08±12.28	
Spouse	20 (27.02)	56.27±14.09	0.079 KW = 10.097
Mom dad	15 (20.28)	55.67 ± 13.15	
2nd Degree Relative	11 (14.88)	59.28 ± 14.57	
The most common problem you experience due to hemodialysis treatment			
Tiredness	32 (43.26)	53.04±15.08	**0.028** KW =21228
Pain	20 (27.02)	56.75±13.33	
Itching	14 (18.92)	58.84±17.09	
sleep problems	8 (10.80)	58.33±14.27	
Compliance with a chronic kidney disease diet			
Yes	26 (35.13)	60.07±15.96	
No	48 (64.87)	54.22±14.60	**0.030** t=1.455

t:Student t-test F:anova KW: Kruskall Wallis test

Investigation of BAI Components and Total Mean Scores of Hemodialysis Patients

The mean score of the care dependency scale of the patients receiving hemodialysis treatment was found to be 54.68± 18.27 . The areas with the lowest scores on the care dependency scale of the patients receiving hemodialysis treatment were daily activities; 2.49 ±1.24, ability to learn; 2.70 ±1. 15, mobility ; It was determined as 2.84 ± 1.42 (Table 2).

Table 2. CDS Components and Total Mean Scores of the Patients

Scale Components	**X± SD**

Nutrition	3.18 ±1.37
Body temperature	3.08 ±1.18
Body Posture	3.26 ±1.71
Avoidance of Hazards	3.66 ±1.47
Day-Night Cycle	3.29 ±1.76
Mobility	2.84 ±1.42
continence	3.04 ±1.38
dressing - undressing	3.06 ±1.37
Avoidance of Hazards	3.62 ±1.39
do not worship	3.29 ±1.64
Following the Rules	3.10 ±1.42
Daily activities	2.49 ±1.24
Entertainment Activities	3.51 ±1.63
Memory-Memory	2.81 ±1.76
Learning Ability	2.70 ±1.15
Communication	3.42 ±1.29
Communicating with Others	3.37 ±1.57
Scale Total Score	54.68 ± 18.27

ARGUMENT

Although hemodialysis treatment prolongs life expectancy in patients with end-stage renal disease, it affects the patient's life in many aspects. During the hemodialysis treatment process, patients may become dependent on the device, institution, and health personnel (Alemdar & Çınar Pakyüz , 2015). However, apart from the treatment process, the dependence of

hemodialysis patients on the individuals they live with in meeting their care needs is also affected . In this study, the levels of care dependency of hemodialysis patients and the factors affecting their care dependency were examined.

In the study, the mean score of care addiction of hemodialysis patients was determined as 54.68 ± 18.27 at a moderate level. In the study by Güler et al., in which they examined the level of care dependence and fatigue in hemodialysis patients, the level of care dependence of the participants was found to be lower than this study (Güler et al. , 2022). In the study examining the care dependency levels of chronic kidney patients, the care dependency levels of the patients were found to be moderate (Tuncay Özkan & Fertelli , 2020). In the study of Akpınar Bektaş et al., it was reported that the patients receiving hemodialysis treatment had increased disability, had difficulty in performing their daily life activities, and therefore became dependent on the care of others (Bektaş Akpınar et al., 2019) . In the literature, the self-care levels of hemodialysis patients are determined as moderate, and it is reported that they need support in meeting their self-care needs (Li et al., 2022; Sharif) . nia et al. , 2022). The moderate level of care dependence of hemodialysis patients obtained in this study is similar to the literature.

Care dependencies of hemodialysis patients are affected by individual factors. In this study, male participants compared to female participants; According to the participants in the 18-33 age range of individuals over the age of 50; The mean of care dependency score of married people was found to be statistically significantly lower than those of single (p<0.05). According to the scale evaluation, low mean score of care dependency is interpreted as high care dependency. In the study of Türker et al., female patients receiving hemodialysis treatment were found to have higher self-care levels (Türker et al. , 2022). In the study of Güler et al., care dependency of male hemodialysis patients is interpreted as higher (Güler et al. , 2022). In another study in the literature, care addiction of male participants was determined to be high (Türk & Üstün, 2018). It can be said that this finding, which is similar to the literature, is due to the fact that women are not entrepreneurs in the care processes of male patients in the care of the sick individual at home in the geography where the research was conducted. In this study , advanced age was determined as another predictor of the level of care dependency. In the studies in the literature, it is stated that care addiction increases with advanced age and self-care needs cannot be met at a sufficient level (Tuncay Özkan & Fertelli Kars, 2020; Kim et al. , 2019; Türk & Üstün,2018). Physiological changes with advancing age affect dependency on care needs. At the same time, in this study, it was determined that having another chronic disease, which is among the characteristics of the disease and treatment process , and long

duration of hemodialysis treatment (6-10 years) increased the level of care dependence. On the other hand, the levels of care dependence of hemodialysis patients who reported that they experienced fatigue symptoms most frequently were found to be statistically significantly higher. Similar to this finding, Türker et al.'s study found that as the symptom load increases in hemodialysis patients, the self-care ability decreases (Türker et al. , 2022). There was not enough research on the severity of symptoms and care dependence experienced by hemodialysis patients. In this context, it is expected that the finding of an increase in the experience of fatigue and an increase in the level of care dependence will contribute to the literature.

In this study, it was determined that hemodialysis patients had high levels of care dependence in the areas of daily activities, mobility, learning, and memory. In the study, which was completed with chronic kidney patients, it was determined that the care addiction of the participants in daily activities, entertainment activities, dressing and undressing activity areas was high (Tuncay Özkan & Fertelli , 2020) . In the study of Bilgin et al., it was determined that the patients receiving treatment in the nephrology clinic had higher levels of care addiction in the areas of daily activities, recreational activities, and mobility (Bilgin et al., 2020). When this finding obtained from this study and the literature findings are examined, it is similar that hemodialysis patients often have high levels of care dependence in areas with physical activity. It can be said that this situation may be related to the common fatigue symptom due to insufficient erythropoietin secretion that develops with the physiological process of the disease and due to institutional care. At the same time, in this study, unlike the literature, it was determined that hemodialysis patients had a high level of care in cognitive areas.

CONCLUSION

The level of care dependency of hemodialysis patients is moderate, and socio- demographic variables such as male, single, and advanced age affect the level of care dependency; It was determined that the duration of hemodialysis, the presence of other chronic diseases, and the severity of symptoms experienced also affected the level of care dependency. It was determined that hemodialysis patients needed care mostly in physiological areas, but they also had care addictions in cognitive areas. During the hemodialysis treatment, the multidisciplinary healthcare team spares time for hemodialysis patients. In this respect, the individual differences of the patients receiving hemodialysis treatment, the expected processes of chronic kidney disease and the symptoms they experience individually should be followed. In hemodialysis

patients, activities of daily living should be carried out in cooperation with the patient, family, health professionals, and patient feedback should be followed.

Interest : Regarding this study, the authors and/or their family members do not have a potential conflict of interest, scientific and medical committee membership or relationship with its members, consultancy, expertise, employment in any company, shareholding or similar situations.

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ADVANCED BIO-HYBRID MATERIALS FOR DRUG DELIVERY SYSTEMS: NEW TRENDS AND PERSPECTIVES

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ABSTRACT

The development of efficient drug delivery systems has been a paramount focus in the field of biomedical research. Advanced bio-hybrid materials have emerged as promising candidates due to their unique properties and capabilities in enhancing drug delivery efficiency. This abstract presents an overview of new trends and perspectives in the realm of bio-hybrid materials for drug delivery systems. Bio-hybrid materials combine the advantages of synthetic and biological components, offering a versatile platform for drug encapsulation, controlled release, and targeted delivery. The integration of synthetic materials, such as polymers, nanoparticles, and hydrogels, with biological entities, such as cells, proteins, and nucleic acids, has paved the way for innovative drug delivery strategies. These bio-hybrid systems harness the inherent characteristics of both synthetic and biological components, resulting in improved stability, biocompatibility, and functionality. Recent advancements in bio-hybrid materials have focused on tailoring their physicochemical properties to optimize drug delivery outcomes. Strategies such as surface modification, functionalization, and self-assembly techniques have been employed to enhance drug loading capacity, control release kinetics, and achieve targeted delivery. Additionally, the integration of stimuli-responsive elements into bio-hybrid materials has enabled on-demand drug release triggered by specific environmental cues, such as pH, temperature, light, or enzymes, further enhancing their therapeutic efficacy. Furthermore, the emergence of nanotechnology has revolutionized the field of bio-hybrid materials for drug delivery systems. Nanoscale bio-hybrid carriers, such as liposomes, polymeric nanoparticles, and exosomes, have shown great potential in overcoming various biological barriers, facilitating cellular uptake, and enabling the delivery of therapeutic agents to specific tissues or cells. The incorporation of targeting ligands, such as antibodies, peptides, or aptamers, onto the surface of these carriers allows for selective recognition and binding to specific receptors, resulting in enhanced drug accumulation at the desired sites. Moreover, bio-hybrid materials have also been explored for the co-delivery of multiple therapeutic agents, including small molecules, proteins, and nucleic acids, in a synergistic manner. This approach enables combination therapy, where different drugs act on distinct targets or pathways, thereby improving treatment efficacy and minimizing drug resistance. The incorporation of stimuli-responsive elements within these bio-hybrid carriers can facilitate the sequential or simultaneous release of multiple drugs, enabling precise control over their administration. In conclusion, advanced bio-hybrid materials hold immense potential in revolutionizing drug delivery systems. The integration of synthetic and biological components, combined with innovative strategies for tailoring their properties, has paved the way for enhanced drug encapsulation, controlled release, and targeted delivery. These materials offer new avenues for personalized medicine, combination therapy, and improved therapeutic outcomes. Further research and development in this field are warranted to harness the full potential of bio-hybrid materials and translate them into clinical applications for the benefit of patients worldwide.

Keywords: development of efficient drug delivery systems, Bio-hybrid, Nanoscale bio-hybrid, research and development.

BIBLIOMETRIC ANALYSIS OF PUBLICATIONS ON CHATGPT IN THE FIELD OF HEALTH: A VISUAL MAPPING APPROACH

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Abstract

ChatGPT has begun to attract significant interest from the scientific community in recent years, particularly due to its human-like content generation and natural language input comprehension capabilities. The purpose of this study is to investigate and evaluate studies on ChatGPT and health in the health sector using bibliometric analysis techniques and within the scope of literature. In the context of this study, a total of 85 articles on ChatGPT in the health field were examined and analyzed using a bibliometric method. As a result of the scans, it was determined that all publications were made in 2023. Only research articles were included, while other types of publications (e.g., conference papers, meeting abstracts, retracted publications, and book chapters) were excluded. In addition, studies indexed in the Science Citation Index Expanded, Social Science Citation Index, and Emerging Sources Citation Index were included. After the inclusion criteria, 45 publications were included in the research. A bibliometric analysis of the publications related to ChatGPT in the health field revealed that the majority of the publications were in the Medicine General Internal category. It was found that out of a total of 260 authors publishing in this field, 101 have at least 1 publication and 1 citation. The United States was identified as the country with the most publications, with 17 publications. It was detected that the most commonly used keyword in the publications was ChatGPT. This study will serve as a guiding resource for academics and professionals wishing to conduct research on this topic.

Keywords: ChatGPT, Bibliometrics, Health Sciences, Publication Analysis, VOSviewer

1. Introduction

ChatGPT (Chat Generative Pre-training Transformer) is a leading artificial intelligence and natural language processing technology, launched by OpenAI in November 2022 (Deng et al., 2022). It encompasses the ability to learn abstract concepts, adapt, rationalize, and reason, as well as respond to human-like traits such as attention, emotion, and creativity (Korteling et al., 2021). ChatGPT has recently begun to garner significant interest within the scientific community (Levin et al., 2023; Yiğit et al., 2023), particularly its ability to create human-like content and understand natural language inputs is rapidly increasing in health research (King, 2023). Studies examining the advantages and limitations of ChatGPT in various areas of health

such as medicine, dentistry, pharmacy, and nursing are available in the literature (Chow et al., 2023; Eggmann et al., 2023; Fatani, 2023; Li et al., 2023; Liu et al., 2023; Sallam et al., 2023).

The number of scientific publications worldwide is increasing rapidly, making it difficult to track scientific advancements. It is vital for scientists to monitor changes in different scientific fields or their subfields, requiring academics to stay up-to-date and access the necessary data at all times. This demand and necessity have correspondingly increased the use of bibliometric methods (Chen & science, 2017). Bibliometric studies are utilized to evaluate the structure of research fields, the impact of articles, and the trends and influences of different research groups (Agarwal et al., 2016; Kokol et al., 2021). Bibliometric analyses of ChatGPT-related publications can provide insights into the model's impact on natural language processing and broader trends in large language models and reveal in which health areas this technology leads (Levin et al., 2023). No bibliometric studies examining ChatGPT and health-related publications have been identified in the literature. In light of this information, the objective of this study is to explore and evaluate ChatGPT and health-related studies in the health sector through bibliometric analysis techniques.

2. Materials and Methods

Bibliometric analysis techniques were employed in this study to fulfill the research objective and explore publications related to ChatGPT in the field of health in international literature. Since our data was obtained from WoSCC, ethical approval is not required.

Data Collection

Data scanning was conducted on 06.07.2023 by entering the keywords ("ChatGPT" and "Health") into The Web of Science Core Collection (WOSCC) basic search area. A total of 85 publications were identified as a result of the scanning.

All publications were found to be made in 2023, so no time or country restrictions were applied. Only research articles were included, while other publication types (e.g., conference papers, meeting abstracts, retracted publications, and book chapters) were excluded. Also, works indexed in the Science Citation Index Expanded (SCI-E), Social Science Citation Index (SSCI), and Emerging Sources Citation Index (E-SCI) were included. After the inclusion criteria were applied, 45 publications were examined within the scope of the research.

Data Analysis

All complete records and cited references of the publications were exported from WoSCC. Data were separated according to bibliometric parameters such as title, keywords, journal, publication year, citation, author, institution, country, and references. These exported data were transferred to Microsoft Excel 2010 (Redmond, WA, USA) and VOSviewer (Leiden University, Leiden, the Netherlands) to identify the most contributing entities (authors, institutions, countries), create bibliometric descriptive indicators, and maps. In VOSviewer, there is a positive correlation between node size and the number of articles. Co-authorship analysis was used to assess collaboration between different authors, countries, and institutions (Ma & Uzzi, 2018).

3. Findings

Figure 1. Distribution of ChatGPT-related Publications in the Health Field by Categories

Figure 1 presents the distribution of ChatGPT-related publications in the health field according to categories. The highest number of publications were found in the area of Medicine General Internal (9 publications), followed by Health Care Sciences Services (6 publications), Engineering Biomedical (4 publications), Medical Informatics (4 publications), and Public Environmental Occupational Health (4 publications).
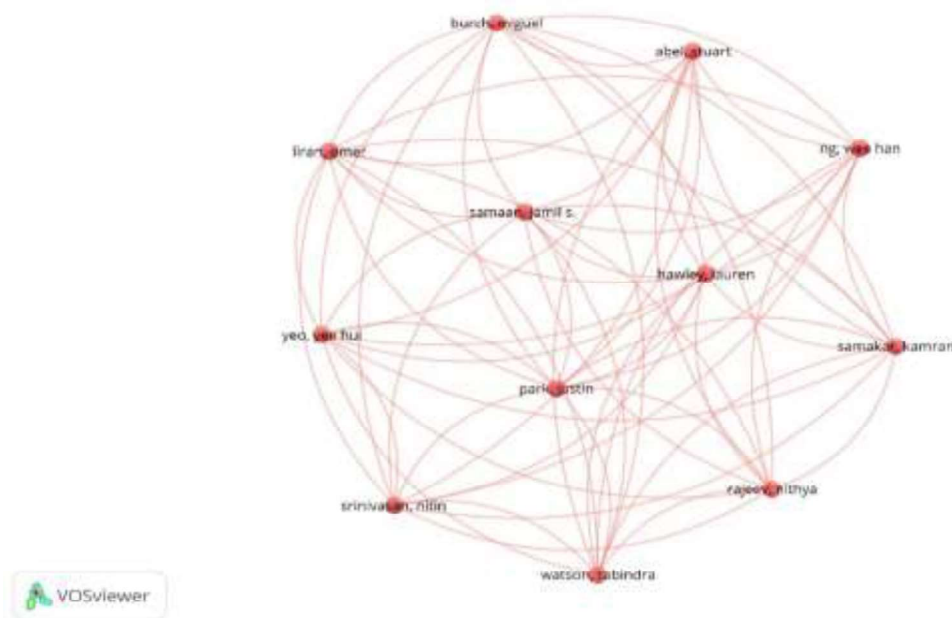
Figure 2. Co-Author Network

Figure 2 presents the visual network map of the co-author analysis among the authors of ChatGPT-related publications in the health field. Out of 260 authors, 101 have at least one publication and one citation. In the figure, larger circles signify more publications, while smaller circles indicate fewer publications. If there is a line between two author names, it

denotes collaboration between those two authors. The thicker the line, the more extensive the collaboration between the two authors. Since all authors have only one publication, all circle sizes appear equal. The most cited authors are Bellini V (17 citations), Bignami E (17 citations), Cascella M (17 citations), and Montomoli J (17 citations). Authors with the highest connection strength are Abel S (connected with 11 authors), Burch M (connected with 11 authors), Hawley L (connected with 11 authors), and Liran O (connected with 11 authors).
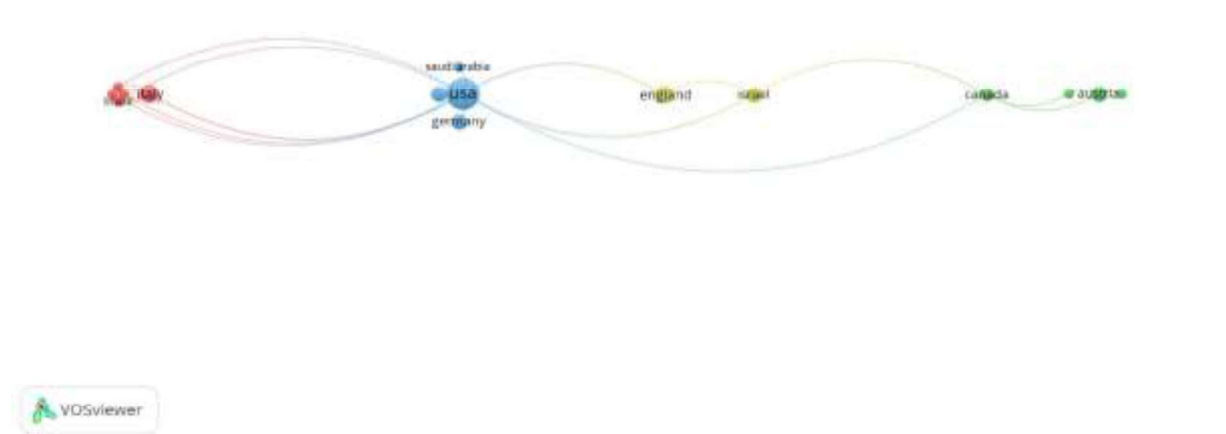
Figure 3. International Collaboration Network

Figure 3 illustrates the visual network map of co-author analysis for international collaboration among the countries of ChatGPT-related publications in the health field. Using the program (VOSviewer), the number of documents cited from countries is selected with a minimum of 1, resulting in 31 countries grouped into 4 different color clusters. In a cluster, the closer two countries are to each other, the stronger their connection. The countries that have published the most in the field of ChatGPT in healthcare are the United States (17 publications), India (5 publications), and Italy (4 publications). The countries with the highest connection strength in terms of ChatGPT-related publications in the health field are the United States (connected with 14 countries), Italy (connected with 6 countries), and Brazil (connected with 5 countries).
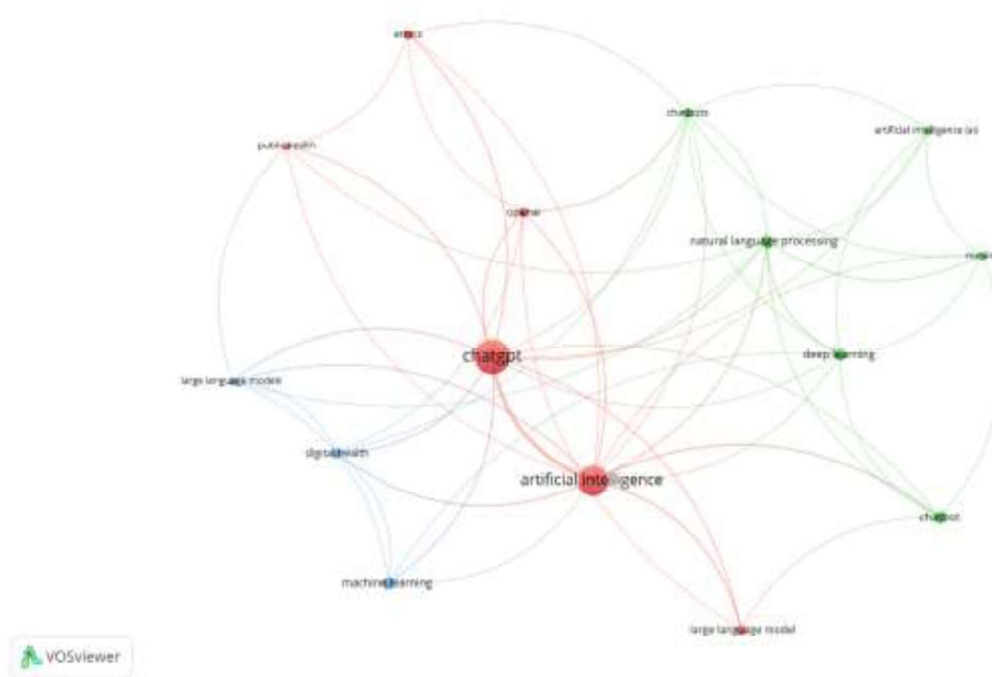
Figure 4. Keyword Network

Figure 4 presents the visual network map of the relationship between keywords in publications related to ChatGPT in the field of health. Among a total of 166 keywords in the publications, 15 are the most frequently used keywords, appearing at least twice. According to the visual representation in Figure 4, the most cited keywords are ChatGPT (24), artificial intelligence (19), and natural language processing (4). The size of the circles indicates the subject that has been researched the most, and the closer two keywords are to each other, the more frequently they are used in publications. The lines between them signify that they were used in the same publication.

4. Discussion and Conclusion

In this study, a bibliometric analysis of publications related to ChatGPT in the field of health has been conducted. ChatGPT, an advanced artificial intelligence language model developed by OpenAI and released in November 2022, has seen rapidly increasing research interest despite its novelty (Berşe et al., 2023; Borkowski et al., 2023; Cadamuro et al., 2023; Dobovšek, 2023; Temsah et al., 2023).

The analysis has determined that ChatGPT has been explored in various categories within the health domain. A total of 85 publications were reviewed, with the most concentrated publishing activity observed in the field of Medicine General Internal. This finding indicates that studies have been conducted on ChatGPT's ability to understand and interpret complex health information within general internal medicine practices. It suggests that ChatGPT's technological capabilities may play a role in significant clinical processes such as interpreting health information and interacting with patients. These findings predict that, despite being a novel technology, ChatGPT is quickly gaining acceptance in the health sector, and research in this area is expected to continue increasing. There is a perceived need for more extensive and in-depth research for ChatGPT to have a broader impact on health services.

Upon examining authorial connections, it has been determined that the authors Bellini V, Bignami E, Cascella M, and Montomoli J have received the most citations (Cascella et al., 2023). This demonstrates that these authors have made significant contributions to ChatGPT and health-related studies, and their works are frequently referenced by other researchers.

Bibliometric analyses are typically used to identify the most productive countries, authors, and journals (Çiçek Korkmaz & Altuntaş, 2022). Such analyses are considered an essential tool for measuring leadership, impact, and collaboration in scientific literature. The analysis of international collaboration has determined that the United States is the country with the highest number of publications on ChatGPT and health topics. This finding indicates that America is taking a leading role in both health sciences and artificial intelligence technologies. This leadership reflects a marked influence of America on innovative research and applications in these two sectors. Additionally, India and Italy are also significant contributors to publications on ChatGPT and health, demonstrating their emergence as key actors in these fields. Contributions from these two countries are adding diversity and depth to the global literature in artificial intelligence and health.

Keywords serve as a tool to highlight a document's main subjects and content, summarizing the essence and emphasizing the general topics related to a specific research area (Ke et al., 2020). Keyword analysis, by identifying recurring and significant concepts in documents, illustrates where research topics and trends are focused. The keyword network analysis performed in this study reveals that the most frequently used keywords are ChatGPT, artificial intelligence, and natural language processing. This points out that the application of ChatGPT in the health field requires significant integration of artificial intelligence and natural language processing technologies. This finding also indicates that these technological concepts play an essential role in a rapidly advancing area, particularly in the provision and development of health services. The analysis of keywords signals an acceleration in research advancements in these fields and promotes the use of tools like ChatGPT in healthcare services and general health information management.

In conclusion, this bibliometric study provides valuable insights into how ChatGPT is utilized in the health field. The results of the study reveal various advantages and limitations of using this technology in the healthcare sector. However, it should be noted that more extensive and comprehensive research is needed for ChatGPT to fully realize its potential in the field of health.

Limitations

The limitations of this study include the collection of data solely from The Web of Science Core Collection (WOSCC) database, and the exclusion of data that could be obtained from other databases. The analysis has included only articles in the English language, potentially overlooking significant studies in other languages. In light of these limitations, the findings must be interpreted with caution. Future research may benefit from conducting a more comprehensive bibliometric analysis that encompasses a broader range of languages, collects data from various databases, and includes different time frames. Such an approach could evaluate the impact of ChatGPT in the health field from a more expansive perspective.

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THE EFFECT OF SMOKING STATUS ON RESPIRATORY FUNCTION AND PELVIC FLOOR DYSFUNCTION

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ABSTRACT

Objective: The aim of this study is to compare the respiratory function and pelvic floor dysfunction between smokers and non-smokers.

Method: A total of 235 smokers (51 females, 40 males; Age: 26.82±7.81; Body Mass Index: 27.31±25.01) and non-smokers (128 females, 16 males; Age: : 24.92±6.06; Body Mass İndex: 22.9±5.03) were included in the study. Dysfunctional breathing pattern was assessed usıng the Self-Evulation of Breathing Questionnaire (SEBQ), while pelvic floor dysfunction was evaluated usıng the Global Pelvic Floor Bother Questionnaire (GPFBQ).

Results: It was observed that there was no significant difference in age between smokers and non-smokers (p>0.05). However, there were statistically significant differences (p<0.05) in body weight, height, and BMI between the two groups. Smokers had higher body weight and BMI, as well as taller height, compared to non-smokers. Furthermore, there was a significant difference between the two groups in terms of the SEBQ and GPFBQ p<0.05). Smokers had higher scores in both questionnaires compared to non-smokers.

Conclusion: The scores of individuals who smoke compared to non-smokers in both surveys being high indicate that they have dysfunctional breathing patterns and are more prone to pelvic floor problems. These results suggest that individuals who smoke should be evaluated not only for respiratory issues but also for pelvic floor dysfunction. Also, it is important to mention the risks of pelvic floor dysfunction in information campaigns related to smoking.

Keywords: pelvic floor dysfunction, respiratory function, smokers and non-smokers.

SPONTANEOUS PREGNANCY IN A PERIMENOPAUSAL WOMAN WITH LOW AMH LEVEL: A CASE REPORT

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ABSTRACT

Introduction

AMH is a biological marker that helps predict ovarian reserve, which refers to the number of growing follicles during ovulation induction and is an early indicator of ovarian aging. This marker is commonly used to design treatment protocols and predict ovarian response in treatment cycles.

Case

A 43-year-old woman with a history of thyroiditis and irregular menstruation has normal physical exam results. Ultrasound results show normal uterus and ovaries with five antral follicles. She has had two C-sections in the past and no other known medical issues.

During the physical examination, no visible abnormalities were detected. Ultrasound results indicate that both the uterus and ovaries appear normal, with five antral follicles between them.

Laboratory tests showed FSH: 54.89 IU/L, LH: 30.13 IU/L, E2: 42 pg/mL, TSH: 1.95 μIU/mL, fT4: 0.85 ng/dL, PRL: 5.1 ng/mL, and AMH: 0.03 ng/mL.

The patient was noted to be pregnant during a follow-up appointment and later delivered a live baby via C-section.

Discussion

Studies on the effectiveness of AMH levels in predicting natural pregnancy have produced inconsistent results. While ovarian reserve and fertility decline with age, low AMH levels may increase the odds of pregnancy through increased follicular recruitment and multi-follicular ovulation, particularly for those with diminished ovarian reserve.

Conclusion

Low levels of Anti-Mullerian Hormone (AMH) do not necessarily indicate reduced fertility in women, even if they are older. Despite the limited indication of clinical pregnancy that AMH levels provide, over-analysis and undue anxiety about fertility should be prevented.

Keywords: Anti-Mullerian Hormone (AMH), Perimenopause, Pregnancy

ANTIDIABETIC AND ANTIOXIDANT POTENTIALS OF MUSHROOM-DERIVED COMPOUNDS: AN *IN VITRO* AND *IN SILICO* APPROACH

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ABSTRACT

Many health benefits have reportedly been associated with mushroom consumption. This study determined the chemical constituents of the methanol extract of *Pleurotus ostreatus* (MEPO) and investigated its antioxidant and antidiabetic effects using *in vitro* and *in silico* approaches. The chemical composition of the MEPO was determined using the GC-FID technique, while DPPH and FRAP methods were used to determine antioxidant activity. The antidiabetic activity was evaluated using α-amylase and α-glucosidase inhibition assays, while molecular docking was done to give insight into the binding potentials of MEPO constituents against α-amylase, α-glucosidase, and PEP carboxykinase activities. Thirteen compounds, including ephedrine, oxalate, rutin, naringin, and kaempferol, were identified in MEPO. MEPO showed moderate antioxidant activity, as observed from the DPPH (IC_{50} = 732.41 mg/ml) and FRAP studies. The extract also demonstrated stronger inhibition of α-glucosidase activity (IC_{50} = 246.58 mg/ml) than α-amylase activity (IC_{50} = 1074.05 mg/ml). Docking studies revealed that rutin and naringin interacted effectively with amino acid residues crucial for α-amylase, α-glucosidase, and PEP carboxykinase activities via hydrogen bonds. The result shows that MEPO is a rich store of beneficial compounds which could be explored for the management of diabetes and associated complications.

Keywords: *Pleurotus ostreatus*, methanol extract, α-amylase, α-glucosidase, PEP carboxykinase, antidiabetic

COMPARATIVE ANALYSIS OF HERBAL DRUG NANOPARTICLES WITH TRADITIONAL HERBAL MEDICINES-REVIEW

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ABSTRACT

Herbal drug nanoparticles are a promising approach to enhancing the efficacy and bioavailability of traditional herbal medicines. However, their use is still in its infancy, and there is a need for comparative analysis between herbal drug nanoparticles and traditional herbal medicines to understand their similarities and differences. This review provides a comprehensive analysis of the characteristics, advantages, and limitations of herbal drug nanoparticles in comparison to traditional herbal medicines. Herbal medicines have been used for centuries for their therapeutic properties. However, their efficacy is often limited due to poor bioavailability and low concentrations of active compounds. Herbal drug nanoparticles are a promising approach to overcome these limitations and enhancing the efficacy of traditional herbal medicines. Nevertheless, a comparative analysis between herbal drug nanoparticles and traditional herbal medicines is necessary to understand their similarities and differences. Herbal drug nanoparticles are prepared by reducing the size of herbal extracts or compounds to the nanoscale range. This process enhances the surface area of the particles, leading to increased bioavailability and efficacy. Moreover, herbal drug nanoparticles can be designed to target specific tissues or cells, resulting in improved pharmacokinetics and pharmacodynamics. Herbal drug nanoparticles have several advantages over traditional herbal medicines. Firstly, they exhibit improved bioavailability due to their small size, leading to enhanced therapeutic effects. Secondly, herbal drug nanoparticles can be administered through various routes, including oral, topical, and intravenous, allowing for more precise dosing and targeted delivery. Thirdly, herbal drug nanoparticles can be designed to exhibit sustained-release properties, leading to prolonged therapeutic effects. Finally, herbal drug nanoparticles can be engineered to overcome various physiological barriers, such as the blood-brain barrier, resulting in improved pharmacokinetics. Firstly, there is a lack of standardized protocols for their preparation, leading to variability in their characteristics and efficacy. Secondly, the safety and toxicity of herbal drug nanoparticles need to be thoroughly evaluated before their clinical use. Finally, there are regulatory challenges associated with the development and approval of herbal drug nanoparticles. Compared to traditional herbal medicines, herbal drug nanoparticles exhibit improved bioavailability, targeted delivery, sustained-release properties, and enhanced pharmacokinetics. However, the safety and toxicity of herbal drug nanoparticles need to be carefully evaluated before their clinical use. Moreover, herbal drug nanoparticles require specialized techniques for their preparation, leading to higher costs and complexity compared to traditional herbal medicines. Comparative analysis between herbal drug nanoparticles and traditional herbal medicines is necessary to understand their similarities and differences and to determine the optimal approach for the treatment of various diseases.

Keywords: herbal drug nanoparticles, traditional herbal medicines, efficacy, bioavailability, safety, toxicity, pharmacokinetics, pharmacodynamics, comparative analysis

CAT-STRATCH DISEASE IN 4 CASES WITH DIFFERENT CLINICAL PRESENTATIONS

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ABSTRACT

Cat scratch disease (CSD) is a zoonotic disease caused by *Bartonella henselae*. CSD can be transmitted from an infected cat under 1 year of age by a rake or bite, exposure to cat fleas, contact of cat saliva to compromised skin or mucous membranes. CSD is one of the most common causes of benign regional lymphadenopathy in children. As well as mild systemic symptoms, the disease may spread through the blood and present with pathologies affecting all tissues. In this article, 4 pediatric patients with no known disease who came to different departments with different clinical features are presented.

3 patients had axillary and 1 patient epitrochlear lymphadenopathy. Two of them went to surgery first, their pathology results are compatible with 'non-caseating-granulomatous lymphadenitis'. Tuberculosis and other granulomatous infections are investigated. Other two patients were primarily considered to have malignancy and they were referred to the Pediatric Hematology department. When the history of all 4 patients was deepened, it was learned that they had cat contact, two cases also had a history of scratching. These patients were diagnosed with CSD as a result of examinations and they gave a dramatic response to macrolide treatment.

CSD serology tests are not among the routine tests performed during lymphadenopathy research in our country. If there is a cat scratch or bite in the history of patients who cannot be diagnosed serologically or microbiologically, have painful lymphadenopathy and who do not respond to nonspecific antibiotic treatment, CSD should definitely be considered in the differential diagnosis.

Key Words: Cat scratch disease, Child, Lymphadenopathy

THERAPEUTIC POTENTIAL OF CARICA PAPAYA L. LEAVES-DENGUE FEVER

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ABSTRACT

Dengue fever, caused by the dengue virus, remains a significant global health concern, with no specific antiviral treatment available. In recent years, researchers have explored natural remedies for combating dengue fever, and Carica papaya L. leaves have emerged as a potential therapeutic agent. This abstract summarizes the therapeutic potential of Carica papaya L. leaves in the management of dengue fever.Carica papaya L., commonly known as papaya, has been traditionally used in folk medicine for its various pharmacological properties. The leaves of this tropical fruit contain several bioactive compounds, including alkaloids, flavonoids, polyphenols, and proteolytic enzymes, which possess anti-inflammatory, antiviral, and immunomodulatory activities. Studies have shown that Carica papaya L. leaf extract exhibits promising antiviral effects against the dengue virus. The active components of the extract have been found to inhibit viral replication and reduce viral load in infected cells. Furthermore, these compounds have demonstrated immunomodulatory effects by enhancing the immune response against dengue virus infection.In addition to its antiviral activity, Carica papaya L. leaf extract has shown anti-inflammatory properties. Dengue fever is characterized by an excessive immune response leading to inflammation, and Carica papaya L. leaves can help mitigate this inflammation. The extract has been found to suppress the production of pro-inflammatory cytokines and reduce the severity of symptoms associated with dengue fever.Moreover, Carica papaya L. leaf extract has been reported to possess hepatoprotective properties. Dengue fever can cause liver damage, and the bioactive compounds in the extract help protect liver cells against oxidative stress and inflammation induced by the virus.

Keywords: Dengue fever, Carica papaya, Immunomodulatory effect, Anti-inflammatory, Hepatoprotective property, Antiviral activity

SCREENING OF TRADITIONALLY USED MEDICINAL PLANTS FOR POTENTIAL ANTIBACTERIAL / ANTIFUNGAL / ANTIOXIDANT ACTIVITY

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ABSTRACT

Plants have been utilized for a number of purposes for ages, including the treatment of infectious diseases, food preservation, and the creation of fragrances.Cinnamon (Cinnamomum zeylanicum), a tropical tree belongs to the Lauraceae family, is indigenous to Sri Lanka and the Malabar coast of India. It is also known by various names including dalchini in Hindi, cannelle in French, kaneel in German, canella in Spanish, and yookgway in Chinese, are given to it in many languages. From ancient times, oregano (Origanum vulgare L.) has been used as a herbal cure. It is a well-known medicinal, culinary, and essential oil herb. Rosemary is one of the world's most widely used spices and medicinal herbs. It is also considered to be one of the most antioxidant-active spices of all natural antioxidants.The number of diseases caused by various microorganisms is increasing day by day. Phytochemicals and phytoalexins are compounds that are beneficial to the body that are found in medicinal plants. These include polyphenols and flavonoids, as well as carotenoids and vitamins A, C and E. Because of their antibacterial and antioxidant properties, numerous studies have shown that medicinal plants have been used to treat human diseases for thousands of years. A wide range of diseases like cancer, cardiovascular, inflammatory, neurological, and digestive system illnesses and many more can be treated by medicinal plants. They also lower oxidative stress in cells.The medicinal plants may be used as an antibiotic in combination with other drugs or they may be used on their own. Alternatively, we can say that they are the best alternative to synthetic antibiotics used today. According to this study, Rosemary and Oregano shows a high efficacy against different microorganisms but cinnamon is not so effective as compared to oregano and rosemary. On the other hand cinnamon has a very good antioxidant properties while Rosemary and Oregano lack this.

DESIGN, SYNTHESIS AND MOLECULAR DYNAMICS STUDIES OF SOME NEWER BENZOTHIAZOLE CONTAINING ARYL AND ALKARYL HYDRAZIDES

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ABSTRACT

The alarming rise of bacterial *resistance* is occurring worldwide and endangering the efficacy of *antibiotics*. Therefore, development of new and efficient antibacterial agents remains paramount. In the present work we designed and synthesized a series of N'-(1,3-benzothiazol-2-yl)-substituted aryl/aralkyl hydrazides **C1-C27** and evaluated for **molecular dynamics.** The RMSD plot of **107** (pdb.4URN) complex clearly visualized the acceptable range (2.8-3.4 Å) of Cα-RMSD and back bone RMSD of 2.77-3.12 Å for a period of 50ns. The ligand RMSD was observed in the range of 5.4-6.2 Å throughout 50ns with a spike of 9 Å at 20-28 ns. The RMSF plot with ligand contacts was found to be between 0.8-2.2 Å with exception for 78 to 108 amino acid residues showing 4.0 Å. From the interaction fraction the following residues Glu45, Ile46, Asn49, Asp52, Glu53, Asp76, Arg79, Gly80, Met81, Pro82, His86, Val95, Ile96, Phe97, Val99, Phe106, Thr113, Ser114, His118, Ala122, Arg138, Thr168 and Val170 mainly formed hydrophobic and water bridge contacts with ligand. The summarized timeline representation of protein ligand contacts was illustrated. The 2D interaction diagram from the trajectory analysis of 50 ns MD simulation conveyed that ligand **107** interacted with various residues of (pdb.4URN). The amino acids Glu53, Asp76 and Gly80 formed water bridged interactions at 10-13% of MD simulation trajectory. The amide -NH formed weak hydrogen bond with backbone carbonyl group of Asn49 (-N-O=C-, 25% of MD trajectory). Met81, Ile96 and Phe106 seems to be formed constant hydrophobic interactions with ligand **107**. The ligand RMSD, radius of gyration (GyrB), Molecular surface area (MolSA), Solvent Accessible Surface Area (SASA) and Polar Surface Area (PSA) were observed in the range of 0.5-1.5 Å, 3.7-4.0 Å, 248-254.61 Å^2, 82-162 Å^2 and 102-114 Å^2, respectively.

ACIL SERVIS'TEN YOĞUN BAKIMA YATAN SUDA BOĞULMA VAKALARININ RETROSPEKTIF İNCELENMESI

RETROSPECTIVE ANALYSIS OF DROWNING CASES FROM THE EMERGENCY MEDICINE TO THE INTENSIVE CARE UNIT

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ÖZET

DSÖ' nün verilerine göre: boğulmaya bağlı ölümler dünyadaki önlenebilir bütün ölümlerin %7' sini oluşturmakta ve önlenebilir ölümler arasında en yaygın üçüncü ölüm nedeni olarak karşımıza çıkmaktadır.

Bu çalışmamızda; Ocak 2012 ile Aralık 2021 tarihleri arasında acil servise başvuran suda boğulma vakalarından, YBÜ (yoğun bakım ünitesi) 'ne yatanların başvuru sırasında geliş şeklini, laboratuvar parametrelerini, solunumsal ve dolaşımsal destek tedavilerini (IMV, NIMV, HFO, Isıtma, Vazopressör) değerlendirerek mortaliteye olan etkisini incelemeyi amaçladık.

Hastalar, sağkalım durumlarına göre iki gruba ayrılarak, her iki grup arasında değişkenler incelendi. Mortalitenin bağımsız risk faktörlerini belirlemek için çok değişkenli logistik regresyon analizi yapıldı.

75 hasta (medyan yaş 49 , %62.7 erkek) sağkalım durumlarına göre iki gruba ayrıldı (Yaşayan vs Yaşamayan). %30.6 hastada mortalite saptandı. APACHE-II skoru (21 [16-28] vs 16 [12-19], p=0.004), SOFA skoru (5 [4-7] vs 4 [3-5], p=0.030) hastane başvuru öncesi arrest ve resüsitasyon olması (15 [%65.2] vs 22 [%57.9], p=0.004), ve invaviz ventilasyon ihtiyacı (18 [%78.3] vs 22 [%42.3], p=0.004) yaşamayanlar grubunda daha yüksekken acil servisde başvuru anında bakılan PO_2 değeri (46.9 [30.6-69.0] vs 58.1 [47.2-87.8], p=0.029) daha düşüktü. Çok değişkenli logistik regresyon analizi yapıldığında ; APACHE-II Skor (Odds oranı = 1.330 , [%95 CI 1.043-1.697] , p=0.017), İnvaziv mekanik ventilatör ihtiyacı (Odds oranı =8.742 , [%95 CI 1.463-52.227] , p=0.017), hastane başvuru öncesi arrest ve reüsitasyon (Odss oranı =46.928 , [%95 CI 4.002-55.280] , p=0.002), mortalite için bağımsız risk faktörleri olarak saptandı.

Ülkemizde azımsanmayacak oranda boğulma vakaları acil servise başvurmaktadır. Önlenebilir ölüm oranları içinde olması sebebiyle erken ve etkili müdahale önemlidir. Özellikle hastane başvuru öncesi resüsitasyon öyküsü olan hastalarda mortalite oranı göz önüne alındığında alınacak önlemler ve etkili kardiyopulmuner resüsitasyon hayati önem arz etmektedir.

Anahtar kelimeler: boğulma , acil servis, yoğun bakım, kardiyopulmuner resüsitasyon

ABSTRACT

According to WHO data, deaths due to drowning constitute 7% of all preventable deaths in the world and are the third most common cause of death among preventable deaths.

In this study; We aimed to evaluate the characteristics, laboratory parameters, respiratory and circulatory support treatments (IMV, NIMV, HFO, Heating, Vasopressor) of patients admitted to the ICU between January 2012 and December 2021, and to examine their effect on mortality.

The patients were divided into two groups according to their survival status, and the variables between both groups were examined. Multivariate logistic regression analysis was performed to identify independent risk factors for mortality.

75 patients (median age 49 years, 62.7% male) were divided into two groups (Survive vs. Non-Survive) according to their survival status. Mortality was detected in 30.6% of the patients. APACHE-II score (21 [16-28] vs 16 [12-19], p=0.004), SOFA score (5 [4-7] vs 4 [3-5], p=0.030) pre-hospital arrest and resuscitation (15 [65.2%] vs. 22 [57.9%], p=0.004), and the need for invasive ventilation (18 [78.3%) vs 22 [42.3%, p=0.004) were found to be higher in Non-Survive group. PO_2 value measured at the time of admission in the emergency department (46.9 [30.6-69.0] vs 58.1 [47.2-87.8], p=0.029) was lower in Non-Survive group. When multivariate logistic regression analysis is performed; APACHE-II Score (Odds ratio = 1,330 , [95% CI 1.043-1.697] , p=0.017), need for invasive mechanical ventilators (Odds ratio =8.742 , [95% CI 1.463-52.227] , p=0.017), hospital admission pre-arrest and resuscitation (Odss ratio =46.928 , [95% CI 4.002-55.280] , p=0.002) were determined as independent risk factors for mortality.

In our country, a substantial number of drowning cases apply to the emergency department. Early and effective intervention is important because it is among the preventable mortality rates. Precautions to be taken and effective cardiopulmonary resuscitation are of vital importance, especially when considering the mortality rate in patients with a history of resuscitation before hospital admission.

Keywords: drowning, emergency department, intensive care, cardiopulmonary resuscitatio

ECMO UYGULANAN HASTALARDA GÜNLÜK HEMŞİRELİK BAKIMININ HEMODİNAMİK PARAMETRELERE ETKİSİ

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ÖZET
Yoğun bakımda kritik hastalarda günlük hemşirelik bakımı sırasında hemodinamik parametreler değişebilmektedir. Çalışmanın amacı ciddi kalp yetmezliği nedeni ile ekstrakorporeal membran oksijenasyonu (ECMO) uygulanan hastalarda günlük hemşirelik bakımının hastanın hemodinamik parmeterelere etkisini değerlendirmektir. Kesitsel tanımlayıcı tipteki araştırma Kasım 2022-Şubat 2023 tarihleri arasında yapılmıştır. Çalışmanın örneklemini bir şehir hastanesinin kalp damar cerrahi yoğun bakım ve kalp akciğer transplantasyon yoğun bakım ünitelerinde ECMO uygulanan 12 hasta oluşturmuştur. Verilen hemşirelik bakımları (pansuman değişimi, endotrakeal tüp bakımı, yatak değişimi, silme banyo) öncesi ve sonrası, hastaların hemodinamik parametreleri, ventilatör parametreleri ve ECMO değerleri her gün ve her bakım boyunca (toplam 14/168 Günlük bakım) kaydedilmiştir. Verilerin değerlendirilmesinde sayı, yüzde, ortalama, Shapiro-Wilk test ve Wilcoxon, Friedman test kullanılmıştır.
 Hastaların %91,7'si erkek ve yaş ortalaması 50,83±20,76 (yıl) idi. ECMO kalış süresi ortalaması 11,00±7,61 gün ve hemşirelik bakım süresi ortalaması 98,75±31,13 dakika olarak saptanmıştır. Günlük hemşirelik bakımları sırasında hastalarda advers olay olarak taşikardi (%83.3), desatürasyon (%41.7), takipne (%33.3), hipotansiyon (%25) ve EKG değişiklikleri kaydedilmiştir. Hastaların pansuman değişimleri, yatak takımı değişimi, silme yatak banyosu sırasında yaşam parametreleri, ventilatör parametreleri ve ECMO değerlerinde istatistiksel anlamlılık bulunmamıştır (p>0,05). Endotrakeal tüp bakımı sürecinde önce/ sonra sistolik kan basıncı değerleri açısından istatistiksel olarak anlamlı farklılık tespit edilmiştir (t=-2,402; p=0,035).
ECMO'lu hastaların hemşirelik bakımları sırasında bazı hemodinamik parametrelerinin etkilendiği ve bazı advers olayların görüldüğü saptanmıştır. Hemşireler bakımları sırasında hastaları yakından izlemeye devam etmeli ve advers olayların erken belirtilerini takip etmelidir. Ayrıca erken belirtilerini tespit etmek için hastayı bakım uygulamaları sırasında sürekli izlemelidir. Advers olay gelişme riskine karşı hekim ile işbirliği yapılması önerilmektedir**.**

Anahtar Kelimeler: ECMO, hemşirelik bakımı, hemodinamik izlem, advers olay

ABSTRACT
Hemodynamic parameters may change during daily nursing care in critically ill patients in intensive care. The study aims to evaluate the effect of daily nursing care on hemodynamic parameters in patients undergoing extracorporeal membrane oxygenation (ECMO) due to severe heart failure. The cross-sectional descriptive study was conducted between November 2022 and February 2023. The sample of the study consisted of 12 patients who underwent ECMO in the cardiovascular surgery intensive care and heart-lung transplantation intensive care units of a city hospital. Before and after the given nursing care (dressing change, endotracheal tube care, bed change, wiping bath), hemodynamic parameters, ventilator parameters and ECMO values of the patients were recorded every day and during each care (total 14/168 daily care). Evaluation of the data, numbers, percentages, mean and standard deviation values were given for categorical variables. The normality of the distribution was tested with the Shapiro-Wilk test. Paired Sample and Repeated Measures were used for comparisons between groups of normally distributed variables, and Wilcoxon and Friedman tests were used for group comparisons of non-normally distributed variables.
91.7% of the patients were male and the mean age was 50.83 ± 20.76 (years). The average stay in ECMO was 11.00 ± 7.61 days and the average nursing care duration was 98.75 ± 31.13 minutes. During daily nursing care, tachycardia (83.3%), desaturation (41.7%, tachypnea (33.3%), hypotension (25%) and ECG changes were recorded as adverse events. There was no statistical significance in the dressing changes, bedding change, life parameters during wiping bed bath, ventilator parameters and ECMO values of the patients (p>0.05). A statistically significant difference was found in terms of systolic blood pressure values before/after the endotracheal tube care process (t=-2,402; p=0.035).
It was determined that some hemodynamic parameters were affected and some adverse events were observed during the nursing care of patients with ECMO. Nurses should continue to monitor patients closely during their care and monitor for early signs of adverse events. In addition, the patient should be constantly monitored during care practices to detect early signs. Cooperating with the physician against the risk of developing adverse events is recommended.
Keywords: ECMO, nursing care, hemodynamic monitoring, adverse event

EFFECT OF PHYSICAL ACTIVITY ON HEALTH DURING COVID-19

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ABSTRACT

The purpose of this study was to know the impact of physical activity on health during Covid-19. The study was delimited to 100 households selected randomly within 1km radius from the residence of research scholar. i.e. 37-A, RanaJi Enclave Golden, Najafgarh, New Delhi-110043. Subject's age ranging from 18-60yrs, irrespective of Gender. For this purpose the investigator with the help of his guide and panel of experts had prepared the questionnaire, consisting 13 questions for yielding authentic information. A questionnaire comprising of various statements was developed on Physical Activity & its duration, Covid-19 Status & its treatment, Vaccinations and comorbidity. The information's obtained through the administration of the questionnaire on the subjects were compiled and analyzed by using percentage method to find out the results. After analysis, the findings showed significant effects of Physical Activity on Health during Covid-19.

EFFECTS OF MATERNAL OXYTOCIN, CORTISOL LEVELS AND MATERNAL DEPRESSION ON PRENATAL ATTACHMENT

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Abstract

Objective: We aimed to investigate the effects of oxytocin, cortisol and maternal anxiety and depression levels on prenatal attachment.

Material and method: We studied plasma oxytocin and cortisol levels in 145 pregnant women with first and singleton pregnancies and without chronic psychiatric disorders between the 28th and 36th week of gestation and administered Prenatal Mother Infant Attachment Scale, Prenatal Period Depression Scale, Trait and State Anxiety Scale to the pregnant women. The correlation between the variables was evaluated by Pearson Correlation Analysis. Variables predicting attachment score and depression score were analyzed by Linear Regression Analysis.

Results: In our study, those with a score of 13 and above according to the EDSDSS were accepted as the depression group and the group was divided into two. Maternal depression levels were correlated with maternal trait and state anxiety and negatively affected prenatal attachment. Oxytocin was found to have no direct effect on prenatal attachment and it was concluded that the relationship between these two was modulated by depression.

Conclusion: In our study, only cortisol values were found to predict prenatal attachment. Depression scores were found to be predicted by state and trait anxiety, maternal and paternal education levels and gestational week.

Keywords: Prenatal Attachment, Oxytocin, Cortisol, Depression

Introduction

Mother-infant attachment is a relationship between the child and the caregiver that begins in the first days of life, manifested by the child's search for closeness with the caregiver, which becomes evident especially in stress situations, has consistency and continuity, has a predominant emotional aspect and should be. Attachment is a feeling of closeness between the mother and the child and the child to the mother, a love relationship that develops as a result of interaction between the mother and the baby and shows continuity [1]. By keeping the physical closeness of infants with the person or persons caring for them strong, attachment both protects infants against dangers from the environment and provides them with the necessary conditions for exploring the environment. The tendency and need for emotional bonding refers to the attachment system that is developmentally functional and necessary for infants to survive. Attachment is not limited to childhood but lasts throughout life, changing in nature and expression over time. The mother-child relationship, which is the first basic relationship is an example for bindings [2]. Attachment was first defined by Bowlby as a warm, continuous, close relationship between mother and child and the satisfaction and pleasure of both parties [3, 4]. Attachment theory is the tendency of an individual to expect closeness from another person and to feel safe when this person is with him/her. According to attachment theory, the inability of the infant to develop a secure attachment relationship with one or more people in the early years reduces the ability to develop close relationships in later life and adulthood [5]. Galbo [6] stated that the most important people in a young person's life are his/her mother and father; LeCroy [7] stated that having a close relationship with mother and father plays a decisive role in the mental health of young people. Genetic, cultural, social, geographical, economic factors and some neurohormones are effective in the development and shaping of attachment. It is also affected by the psychosocial status of the mother such as depression, anxiety and stress. Caregiving behavior in living organisms is under the influence of some neurochemical substances [8]. The precursor of these substances is "vasotocin". Vasopressin and oxytocin, which are effective in behaviors such as motherhood, caregiving, child protection and sexuality in mammals, are derived from vasotocin with a single amino acid change [9]. Following birth, mother-baby contact triggers oxytocin release [10]. Intranasal oxytocin administration increases trusting behaviors [11]. Therefore, oxytocin initiates attachment and plays a special role by reducing stress, increasing trust, and integrating physiological and psychological states [12].

Our aim in this study was to show the effects of oxytocin, cortisol and maternal anxiety and depression levels on the attachment between mother and infant and to examine the relationship between the variables.

Materials and Methods

Participants and Procedure

This study was conducted among pregnant women with at least primary school graduation who applied to Necmettin Erbakan University, Meram Medical Faculty, Gynecology and Obstetrics outpatient clinic for monthly follow-up and who had a first and singleton pregnancy between 28-36 weeks. Pregnant women who had a history of psychiatric, metabolic or neurologic disease, who had a risky screening result, who had negative developments during pregnancy or who had an unwanted pregnancy were excluded from the study.

A signed consent form was obtained from the volunteer pregnant women and a blood sample was taken between 8:00 and 9:00 in the morning for the study of plasma oxytocin and cortisol levels. Afterwards, Maternal Fetal Attachment Scale, Prenatal Period Depression Scale, Trait and State Anxiety Scale were administered to the pregnant women.

Measures

Edinburgh Postnatal Depression Scale (EPDSS):

It is a 10-item, 4-item Likert-type scale used to determine the risk for depression in the postpartum period and to measure its level and severity change. In reliability studies, the Cronbach's alpha coefficient of the Turkish form was found to be 0.79. As a result of ROC analysis, the sensitivity and specificity of the Edinburgh Postpartum Depression Scale were found to be 0.84 and 0.88 at a cut-off score of 12/13 [13]. In this study, a cut-off score of 13 and above was used.

State-Trait Anxiety Inventory: It has two separate scales, each consisting of 20 items. The State Anxiety Scale (SAS) determines how the individual feels at a certain moment and under certain conditions, while the Trait Anxiety Scale (TAS) determines how the individual feels in general, regardless of the situation and conditions the individual is in. The total score value obtained from both scales varies between 20 and 80. A high score indicates a high level of anxiety and a low score indicates a low level of anxiety.

Maternal-Fetal Attachment Scale (PAI): Maternal-Fetal Attachment Scale: It was developed to measure affectionate attachment between mother and infant. The Cronbach Alpha value of the Turkish version was reported as 0.82. It is a 24-item, 4-point Likert-type scale with each item ranging from "definitely yes" to "definitely no"(14).

Hormonal Examination: A 10 ml blood sample was taken from the antecubital vein between 8:00 - 9:00 in the morning and collected into a biochemistry tube and a hemogram tube containing K3 EDTA solution. After centrifugation at 4000 rpm for 5 minutes in an Eppendorf centrifuge, the plasma was separated and the serum portions were stored at -80°C until the time of analysis.

ELISA method was used to determine plasma oxytocin levels in a Biotek device, while chemiluminescent method was used to determine plasma cortisol levels in a Beckman Coulter DXI 800 device. Normal plasma cortisol values were 95- 473 ngr/ml and no normal range was found for oxytocin.

Ethics

Approval was obtained from Necmettin Erbakan University, Faculty of Medicine, Interventional Ethics Committee with the decision numbered 2012/77 before the start of the study.

Financial support for oxytocin and cortisol hormone kits used in the study was provided within the scope of Necmettin Erbakan University Scientific Research Support Project No. 1315180106.

Statistical Analysis

The data obtained from the study were analyzed using SPSS 17.0 (Statistical Package for the Social Sciences) package program. Data were given as mean, standard deviation and percentage. The distribution of the data was analyzed by Kolmogorov Smirnov test. Continuous variables with normal distribution were analyzed by t-test and those without normal distribution were analyzed by Mann-Whitney U test. Chi-square test was used to analyze categorical variables. The correlation between variables was evaluated by Pearson Correlation Analysis.

Variables predicting attachment score and depression score were analyzed by Linear Regression Analysis. Significance was accepted as p<0.05.

Findings and Discussion

Findings

According to the EPDSS, those with a score of 13 and above were accepted as the depression group and the group was divided into two. The differences between the depression group and the normal group are shown in Table 1.

Table -1: Comparison of variables between depression group and non-depression group

	Depression Group (n =28)	Non-Depression Group (n =117)	P
Maternal Age (years) *	22.54±4.44	23.42±4.57	0.310
Mother's Education (years)*	8.93±2.52	9.40±2.84	0.434
Age of father (years)*	28.07±8.48	27.45±5.35	0.829
Father's Education (years)*	8.61±2.18	9.67±2.91	0.133
Duration of Marriage (years)*	1.4±1.33	1.74±2.50	0. 080
Gestational week (weeks)*	32.93±2.65	32.97±2.75	0.839
State Anxiety score**	43.32±7.30	34.50±8.42	0.000
Trait Anxiety score**	49.57±7.72	41.01±6.36	0.000
Attachment Score**	87.61±12.047	91.93±11.83	0.086
Oxytocin (u/l)*	108.897±101.302	237.44±588.26	0.888
Cortisol (ngr/ml)*	22.25±10.14	21.59±8.75	0.611

*: t test was used. t score is given.

**: Mann-Whitney U test was used. z score is given.

As a result of the correlation analysis, it was observed that the level of attachment and oxytocin decreased as the depression score increased, while state and trait anxiety increased. While there was a negative correlation between state anxiety and oxytocin levels, there was no correlation between trait anxiety and oxytocin levels. Oxytocin and cortisol levels were positively affected by each other. While there was a positive correlation between cortisol levels and prolactin levels, there was no correlation between oxytocin and prolactin levels. Correlation analysis is shown in table 2.

Table- 2: Correlation analysis between hormonal values and depression, anxiety and attachment scores

	Depression	Attachment	Trait Anxiety	State Anxiety	Oxytocin	Cortisol
Depression		-.197 .018	.583 .000	.537 .000	-.164 .049	-.046 .583
Attachment	-.197 .018		-.099 .235	-.160 .055	.099 .238	-.158 .058
Trait Anxiety	.583 .000	-.099 .235		.533 .000	-.099 .236	-.021 .806
State Anxiety	.537 .000	-.160 .055	.533 .000		-.196 .018	-.041 .628
Oxytocin	-.164 .049	.099 .238	-.099 .236	-.196 .018		.185 .026
Cortisol	-.046 .583	-.158 .058	-.021 .806	-.041 .628	.185 .026	

In the categorical regression analysis, only cortisol values were found to predict attachment. Depression scores were found to be predicted by state and trait anxiety, maternal and paternal education levels and gestational week. Regression analysis results are given in Table 3 and Table 4.

Table-3: Regression analysis for pregnancy depression

	Beta	Df	F	p
Oxytocin	-,087	2	1,612	,204
Cortisol	-,075	1	1,214	,273
State Anxiety	,216	1	7,232	,008
Trait Anxiety	,454	1	33,101	,000
Maternal Age	-, 125	2	2, 146	, 121
Mother Education	,200	2	4,678	,011
Father Education	-,252	4	7,228	,000
Father Age	,137	2	2,532	,084
Gestational week	,143	2	4,552	,012

Table- 4: Regression analysis for attachment

	Beta	Df	F	p
Maternal Age	,184	1	3,422	,067
Father Age	-,146	2	2,147	,121
Gestational week	,121	1	2,078	,152
Depression	-,166	2	2,929	,057
State Anxiety	-,051	1	,247	,620
Trait Anxiety	,001	1	,000	,991
Oxytocin	,085	3	,915	,436
Cortisol	-,263	2	9,521	,000

Discussion

Gestational depression is a mental disorder that affects the health of both the mother and the child. Although many studies have been conducted on postpartum depression, research on gestational depression is limited [15, 16]. Marcus et al. applied the Center for Epidemiologic Studies Depression Scale (CES-D) to 3472 pregnant women and showed that 20% of pregnant women scored above the CES-D cut-off value [17]. Chen et al. also investigated the prevalence of depressive symptoms in pregnancy according to the CES-D and found that it was 8% in the 1st trimester, 10% in the 2nd trimester and 2% in the 3rd trimester [18]. In our country, in the study conducted by Gölbaşı et al. [19] according to Edinburg Postpartum Depression Scale (EDSDS), the prevalence of depressive symptoms during pregnancy was found to be 28.6%. In our study consisting of 145 pregnant women, the rate of pregnant women who scored 13 or more points according to the EDSDS was 19.3%. It has been reported that depression, psychiatric illness or chronic illness, some environmental and physiologic factors, drug use, lack of social support, marital problems, low socioeconomic support, domestic violence, some hormonal factors, malnutrition, and poor obstetric history are associated with gestational depression [20-22]. In our study, it was observed that state and trait anxiety, educational level of the pregnant woman and her partner, and gestational week affected gestational depression. Similar to other studies [21,23], it was found that pregnant women with higher educational level showed less depression symptoms. It is thought that increasing the level of education positively affects the individual's coping skills with stress and protects them from depressive symptoms. It was also found that the spouses of the non-depressed group had significantly higher levels of education. This may be thought to be related to the increase in the level of social support provided by the spouses with increasing education level.

In our study, there was a strong positive relationship between pregnancy depression and trait and state anxiety, similar to other studies [24-26]. It is known that anxiety is a risk factor for

depression and individuals with high anxiety levels are more susceptible to developing depression. It is also known that the emergence of anxiety disorders is a precursor to depression.

Oxytocin is an important hormone that plays a role in the formation of maternal behaviors and mother-infant attachment [27]. Oxytocin has been reported to maintain emotional satisfaction during social interaction and prevent the decline of maternal behavior over time by preventing tolerance to endogenous opioids. Increased oxytocin level during pregnancy is thought to facilitate postpartum maternal behaviors and attachment formation by reducing anxiety and improving outward stress responses [28]. Levine et al. examined oxytocin levels in 62 healthy pregnant women in the 1st trimester, 3rd trimester and 1st month postpartum and found 5 different oxytocin courses: stable, increasing, decreasing, increasing and decreasing, and decreasing and increasing. They found that maternal-fetal attachment scale results were higher in the course in which oxytocin levels increased from early pregnancy to late pregnancy. However, they did not find a significant relationship between attachment and pregnancy oxytocin levels [29].

Feldman et al [30] studied the same group and the same measurements as Levine but additionally looked at early postpartum maternal behaviors. They observed a significant relationship between early postpartum oxytocin levels and maternal behaviors. They found that high cortisol levels in the early postpartum period were inversely associated with quality maternal behavior. In hierarchical multiple regression analyses, they found that high oxytocin and low cortisol levels predicted the quality of maternal behavior in the first postpartum month.

In our study, no significant relationship was found between oxytocin and maternal-fetal attachment as found by Levine. However, it was observed that the relationship between these two was regulated by depression. Decreased oxytocin levels were associated with higher levels of maternal depression, which in turn negatively affected maternal-fetal attachment. Regression analysis showed that cortisol levels affected maternal-fetal attachment similar to the study by Feldman.

Oxytocin has a bidirectional function in its relationship with stress and anxiety. In addition to its anxiolytic effect, oxytocin is also released in response to stress [31]. Although human studies are relatively limited, oxytocin has been reported to have a stress-reducing effect in humans, similar to animal studies [32-34]. Both pharmacological and non-pharmacological stimulation of endogenous oxytocin release has been accepted as a way to reduce stress [33]. Scantamburlo et al [35] also found a significant negative correlation between anxiety and oxytocin levels in 25 depressed patients in whom they examined oxytocin levels and applied DSKE. Tops et al [36] reported a negative relationship between oxytocin and state anxiety and that this relationship was regulated by attachment. In our study, it was observed that increased oxytocin levels led to a decrease in state anxiety of pregnant women. Oxytocin shows an inhibitory effect on the stress-sensitive neurohormonal system by inhibiting the stress-induced Pituitary-Pituitary-Adrenal (HPA) axis response [37]. Oxytocin is also thought to play a role in HPA axis dysregulation in people with major depression. Animal studies have found that oxytocin reduces glucocorticoid release and anxiety [38-39]. Skrundz et al. [40] examined the relationship between postpartum depression and oxytocin in 74 pregnant women and reported that decreased oxytocin levels in the 3rd trimester are a potential risk factor for the development of postpartum depression. In our study, a negative relationship was observed between depression and oxytocin.

Conclusion and Recommendations

In conclusion, although there are studies examining maternal-fetal attachment, oxytocin, depression, cortisol and stress variables in different combinations, our study is the first study to

examine the relationship between maternal-fetal attachment, oxytocin, cortisol, anxiety and depression variables in a large sample at the same time. Considering the effect of prenatal depression and anxiety on attachment, anxiety and depression levels of each pregnant woman should be questioned. Pregnant women with depressive symptoms should be referred to mental health centers because of their effects on quality of life and mother-infant relationship both during pregnancy and post-pregnancy.

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ENDOSCOPY OF THE MIDDLE CRANIAL FOSSA ON CRANIOLOGICAL MATERIAL

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ABSTRACT

Background. A scrupulous study of the bone base of the middle cranial fossa allows neurosurgeons not only to avoid mistakes during interventions but also to take into account all possible anatomical variants of the structures located in the area of intervention.

Purpose. The study aimed to investigate such anatomical variants of the middle cranial fossa as caroticoclinod foramina and interclinoid bridges by endoscopic means.

Methodology. The study material was 100 skulls of adults of both sexes. In the study, along with the endoscopic method, the cranioscopic method and the method of computed tomography were also used. The caroticoclinod foramina were classified according to Keyes (1935).

Results. The study showed that the left side's caroticoclinod foramina were absent in 70 cases (70%). The incomplete foramina were found on 10 skulls on the left (10%); on 2 skulls (2%), a contact-type foramina was found on the indicated side. The complete type of the caroticoclinoid foramen was present in 18 (18%) skulls on the left side. On the right side, the caroticoclinod foramina were not found in 61 cases (61%). The incomplete foramina on the right side were

found on 24 skulls (24%), which is 2.4 times more than the frequency of the same type of foramina on the left side. A contact-type foramen was missing on the right side. The complete type of the caroticoclinoid foramen was found on 15 skulls (15%) on the right. The left interclinoid bridge was absent on 92 skulls on the left (92%) and on 91 skulls on the right (91%). Accordingly, the left interclinoid bridge was found in 8% of cases and the right interclinoid bridge in 9%.

Conclusion. The endoscopy method, along with other methods, is important from a clinical point of view.

Key words: endoscopy, cranial base, caroticoclinoid foramen.

ENUMERATION OF MICROORGANISMS FROM TEXTILE WASTEWATER

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ABSTRACT
Textile wastewater is the byproduct of several processes used to make textiles, including dyeing, printing, finishing, and washing. When textiles are created, the wastewater is exposed to a complicated mixture of chemicals, dyes, solvents, detergents, and suspended particles. Wastewater from the textile industry contains a large amount of both organic and inorganic pollutants. Heavy metals, surfactants, salts, organic dyes in high concentrations, and other compounds associated to textile production are regularly found. These toxins pose substantial dangers to the environment and public health when discharged or handled improperly. Textile wastewater is created during processes like dying fabric to achieve desired colors, applying finishes to enhance properties like water resistance or flame resistance, and washing fabric to get rid of impurities and residues. Each of these processes generates wastewater as a consequence and utilizes a large quantity of water, chemicals, and energy. Textile effluent must be properly treated because to its complicated composition and possible drawbacks before being discharged into water bodies or recycled. These toxins pose substantial threats to the environment and public health if they are discharged into the environment or if they are improperly controlled. Textile effluent is a significant source of pollution due to the high concentration of organic and inorganic components, including various microorganisms. In order to develop effective wastewater treatment strategies and assess the potential environmental effects of textile wastewater. This study used in-depth research to identify, count, and describe the microorganisms found in textile wastewater.

Keywords: Textile, Wastewater, BOD, COD, Microorganisms, Degradation, dying, toxins.

EVALUATING HERBAL PLANTS' ANTIOXIDANT AND ANTI-INFLAMMATORY PROPERTIES FOR POTENTIAL USE IN SKINCARE AND COSMETICS

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ABSTRACT

The demand for natural and sustainable ingredients in skincare and cosmetics has been steadily increasing in recent years. Herbal plants, known for their rich phytochemical composition, have gained attention as potential sources of bioactive compounds with antioxidant and anti-inflammatory properties. This abstract aims to summarize the research on evaluating herbal plants' antioxidant and anti-inflammatory properties for potential use in skincare and cosmetics. Numerous studies have focused on identifying and characterizing the bioactive compounds present in herbal plants that exhibit antioxidant and anti-inflammatory activities. These compounds, such as phenolic compounds, flavonoids, terpenoids, and alkaloids, have shown promising effects in scavenging free radicals, inhibiting oxidative stress, and modulating inflammatory responses. The antioxidant activity of herbal plants plays a crucial role in protecting the skin from oxidative damage caused by environmental stressors, such as UV radiation and pollution. Oxidative stress leads to the production of reactive oxygen species (ROS), which can damage cellular components and accelerate skin aging. Herbal plants' antioxidant compounds help neutralize ROS, thereby reducing oxidative damage and preserving skin health and youthfulness. Furthermore, the anti-inflammatory properties of herbal plants make them potential candidates for addressing various skin conditions, including acne, eczema, and dermatitis. Inflammation is a common underlying factor in many skin disorders, and herbal plants' anti-inflammatory compounds can help alleviate symptoms by modulating inflammatory pathways, inhibiting pro-inflammatory mediators, and promoting skin healing. The use of herbal plant extracts, essential oils, or their active compounds in skincare and cosmetic formulations has shown promising results. Incorporating these natural ingredients into products like creams, lotions, serums, and masks can provide multiple benefits, including antioxidant protection, anti-aging effects, and soothing properties for sensitive or inflamed skin. However, it is essential to conduct further research to fully understand the mechanisms of action, stability, safety, and efficacy of herbal plant-based ingredients in skincare and cosmetics. Standardized extraction methods, quality control measures, and clinical studies are necessary to ensure the consistent and reliable performance of herbal plant-derived formulations. In conclusion, evaluating herbal plants' antioxidant and anti-inflammatory properties for skincare and cosmetics holds significant potential. The utilization of these natural ingredients can offer consumers safer and more sustainable alternatives while promoting healthier and more vibrant skin. Continued research and development in this field will contribute to the advancement of herbal-based skincare and cosmetic products, meeting the growing demand for natural and effective solutions in the beauty industry.

Keywords: Herbal Plants, Antioxidant,anti-inflammatory,cosmetics,UV radiation

EVALUATION OF CLOVE BUD OIL'S INFLUENCE ON VIRULENCE FACTORS AND HOST RESPONSE IN PSEUDOMONAS AERUGINOSA INFECTION

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ABSTRACT

Pseudomonas aeruginosa is a notorious pathogen known for causing a wide range of infections, particularly in immunocompromised individuals. The increasing prevalence of antibiotic resistance in P. aeruginosa strains necessitates the exploration of alternative therapeutic strategies. This study aimed to evaluate the influence of clove bud oil on virulence factors and host response in P. aeruginosa infection. Clove bud oil, derived from the aromatic plant Syzygium aromaticum, has demonstrated antimicrobial properties against various pathogens. However, its potential impact on P. aeruginosa virulence and host immune response remains largely unexplored. In this research, P. aeruginosa strains were exposed to different concentrations of clove bud oil, and the expression of key virulence factors was assessed. The production of pyocyanin, elastase, and biofilm formation, which contribute to the pathogenicity of P. aeruginosa, were quantified. Additionally, the effect of clove bud oil on host immune response was evaluated using an in vitro model, measuring cytokine release and phagocytic activity of immune cells in the presence of P. aeruginosa. The results revealed that clove bud oil significantly inhibited the production of pyocyanin and elastase by P. aeruginosa, suggesting its potential to attenuate the pathogen's virulence. Moreover, clove bud oil exhibited significant inhibitory effects on P. aeruginosa biofilm formation, an important factor contributing to chronic infections. The evaluation of host response demonstrated that clove bud oil enhanced the phagocytic activity of immune cells against P. aeruginosa and modulated the release of pro-inflammatory cytokines, including interleukin-6 (IL-6) and tumor necrosis factor-alpha (TNF-α).In conclusion, this study highlights the potential of clove bud oil as an alternative therapeutic agent against P. aeruginosa infections. It effectively inhibits the production of virulence factors and modulates the host immune response, indicating its ability to attenuate P. aeruginosa pathogenicity and enhance the host's defense mechanisms. These findings contribute to understanding clove bud oil's potential in combating P. aeruginosa infections and pave the way for further research and development of novel antimicrobial strategies.

Keywords: Clove bud oil, Pseudomonas aeruginosa, virulence factors, host response, antimicrobial, pyocyanin, elastase, biofilm formation, immune response, cytokines, phagocytosis, alternative therapeutics, antimicrobial resistance.

EVALUATION OF EARLY TERM OUTCOMES OF VERY LOW BIRTH WEIGHT PRETERM INFANTS

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Abstract

It was aimed to evaluate the effects of prenatal, natal and postnatal characteristics on early neonatal outcomes and mortality in very low birth weight preterm infants (VLBW) hospitalized in Adana City Training and Research Hospital Neonatal Unit. 121 VLBW infants hospitalized in Adana City Training and Research Hospital Neonatal Unit between 2021-2022 were retrospectively analyzed. VLBW infants, 69 were boys and 52 were girls. Of the infants included in our study, 91 had RDS, 32 had moderate-severe BPD, 38 had PDA, 23 had culture (+) nosocomial sepsis, advanced stage NEC in 15, stage 3-4 IVK in 25, and ROP in 9 (stage 3-4) was detected. Mortality was observed in 23 (19%) of the patients. In binary logistic regression analysis, mortality and birth weight, gestational age, first-minute APGAR score, fifth minute APGAR score, resuscitation at birth, intubation at birth, presence of PDA, time to first erythrocyte transfusion, time to invasive mechanical ventilation, and postnatal fluid on the 1st, 3rd, 5th and 7th days uptake respectively were found to be associated.In our study, it was observed that mortality increased as the gestational age and birth weight decreased in VLBW infants. Invasive interventions in the delivery room, APGAR score, high fluid intake in the postnatal period, and duration of invasive mechanical ventilation were associated with mortality in VLBW infants.

Keywords: Very low birth weight infants, mortality, morbidity, preterm infants

1. Introduction

Births in 20-37 Gestational weeks are called premature birth (premature birth) according to the World Health Organization (DSÖ); Newborn infants with birth weight <1000 grams are extremely low birth weight (ADDA); Newborns, which are between 1000-1499 grams, are very low birth weighted (VLBW); Newborn infants with 2500 grams are defined as low birth weight (DDA) (1). Preterm infants Birth weight compared to pregnancy week; infants with >90 Persantile LGA (Large For Gestational Age), infants in the 10-90 Persantile range Aga (Apppropriate for Gestational Age), <10 Persantile infants are called SGA (Small For Gestational Age) (2). Preterm infants according to birth weights; Birth weight <2500 g with DDA, <1500 g of those on VLBW, <1000 g are defined as the name DDA (3). Preterm delivery can be effective in pregnancy age, infections, plural pregnancies, the underlying chronic medical conditions of the mother, lifestyle, nutritional condition, genetic factors, the psychological condition of the mother or work -related situations. (4). Preterm infants during the newborn intensive care housing sepsis, necrotizing enterolite (NEK), germinal matrix bleeding-Intraventricular bleeding (GMK-IVK), Respiratory Distress Syndrome (RDS), bronchopulmonary dysplasia (BPD), premature retinopathy (ROP) risks it encounters more frequently (5). Premature birth is the important reason for infant deaths in developed societies. Every year, 440,000 premature infants are born in the United States (USA). Many of these infants are below 2500 grams and have high mortality and morbidity compared to termin infants. 75 %of infant deaths seen in the first month are preterm infants (6). Mortality rates are 20 %in Greece; It was reported as 14 %in infants born in the United States and 32 %in the group born in the Netherlands and 11 %in the group born in the Netherlands and 11 %in 29-31 weeks (7-9). In the proportions of medium-low-income countries, the mortality rate of Preterm infants on VLBW is 78 %in Bangladesh; 29 %in Iraq; 27 %in Thailand (10-12). Mortality rates in infants on VLBW are seen between 10 % and 60 % (13). In the USA, 1.4 %of births constitutes infants on VLBW and 53.9 %of all infant deaths (14). Premature infants may face many risks and morbidity in perinatal, natal and postnatal periods due to their immature. Early and late morbidity rates as a result of increased survival of preterm infants due to advances in the field of technology and medicine, especially RDS, BPD, GMK-IVK, Periantricular Leukomalacia (PVL), NEK, Sepsis and ROP are also increasing frequency. (15).

2. Materials and Methods

This is a retrospective observational study including very low birth weight (VLBW) preterm infant patients who were hospitalized in the Neonatal Intensive Care Unit of our hospital between January 1, 2021 and January 1, 2022 (for a period of 1 year). 121 VLBW preterm infants were included in the study. Gender of the patients, birth weight, gestational week, maternal age at birth, 1st and 5th minute Apgar score, celestone application status, magnesium application status, SNAPPE 2 score, postnatal 15th day ,30th day, 45th day weight gain, surfactant administration time, dose, convulsion status, intubation status/duration, invasive and non-invasive mechanical ventilation time, oxygen exposure time, TPN taking time, time to first erythrocyte suspension, ventilator-associated pneumonia, renal failure, In addition to clinical information such as postnatal hypotension, thrombocytopenia, hypernatremia, hyponatremia, hyperglycemia, hypoglycemia, cholestasis, hypercapnia, hypocapnia, length of hospital stay, Respiratory Distress Syndrome (RDS), Retinopathy of Prematurity (ROP), Necrotizing Enterocolitis (NEC),

Bronchopulmonary Dysplasia Complications such as (BPD), Patent Ductus Arteriosus (PDA), Intracranial Hemorrhage (ICH), anemia, sepsis and hyperbilirubinemia were recorded by accessing patient archive files. Patients born in our hospital and referred to other centers for various reasons, patients born in another center and transported to our hospital after the 7th day, infants with congenital anomalies incompatible with life, and preterm infants born over 1500 g were excluded from the study. Conformity of continuous variables to normal distribution was evaluated by Kolmogorov Smirnov test, histogram graph and examination of kurtosis and skewness values. Normally distributed continuous variables were given as mean and standard deviation, non-normally distributed continuous data were given as median (minimum-maximum), and categorical variables were given as numbers and percentages. Pearson Chi-Square and Fisher's Exact tests were used to compare categorical data. In the analysis of continuous data, according to their distribution; Independent Sample T test, Mann-Whitney U test and Kruskal-Wallis tests were used. In cases where there was a statistically significant difference in the Kruskal-Wallis test, the Mann Whitney U test with Bonferroni correction was used to find the group that made the difference. Binary Logistic Regression analysis was performed to identify factors that may be related to mortality.

3. Findings and Discussion

VLBW premature infants included in the study, 69 (57.0%) were boys and 52 (43.0%) were girls.16 (13.2%) VLBW preterm infants were 500-750 g, 34 (28.1%) 751-1000 g, 38 (31.4%) 1001-1250 g, 33 (27.3%) was in the range of 1251-1500 g. The mean birth weight of VLBW preterm infants was 1073.7±257.1 grams, and the mean gestational age was 27.76±2.31 weeks. Resuscitation was performed at birth in 67 (55.4%) of VLBW preterm infants. Resuscitation at birth was performed in 15 (93.8%) of infants with a birth weight of 500-750 grams, in 25 (73.5%) of infants with a birth weight of 751-1000 grams, and in 16 (42.1%) of infants with a birth weight of 1001-1250 grams. It was observed in 11 (33.3%) of infants weighing 1251-1500 grams. The resuscitation rate of infants with a birth weight of 500-750 grams and 751-1000 grams was found to be higher than infants in the 1001-1250 gram and 1251-1500 gram groups. Invasive mechanical ventilation exposure time was found to be higher in infants with 500-750 grams compared to other groups. Median value of invasive mechanical ventilation exposure time; 35 (2-143) days in infants weighing 500-750 grams, 19.6 (0-57) days in infants weighing 751-1000 grams, 7.4 (0-62) days in infants weighing 1001-1250 grams, 1251-1500 grams It was 2.6 (0-10) days in infants. Patent ductus arteriosus was observed in 9 (56.3%) infants weighing 500-750 g, in 20 (58.8%) infants weighing 751-1000 g, in 7 (18.4%) infants weighing 1001-1250 g. and in 2 (6.1%) infants weighing 1251-1500 grams. Patent ductus arteriosus was found to be higher in infants weighing 500-750 and 751-1000 grams compared to infants weighing 1001-1250 and 1251-1500 grams. In 9 (90%) infants with bronchopulmonary dysplasia 500-750 g, 25 (86.2%) infants 751-1000 g, 25 (67.6%) infants 1001-1250 g and It was seen in 8 (25.8%) of infants weighing 1251-1500 gr. BPD was milder in 18 (48.6%) infants weighing 1001-1250 grams, while it was more severe in infants weighing 500-750 grams. BPD was found to be higher in 7 (70%) infants whose postnatal steroid intake was 500-750 grams. In 7 (46.7%) infants with retinopathy of prematurity 500-750 g, in 18 (66.7%) infants 751-1000 g, in 8 (21.6%) infants 1001-1250 g and It was seen in 7 (23.3%) of infants weighing 1251-1500 gr. It was found to be higher in infants with 751-1000 grams of retinopathy of

prematurity than in the 1001-1250 and 1251-1500 groups. When the stages of ROP are evaluated; In infants weighing 500-750 grams, stage 1-2 was lower in ROP 2 (12.5%), while it was more common in stage ≥3 or APROP 5 (31.2%). When mortality is evaluated; 10 (62.5%) infants weighing 500-750 grams, 9 (26.5%) infants weighing 751-1000 grams, 2 (5.3%) infants weighing 1001-1250 grams, 1251-1000 grams 2 (6.1%) of infants weighing 1500 grams died.

Table 1. Comparison of demographic, natal and clinical characteristics of preterm infants and mothers by birth weight

Variables	500-750 g (n=16)	751-1000 g (n=34)	Subtotal ≤1000g (n=50)	1001-1250 g (n=38)	1251-1500 g (n=33)	Total ≤1500g (n=121)
Antenatal steroid (completed dose), n (%)	6 (37,5)	15 (44,1)	21 (42,0)	12 (31,6)	14 (42,4)	47 (38,8)
MgSO$_4$, n (%)	6 (37,5)	11 (32,4)	17 (34,0)	11 (28,9)	10 (30,3)	38 (31,4)
Preeclampsia, n (%)	6 (37,5)	5 (14,7)	11 (22,0)	6 (15,8)	11 (33,3)	28 (23,1)
Diabetes, n (%)	0 (0,0)	0 (0,0)	0 (0,0)	3 (7,9)	0 (0,0)	3 (2,5)
Chorioamnionitis, n (%)	1 (6,3)	0 (0,0)	1 (2,0)	2 (5,3)	1 (3,0)	4 (3,3)
Oligohydramnios, n (%)	2 (12,5)	5 (14,7)	7 (14,0)	6 (15,8)	5 (15,2)	18 (14,9)
UMR, n (%)	1 (6,3)	6 (17,6)	7 (14,0)	4 (10,5)	4 (12,1)	15 (12,4)
Umbilical artery Doppler disorder, n (%)	1 (6,3)	2 (5,9)	3 (6,0)	2 (5,3)	4 (12,1)	9 (7,4)
Acute fetal distress, n (%)	8 (50,0)	7 (20,6)	15 (30,0)	10 (26,3)	11 (33,3)	36 (29,8)
Multiple pregnancy, n (%)	1 (6,3)	7 (20,6)	8 (16,0)	12 (31,6)	7 (21,2)	27 (22,3)
Multigravida, n (%)	11 (68,8)	28 (82,4)	39 (78,0)	26 (68,4)	24 (72,7)	89 (73,6)
CS birth, n (%)	13 (81,3)	26 (76,5)	39 (78,0)	33 (86,8)	28 (84,8)	100 (82,6)
Gestational age, (weeks)	24,56±1,50	26,5±1,63	25,92±1,83	28,34±1,47	29,88±1,45	27,76±2,31
Birth weight, (grams)	666,8±70,1	894,1±71,8	821,4±128,2	1123,9±70,2	1398,3±77,5	1073,7±257,1
Female gender, n (%)	6 (37,5)	13 (38,2)	19 (38,0)	17 (44,7)	16 (48,5)	52 (43,0)
SGA, n (%)	1 (6,3)	1 (2,9)	2 (4,0)	0 (0,0)	2 (6,1)	4 (3,3)
Resuscitation at birth, n (%)	15 (93,8)	25 (73,5)	40 (80,0)	16 (42,1)	11 (33,3)	67 (55,4)
RDS, n (%)	16 (100,0)	26 (76,4)	42 (84,0)	27 (71,0)	22 (66,7)	91 (75,2)
Total invasive mech vent time, (days)	35 (2-143)	19,6 (0-57)	24,6 (0-143)	7,4 (0-62)	2,6 (0-10)	13,1 (0-143)
Total NIV time, (days)	18 (0-89)	24,8 (0-156)	22,8 (0-156)	23,7 (0-232)	8,5 (1-38)	19,1 (0-232)

Total O2 time, (days)	55,6 (2-90)	51,3 (4-164)	52,7 (2-190)	38,1 (0-148)	15,5 (1-55)	38 (0-190)
PDA, n (%)	9 (56,3)	20 (58,8)	29 (58,0)	7 (18,4)	2 (6,1)	38 (31,4)
IVH, n (%)	12 (75,0)	15 (44,1)	27 (54,0)	9 (23,7)	5 (15,2)	41 (33,9)
Grade 1-2, n (%)	7 (43,8)	2 (5,9)	9 (18,0)	4 (10,5)	3 (9,1)	16 (13,2)
Grade 3-4, n (%)	5 (31,3)	13 (38,2)	18 (36,0)	5 (13,2)	2 (6,1)	25 (20,7)
Early neonatal sepsis, n (%)	9 (56,3)	13 (38,2)	22 (44,0)	8 (21,0)	3 (9,4)	33 (27,5)
Nosocomial sepsis, n (%)	8 (50,0)	21 (63,6)	29 (59,2)	16 (43,2)	8 (24,2)	53 (44,5)
Culture (+) sepsis, n (%)	4 (26,7)	9 (26,5)	13 (26,5)	4 (10,8)	6 (18,2)	23 (19,3)
Ventilator-associated pneumonia, n (%)	5 (31,3)	5 (14,7)	10 (20,0)	3 (7,9)	0 (0,0)	13 (10,7)
Renal failure, n (%)	3 (18,8)	6 (17,6)	9 (18,0)	1 (2,6)	0 (0,0)	10 (8,3)
NEC stage ≥2, n (%)	2 (12,5)	6 (17,6)	8 (16,0)	4 (10,5)	3 (9,1)	15 (12,4)
ROP, n (%)	7 (43,7)	18 (52,9)	25 (50,0)	8 (21,0)	7 (23,3)	40 (33,0)
Stage 1-2, n (%)	2 (12,5)	16 (47,1)	18 (36,0)	6 (15,7)	7 (100,0)	31 (25,6)
Stage ≥3 or APROP, n (%)	5 (31,2)	2 (5,8)	7 (14,0)	2 (5,3)	0 (0,0)	9 (7,4)
BPD, n (%)	9 (90,0)	25 (86,2)	34 (87,2)	25 (67,6)	8 (25,8)	67 (62,6)
Mild, n (%)	1 (10,0)	10 (34,5)	11 (28,2)	18 (48,6)	6 (19,4)	35 (32,7)
Medium-Heavy, n (%)	8 (50,0)	15 (44,1)	23 (46,0)	7 (18,4)	2 (6,1)	32 (26,4)
BPD postnatal steroid, n (%)	7 (70,0)	14 (50,0)	21 (55,3)	11 (35,5)	6 (21,4)	38 (39,2)
Total length of stay, (days)	59,7 (2-190)	64,5 (4-202)	63 (2-202)	56 (2-238)	35,4 (5-64)	53,3 (2-238)
Mortality, n (%)	10 (62,5)	9 (26,5)	19 (38,0)	2 (5,3)	2 (6,1)	23 (19,0)

n:Number, SD:Standard Deviation, MgSO4: Magnesium Sulphate, UMR: Prolonged Membrane Rupture, CS:Cesarean Section, SGA: Small for Gestational Age, NIV:Noninvasive Mechanical Ventilation, PDA:Patent Ductus Arteriosus, IVH: Intraventricular Hemorrhage, VIP :Ventilator Associated Pneumonia, NEC:Necrotizing Enterocolitis, ROP:Retinopathy of Prematurity, BPD: Bronchopulmonary Dysplasia, *Pearson Chi-Square Test or Fisher's Exact Test, **Independent Sample t Test (mean±SD given), *** Kruskal Wallis H Test (median and minimum-maximum given)

Variables	23-25 Weeks (n=24)	26-28 Weeks (n=53)	Subtotal ≤28 Weeks (n=77)	29-31 Weeks (n=37)	31-33 Weeks (n=7)	Total ≤33 Weeks (n=121)
Antenatal steroid (completed dose), n (%)	9 (37,5)	19 (35,8)	28 (36,4)	16 (43,2)	3 (42,9)	47 (38,8)
MgSO$_4$, n (%)	6 (25,0)	19 (35,8)	25 (32,5)	12 (32,4)	1 (14,3)	38 (31,4)
Preeclampsia, n (%)	5 (20,8)	10 (18,9)	15 (19,5)	11 (29,7)	2 (28,6)	28 (23,1)
Diabetes, n (%)	0 (0,0)	3 (5,7)	3 (3,9)	0 (0,0)	0 (0,0)	3 (2,5)
Chorioamnionitis, n (%)	1 (4,2)	2 (3,8)	3 (3,9)	1 (2,7)	0 (0,0)	4 (3,3)
Oligohydramnios, n (%)	3 (12,5)	10 (18,9)	13 (16,9)	4 (10,8)	1 (14,3)	18 (14,9)
UMR, n (%)	2 (8,3)	10 (18,9)	12 (15,6)	2 (5,4)	1 (14,3)	15 (12,4)
Umbilical artery Doppler disorder, n (%)	2 (8,3)	2 (3,8)	4 (5,2)	5 (13,5)	0 (0,0)	9 (7,4)
Acute fetal distress, n (%)	10 (41,7)	10 (18,9)	20 (26,0)	14 (37,8)	2 (28,6)	36 (29,8)
Multiple pregnancy, n (%)	2 (8,3)	12 (22,6)	14 (18,2)	10 (27,0)	3 (42,9)	27 (22,3)
Multigravida, n (%)	19 (79,2)	39 (73,6)	58 (75,3)	26 (70,3)	5 (71,4)	89 (73,6)
CS birth, n (%)	20 (83,3)	41 (77,4)	61 (79,2)	33 (89,2)	6 (85,7)	100 (82,6)
Gestational age, (weeks)	24,33±0,70	27,36±0,78	26,42±1,60	29,68±0,74	32,43±0,53	27,76±2,31
Birth weight, (grams)	755,8±130,2	1039,6±181,8	951,1±212,7	1274,1±179,5	1362,8±134,3	1073,7±257,1
Female gender, n (%)	8 (33,3)	24 (45,3)	32 (41,6)	18 (48,6)	2 (28,6)	52 (43,0)
SGA, n (%)	0 (0,0)	3 (5,7)	3 (3,9)	1 (2,7)	0 (0,0)	4 (3,3)
Resuscitation at birth, n (%)	21 (87,5)	29 (54,7)	50 (64,9)	16 (53,8)	1 (14,3)	67 (55,4)
RDS, n (%)	22 (91,7)	41 (77,4)	63 (81,8)	27 (73,0)	1 (14,3)	91 (75,2)
Invasive mek vent duration, (days)	31,6 (0-143)	13,3 (0-62)	18,9 (0-143)	3,7 (0-33)	0,4 (0-1)	13,1 (0-143)
Total NIV time, (days)	27,2 (0-156)	24 (0-232)	24,9 (0-232)	10,5 (1-38)	2,7 (1-6)	19,1 (0-232)
Total O2 time, (days)	61,6 (2-190)	44,7 (0-148)	50 (0-190)	1,95 (1-55)	3,7 (1-8)	38 (0-190)
PDA, n (%)	17 (70,8)	18 (34,0)	35 (45,5)	3 (8,1)	0 (0,0)	38 (31,4)
IVH, n (%)	16 (66,7)	18 (34,0)	34 (44,2)	6 (16,2)	1 (14,3)	41 (33,9)
Grade 1-2, n (%)	6 (25,0)	5 (9,4)	11 (14,3)	4 (10,8)	1 (14,3)	16 (13,2)
Grade 3-4, n (%)	10 (41,7)	13 (24,5)	23 (29,9)	2 (5,4)	0 (0,0)	25 (20,7)
Early neonatal sepsis, n (%)	14 (58,3)	16 (30,2)	30 (39,0)	3 (8,3)	0 (0,0)	33 (27,5)
Nosocomial sepsis, n (%)	12 (52,2)	26 (50,0)	38 (50,7)	15 (40,5)	0 (0,0)	53 (44,5)
Culture (+) sepsis, n (%)	6 (26,1)	9 (17,3)	15 (20,0)	7 (18,9)	1 (14,3)	23 (19,3)

VIP, n (%)	7 (29,2)	6 (11,3)	13 (16,9)	0 (0,0)	0 (0,0)	13 (10,7)
Renal failure, n (%)	5 (20,8)	4 (7,5)	9 (11,7)	1 (2,7)	0 (0,0)	10 (8,3)
NEC stage ≥2, n (%)	3 (12,5)	9 (17,0)	12 (15,6)	3 (8,1)	0 (0,0)	15 (12,4)
ROP, n (%)	13 (54,1)	21 (39,6)	34 (44,1)	6 (18,2)	0 (0,0)	40 (33,0)
Stage 1-2, n (%)	8 (33,3)	17 (32,0)	25 (32,4)	6 (100,0)	0 (0,0)	31 (25,6)
Stage ≥3 or APROP, n (%)	5 (20,8)	4 (7,6)	9 (11,7)	0 (0,0)	0 (0,0)	9 (7,4)
BPD, n (%)	16 (88,9)	37 (77,1)	53 (80,3)	14 (41,2)	0 (0,0)	67 (62,6)
Mild, n (%)	3 (16,7)	21 (43,8)	24 (36,4)	11 (32,4)	0 (0,0)	35 (32,7)
Medium-Heavy, n (%)	13 (54,2)	16 (30,2)	29 (37,7)	3 (8,1)	0 (0,0)	32 (26,4)
BPD postnatal steroid, n (%)	13 (72,7)	20 (44,4)	33 (52,4)	5 (17,2)	0 (0,0)	38 (39,2)
Total length of stay, (days)	70,5 (2-202)	60,1 (2-238)	63,3 (2-238)	3,75 (5-64)	25,8 (22-31)	53,3 (2-238)
Mortality, n (%)	11 (45,8)	8 (15,1)	19 (24,7)	4 (10,8)	0 (0,0)	23 (19,0)

The comparison of demographic, natal and clinical characteristics of preterm infants and mothers according to gestational week groups is shown in Table 2.

In the group with a gestational age of 23-25 weeks, 21 patients (87.5%) who underwent resuscitation were found to be significantly higher than the other groups. The duration of invasive mechanical ventilator, noninvasive ventilation and oxygen use was found to be higher in the group whose gestation period was 23-25 weeks compared to the other gestational week groups. The number of patients with patent ductus arteriosus was 17 (70.8%) in the group with a gestational age of 23-25 weeks, which was higher than the other groups. The number of patients with ROP was 13 (54.1%) in those with a gestational age of 23-25 weeks, and the number of patients with ROP in the groups with a gestational age of 26-28 weeks was 21 (39.6%), which was found to be higher than in the other gestational week groups. The rate of bronchopulmonary dysplasia was never seen in infants with a gestational age >31 weeks, and this difference between the other groups was statistically significant (p<0.001). While BPD was milder in 21 (43.8%) infants with gestational age of 26-28 weeks, it was more severe in 13 (54.2%) infants with gestational age of 23-25 weeks (respectively; p=0.040), p<0.001). The rate of postnatal steroid use for BPD was found to be higher in infants with a gestational age of 23-25 weeks (p<0.001). When mortality is assessed, it has been observed that out of infants with a gestational age of 23-25 weeks, 11 (45.8%) did not survive, out of infants with a gestational age of 26-28 weeks, 8 (15.1%) did not survive, and out of infants with a gestational age of 29-31 weeks, 4 (10.8%) did not survive.

Table 2. Comparison of demographic, natal and clinical characteristics of preterm infants and mothers by week of gestation

n:Number, SD:Standard Deviation, MgSO4: Magnesium Sulphate, UMR: Prolonged Membrane Rupture, CS:Cesarean Section, SGA: Small for Gestational Age, NIV:Noninvasive Mechanical Ventilation, PDA:Patent Ductus Arteriosus, IVH: Intraventricular Hemorrhage, VIP :Ventilator Associated Pneumonia, NEC:Necrotizing Enterocolitis, ROP:Retinopathy of Prematurity, BPD: Bronchopulmonary Dysplasia, *Pearson Chi-Square Test or Fisher's Exact

Test, **Independent Sample t Test (mean±SD given), *** Kruskal Wallis H Test (median and minimum-maximum given)

Table 3 shows the comparison of maternal characteristics of the surviving and exitus preterm infants included in the study.

There was no statistically significant difference between the surviving and ex-groups in terms of maternal age, number of pregnancies, multigravida, diabetes, chorioamnionitis, placental anomaly, UMR, oligohydramnios, abnormal umbilical doppler, acute fetal distress, preeclampsia, antenatal steroid dose and presence of antenatal MgSO4 (p>0.005).

Table 3. Comparison of maternal characteristics of survived and ex preterm infants

Variables	Surviving (n=98)	Ex (n=23)	Total (n=121)	p
Maternal age, (years)	30,09±5,87	27,70±6,95	29,64±6,13	0,092*
Number of pregnancies (gravida)	2 (1-6)	2 (1-5)	2 (1-6)	0,292**
Multigravida, n (%)	75 (76,5)	14 (60,9)	89 (73,6)	0,125***
Diabetes, n (%)	3 (3,1)	0 (0,0)	3 (2,5)	1,000***
Chorioamnionitis, n (%)	4 (4,1)	0 (0,0)	4 (3,3)	1,000***
Placental anomaly, n (%)	10 (10,2)	3 (13,0)	13 (10,7)	0,692***
PPROM, n (%)	11 (11,2)	4 (17,4)	15 (12,4)	0,419***
Oligohydramnios, n (%)	13 (13,3)	5 (21,7)	18 (14,9)	0,304***
Abnormal umbilical doppler, n (%)	8 (8,2)	1 (4,3)	9 (7,4)	0,530***
Acute fetal distress, n (%)	30 (30,6)	6 (26,1)	36 (29,8)	0,669***
Preeclampsia, n (%)	25 (25,5)	3 (13,0)	28 (23,1)	0,202***
Antenatal steroid dose, n (%)				
Missing	48 (49,0)	12 (52,2)	60 (49,6)	0,886***
Half	12 (12,2)	2 (8,7)	14 (11,6)	
Full	38 (38,8)	9 (39,1)	47 (38,8)	
Antenatal MgSO$_4$, n (%)	32 (32,7)	6 (26,1)	38 (31,4)	0,541***
Type of birth, n (%)				
NVY	13 (13,3)	8 (34,8)	21 (17,4)	**0,014***
CS	85 (86,7)	15 (65,2)	100 (82,6)	

n:Number, PPROM:Preterm Premature Membrane Rupture, NVY:Normal Vaginal Delivery, CS: Cesarean Delivery, *Independent Sample t-Test (mean±SD given), **Mann Whitney U Test (median and minimum-maximum given), * **Pearson Chi-Square Test or Fisher's Exact Test

The comparison of the demographic and clinical characteristics of the survivors and exitus of the VLBW preterm infants included in the study is given in Table 4.

While the mean gestational week of the infants who ex was 25.91±2.35, the mean week of gestation of the infants who survived was 28.19±2.09. While resuscitation status was observed in 19 (82.6%) patients in the ex group, it was found to be higher in 48 (49.0%) patients in the right group. In the surviving group, intubation was observed in 41 patients (41.8%), whereas in

the group of ex, intubation was observed in 19 patients (82.6%), and this difference was found to be statistically significant (p < 0.001). In the group of ex, the median value of SNAPPE-II score was 33 (10-82), while in the group of patients who survived, it was 7.5 (0-68). In the group of patients who survived, the APGAR score at 1 minute was 7 (3-8), whereas in the group of ex, the APGAR score at 1 minute was 5 (2-8). Additionally, in the group of patients who survived, the APGAR score at 5 minutes was 8 (5-9), while in the group of ex, it was 7 (2-4). The APGAR scores at 1 minute and 5 minutes were found to be higher in the group of patients who survived compared to the group of patients who did not survive. In the group of patients who did not survive, PDA (Patent Ductus Arteriosus) was observed in 16 patients (69.6%), whereas in the group of patients who survived, it was observed in 22 patients (22.4%), and this difference was found to be statistically significant (p < 0.001). In the group of patients who survived, the time of the first red blood cell suspension transfusion was found to be higher compared to the group of patients who did not survive, and this difference was found to be statistically significant (p < 0.001). In the group of patients who did not survive, the duration of invasive mechanical ventilation and conventional mechanical ventilation use in the first 7 days was found to be higher compared to the group of patients who survived, and this difference was statistically significant (respectively; p < 0.001, p < 0.001). In the group of patients who did not survive, early neonatal sepsis was observed in 15 patients (65.2%), whereas in the group of patients who survived, it was observed in 18 patients (18.6%), and this difference was found to be statistically significant (p < 0.001).

Table 4. Comparison of demographic and clinical features of survived and ex VLBW preterm infants

Variables	Surviving (n=98)	Ex (n=23)	Total (n=121)	p
Gestational age, (weeks)	28,19±2,09	25,91±2,35	27,76±2,31	**<0,001***
Birth weight, (grams)	1123,4±232,7	862,1±253,1	1073,7±257,1	**<0,001***
SGA, n (%)	4 (4,1)	0 (0,0)	4 (3,3)	0,477**
Acute fetal distress, n (%)	30 (30,6)	6 (26,1)	36 (29,8)	0,669**
Resuscitation at birth, n (%)	48 (49,0)	19 (82,6)	67 (55,4)	**0,002***
Intubation at birth, n (%)	41 (41,8)	19 (82,6)	60 (49,5)	**<0,001***
SNAPPE 2 score	7,5 (0-68)	33 (10-82)	15 (0-82)	**<0,001****
APGAR 1 minute	7 (3-8)	5 (2-8)	6 (2-8)	**0,001****
APGAR 5. minute	8 (5-9)	7 (4-9)	8 (4-9)	**0,001****
TPN duration, (days)	14 (3-55)	11 (1-59)	13,5 (1-59)	0,496***
RDS, n (%)	70 (71,4)	21 (91,3)	91 (75,2)	**0,047***
Amount of first cure surfactant (mg/kg)	173,7±51,70	189,9±44,1	177,4±50,2	0,199*
Number of surfactant applications ≥2, n (%)	18 (25,7)	11 (52,4)	29 (31,9)	**0,027***
NEC ≥ stage 2, n (%)	10 (10,2)	5 (21,7)	15 (12,4)	0,131**
IVH grade 3-4, n (%)	13 (13,3)	12 (52,2)	25 (20,7)	**<0,001***
PDA, n (%)	22 (22,4)	16 (69,6)	38 (31,4)	**<0,001***
BPD stage moderate-severe, n (%)	25 (25,5)	7 (30,4)	32 (26,4)	0,630**
BPD treatment steroid, n (%)	36 (40,9)	2 (22,2)	38 (39,2)	0,274**

Time to first ES transfusion, (days)	14 (1-37)	3 (1-15)	8,5 (1-37)	**<0,001*****
Total invasive mech vent time, (days)	3 (0-89)	11 (1-143)	5 (0-143)	**<0,001*****
Total O2 time, (days)	36,5 (1-172)	11 (0-190)	33 (0-190)	**0,027*****
Conventional MV in the first 7 days, (days)	1 (0-7)	5 (0-7)	1 (0-7)	**<0,001*****
HFOV in first 7 days, (days)	0 (0-7)	0 (0-6)	0 (0-7)	0,101***
VIP, n (%)	8 (8,2)	5 (21,7)	13 (10,7)	0,058**
Renal failure, n (%)	3 (3,1)	7 (30,4)	10 (8,3)	**<0,001****
Air leak syndrome, n (%)	6 (6,1)	4 (17,4)	10 (8,3)	**0,033****
Clinical sepsis, n (%)	43 (44,3)	10 (45,5)	53 (44,5)	0,924**
Culture (+) sepsis, n (%)	19 (19,4)	4 (19,0)	23 (19,3)	0,971**
Early neonatal sepsis, n (%)	18 (18,6)	15 (65,2)	33 (27,5)	**<0,001****
Duration of empirical antibiotic use, (days)	5,9±2,9	4,4±3,1	5,6 (2,9)	**0,033***
Postnatal hypotension (<72 hours), n (%)	14 (14,3)	14 (60,9)	28 (23,1)	**<0,001****

n:Number, SGA: Small for Gestational Age, TPN:Total Parental Nutrition, RDS:Respiratory Distress Syndrome, NEC:Necrotizing Enterocolitis, IVH:IntraventricularHemorrhage, PDA: Patent Ductus Arteriosus, BPD: Bronchopulmonary Dysplasia, ES: Erythrocyte Suspension, HFOV: High Frequency Oscillating Ventilation, VAP:Ventilator-Associated Pneumonia, *Independent Sample t Test (mean±SD given), ** Pearson Chi-Square Test or Fisher's Exact Test, ***Mann Whitney U Test(median and minimum-maximum given)

The comparison of the characteristics of nutrition, fluid and weight gain of the surviving and exitus preterm infants who were included in the study is given in Table 5.

In the group of patients who survived, the median value of weight change on the 7th day was -65 (min: -400-max: 250) grams, whereas in the group of patients who did not survive, it was 5 (min: -220-max: 450) grams, and this difference was found to be statistically significant ($p = 0.013$). In the group of patients who survived, the mean total weight gain on the 15th postnatal day was 5.6±6.7 mg/day, while in the group of patients who did not survive, it was 12.8±15.0 mg/day, and this difference was found to be statistically significant ($p=0.002$). In the group of patients who survived, the mean total weight gain on the 45th postnatal day was 19.9±5.1 mg/day, while in the group of patients who did not survive, it was 27.7±25.3 mg/day, and this difference was found to be statistically significant ($p=0.023$). In the group of patients who did not survive, the mean 1st day postnatal gastric residual volume was 105.4 ml (range: 47.4-217.1), whereas in the group of patients who survived, it was higher at 86.9 ml (range: 58.3-181.9), and this difference was found to be statistically significant ($p < 0.001$). In the group of patients who did not survive, the mean 3rd day postnatal gastric residual volume was 163.3 ml (range: 97.8-257.7), whereas in the group of patients who survived, it was higher at 117.4 ml (range: 69-195.5), and this difference was found to be statistically significant ($p < 0.001$). In the group of patients who did not survive, the mean 5th day postnatal gastric residual volume was 190 ml (range: 152.6-310), whereas in the group of patients who survived, it was higher at 152.2 ml (range: 98.6-274), and this difference was found to be statistically significant ($p < 0.001$). In the group of patients who did not survive, the mean 7th day postnatal gastric residual

volume was 234 ml (range: 111.5-675), whereas in the group of patients who survived, it was higher at 168.7 ml (range: 99.7-323), and this difference was found to be statistically significant (p = 0.002).

Table 5. Comparison of feeding, gastric residual volume, and weight gain characteristics between preterm infants with intact survival and those who did not survive.

Variables	Surviving (n=98)	Ex (n=23)	Total (n=121)	p
First 14 days receiving breast milk, n (%)	77 (79,4)	15 (83,3)	92 (80,0)	0,765*
First 30 days receiving breast milk, n (%)	58 (59,2)	9 (69,2)	67 (60,4)	0,560*
Weight change on day 7 (±) g	-65 (-400-250)	5 (-220-450)	-50 (-400-450)	**0,013****
Day of reaching birth weight	11 (-130-31)	7 (4-17)	10 (-130-31)	**0,002****
Day of reaching 100 ml/kg of feeding	10 (3-46)	10 (0-22)	10 (0-46)	0,410**
Postnatal 15th day total weight gain (mg/day)	5,6±6,7	12,8±15,0	6,6±8,7	**0,002*****
Postnatal 30th day total weight gain (mg/day)	16,1±5,9	19,9±17,0	16,5±7,6	0,132***
Postnatal 45th day total weight gain (mg/day)	19,9±5,1	27,7±25,3	20,5±8,1	**0,023*****
Postnatal 60th day total weight gain (mg/day)	21,1±4,4	20,4±8,6	21,1±4,7	0,763***
Postnatal fluid 1st day (cc/kg)	86,9 (58,3-181,9)	105,4 (47,4-217,1)	88 (47,4-217,1)	**<0,001****
Postnatal urine day 1 (ml/kg/h)	3,92±1,42	4,44±2,54	4,02±1,69	0,192***
Postnatal fluid 3rd day (cc/kg)	117,4 (69,0-195,5)	163,3 (97,8-257,7)	123,5 (69,0-257,7)	**<0,001****
Postnatal urine 3rd day (ml/kg/h)	4,1 (2,3-9,6)	5,1 (2,3-11,1)	4,3 (2,3-11,1)	**0,002****
Postnatal fluid 5th day (cc/kg)	152,2 (98,6-274,0)	190,0 (152,6-310,0)	162,6 (98,6-310,0)	**<0,001****
Postnatal urine 5th day (ml/kg/h)	4,89±1,50	5,24±2,41	4,95±1,67	0,401***
Postnatal fluid 7th day (cc/kg)	168,7 (99,7-323,0)	234,0 (111,5-675,0)	171,7 (99,7-675,0)	**0,002****
Postnatal urine 7th day (ml/kg/h)	5,1 (2,2-12,4)	5,2 (0,7-11)	5,1 80,7-12,4)	0,581**
SF bolus (<72 hours), n (%)	6 (6,1)	7 (30,4)	13 (10,7)	**0,003***

n:Number, *Pearson Chi-Square Test or Fisher's Exact Test, **Mann Whitney U Test (median and minimum-maximum given), ***Independent Sample t Test (mean±SD given)

The comparison of the laboratory characteristics of the surviving and exitus preterm infants who were included in the study is given in Table 6.

The 7th day PLT value for infants in the ex group was determined as 150.3±91.4, while in the survived group, it was determined as 298.8±123.7. This difference was found to be statistically significant (p<0.001). Postnatal thrombocytopenia (<100.000/mm3) was observed in 18 patients (78,3%) in the ex group and 21 patients (21,4%) in the surviving group, and this difference was statistically significant (p<0,001). The rate of metabolic acidosis (HCO3<15 tdv) in the first week was found in 17 patients (73.9%) in the ex group and in 20 patients (20.4%) in the surviving group, and this difference was statistically significant (p<0.001). Postnatal cholestasis was observed in 9 patients (39.1%) in the ex group and in 11 patients (11.2%) in the surviving group and this difference was statistically significant (p=0.001). The rate of postnatal hypernatraemia (Na >155) was found in 9 patients (39.1%) in the ex group and in 10 patients (10.2%) in the surviving group, and this difference was statistically significant (p=0.001).

Table 6. Comparison of laboratory characteristics of surviving and ex VLBW preterm infants

Variables	Surviving (n=98)	Ex (n=23)	Total (n=121)	p
7th day albumin	3,12±0,47	3,21±0,74	3,14±0,53	0,566**
Postnatal thrombocytopenia (<100,000/mm3), n (%)	21 (21,4)	18 (78,3)	39 (32,2)	**<0,001***
The first week metabolic acidosis (HCO3 <15), n (%)	20 (20,4)	17 (73,9)	37 (30,6)	**<0,001***
Postnatal cholestasis, n (%)	11 (11,2)	9 (39,1)	20 (16,5)	**0,001***
Postnatal hypernatremia (Na> 155 mmol/L), n (%)	10 (10,2)	9 (39,1)	19 (15,7)	**0,001***
Postnatal hyponatremia (Na <130 mmol/l), n (%)	21 (21,4)	9 (39,1)	30 (24,8)	0,077***
Postnatal hypoglycemia attack (<50 mg/dl), n (%)	32 (32,7)	9 (39,1)	41 (33,9)	0,555***
Postnatal hyperglycemia (> 200 mg/dl), n (%)	27 (27,6)	15 (65,2)	42 (34,7)	**0,001***
Postnatal hypocapnia (CO2 <30 mmHg), n (%)	63 (64,3)	16 (69,6)	79 (65,3)	0,632***
Postnatal hypercapnia (CO2> 55 mmHg), n (%)	43 (43,9)	18 (78,3)	61 (50,4)	**0,003***

n: Number, *Mann Whitney U Test (median and minimum-maximum given), **Independent Sample t Test (mean±SD given), ***Pearson Chi-Square test

The results of binary logistic regression analyses for perinatal characteristics that may be associated with mortality in preterm infants with VLBW included in the study are given in Table 7.

Binary logistic regression analysis showed that mortality was associated with birth weight (p<0.001, OR 1.005 (1.002-1.007)), gestational age (p<0.001, OR 1.656 (1.289-2.127)), SNAPPE 2 score (p<0.001, OR 0.945 (0.919-0.971)), APGAR 1. Minute (p=0.001, OR 1.723

(1.238-2.400)) and 5th minute score (p=0.002, OR 1.805 (1.247-2.614)) were found to be associated with resuscitation at birth (p=0.006, OR 4.948 (1.569-15.605)) and intubation (p=0.001, OR 6.604 (2.090-20.866)) (Table 7).

Table 7. Binary logistic regression analysis results for perinatal characteristics that may be associated with mortality

Variables	Beta	Standard error	P	OR (CI %95)
Birth weight (grams)	-0,005	0,001	**<0,001**	1,005 (1,002-1,007)
Gestational age (weeks)	-0,504	0,128	**<0,001**	1,656 (1,289-2,127)
SNAPPE 2 score	0,056	0,014	**<0,001**	0,945 (0,919-0,971)
APGAR 1st minute	-0,544	0,169	**0,001**	1,723 (1,238-2,400)
APGAR 5th minute	-0,591	0,189	**0,002**	1,805 (1,247-2,614)
Resuscitation at birth	1,599	0,586	**0,006**	4,948 (1,569-15,605)
Intubation at birth	1,888	0,587	**0,001**	6,604 (2,090-20,866)

OR: Odds ratio, CI 95%: 95% confidence interval

The results of binary logistic regression analyses for the clinical characteristics that may be associated with mortality in the non-study VLBW preterm infants are given in Table 8.

Presence of PDA with mortality in binary logistic regression analysis (p<0.001, OR 0.127 (0.046-0.347), time of first erythrocyte suspension transfusion (p=0.001, OR 1.263 (1.102-1.448))), duration of conventional mechanical ventilation in the first 7 days (p <0.001, OR 0.732 (0.616-0.870), total invasive mechanical ventilation time (p=0.024, OR 0.977 (0.957-0.997)) weight change in the first 7 days (p=0.003, OR 0.994 (0.990-0.998)) postnatal 15. total weight gain on day 1 (p=0.008, OR 0.929 (0.879-0.981)), day 1 postnatal fluid (p<0.001, OR 0.971 (0.956-0.987))), day 3 postnatal fluid (p<0.001, OR 0.960)) (0.942-0.978), with Day 5 postnatal fluid (p<0.001, OR 0.968 (0.952-0.983)) and day 7 postnatal fluid (p<0.001, OR 0.979 (0.967-0.991)).

Table 8. Binary logistic regression analysis results for clinical characteristics that may be associated with mortality

Variables	Beta	Standard Error	P	OR (CI %95)
PDA presence	2,066	0,514	**<0,001**	0,127 (0,046-0,347)
First ES Transfer Time (day)	-0,234	0,070	**0,001**	1,263 (1,102-1,448)
Conventional MV in the first 7 days (day)	0,312	0,088	**<0,001**	0,732 (0,616-0,870)
Total invasive mechanical vent time (day)	0,023	0,010	**0,024**	0,977 (0,957-0,997)
Weight change on the first 7th day (± gr)	-0,006	0,002	**0,003**	0,994 (0,990-0,998)
Postnatal 15th day total weight gain (mg/day)	0,074	0,028	**0,008**	0,929 (0,879-0,981)
Postnatal fluid 1st day (cc/kg)	0,029	0,008	**<0,001**	0,971 (0,956-0,987)
Postnatal fluid 3rd day (cc/kg)	0,041	0,010	**<0,001**	0,960 (0,942-0,978)
Postnatal fluid 5th day (cc/kg)	0,033	0,008	**<0,001**	0,968 (0,952-0,983)
Postnatal fluid 7th day (cc/kg)	0,021	0,006	**<0,001**	0,979 (0,967-0,991)

PDA: Patent Ductus Arteriosus, ES: Erythrocyte Suspension, OR: Odds ratio, CI 95%: 95% confidence interval

Table 9 shows the results of binary logistic regression analysis for the laboratory characteristics of the patients that may be associated with mortality in VLBW preterm infants included in the study.

Binary logistic regression analysis showed that mortality was associated with thrombocytopenia (<100. 000/mm3) (p<0.001, OR 0.076 (0.025-0.228)), first week metabolic acidosis (HCO3<15 tdv) (p<0.001, OR 0.090 (0.032-0.259)), presence of cholestasis (p=0.002, OR 0.197 (0.069-0.560)), hypernatraemia (Na >155 mmol/L) (p=0, 001, OR 0.177 (0.061-0.512)), hyperglycaemia (>200 mg/dl) (p=0.001, OR 0.203 (0.077-0.533)) and hypercapnia (CO_2 >55 mmHg) (p=0.005, OR 0.212 (0.075-0.632)).

Table 9. Binary logistic regression analysis results for laboratory characteristics that may be associated with mortality

Variables	Beta	Standard Error	P	OR (CI %95)
Thrombocytopenia (<100,000/mm3)	2,580	0,562	**<0,001**	0,076 (0,025-0,228)
Metabolic acidosis in the first week (HCO3< 15)	2,402	0,537	**<0,001**	0,090 (0,032-0,259)
Presence of cholestasis	1,626	0,534	**0,002**	0,197 (0,069-0,560)
Hypernatraemia (Na >155 mmol/L)	1,733	0,542	**0,001**	0,177 (0,061-0,512)
Hyperglycaemia (>200 mg/dl)	1,595	0,493	**0,001**	0,203 (0,077-0,533)
Hypercapnia (CO2 >55 mmHg)	1,527	0,545	**0,005**	0,212 (0,075-0,632)

PLT: Platelet Count, PCT: Procalcitonin, OR: Odds ratio, CI 95%: 95% confidence interval

It was found that 57.0% of the preterm infants included in our study were male and 43.0% were female. In studies conducted in our country, the rates of male infants were reported to be 54.8%, 52.2%, 56.2%, 54.1% (16-19). The mean birth weight of the preterm infants included in our study was 1073.7±257.1 g. In our country, the mean birth weight was reported as 1094±329 g in the study conducted by Öztürk, 1060±372 g in the study conducted by Zeybek, 1191±247 g in the study conducted by Tomo et al. in 2020, and 1066±254 g in the study conducted by Gupta et al. (17,20,21,22). In our study, 62.5% of infants with a birth weight of 500-750 g, 26.5% of infants with a birth weight of 751-1000 g, 5.3% of infants with a birth weight of 1001-1250 g, and 6.1% of infants with a birth weight of 1251-1500 g died. It was found that mortality increased with decreasing birth weight. The mortality rate was significantly higher in infants with a birth weight of 500-750 g compared to the other groups. Similarly, the mortality rate (45.8%) in the 23-25 gestation week group was significantly higher than the other groups. In the study conducted by Köksal et al. mortality rate was reported as 53% between 500-1000 g, 43% between 1001-1500 g and 21% between 1501-2000 g (23). In another 5-year neonatal intensive care unit mortality study, mortality percentages were found to be 53% between 500 and 1000 g, 43% between 1001 and 1500 g, and 21% between 1501 and 2000 g (24). Our findings are similar to the literature. It was found that resuscitation was performed at birth in 55.4% of the preterm infants included in our study. When evaluated according to birth weight groups, it was found that the resuscitation rate increased with decreasing birth weight. When evaluated according to gestational week groups, it was found that the resuscitation rate increased as the gestational week decreased. In our study, the resuscitation rate was found to be higher in the group who died (82.6%) than in the group who survived (49.0%). Intubation rate (82.6%) was found to be higher in the ex group. Logistic regression analysis showed that mortality was associated with resuscitation and intubation at birth. In a multicentre study conducted in our country, it was reported that resuscitation was needed with a rate of 52.4% in VLBW infants and the rate of resuscitation increased as birth weight and gestational age decreased (25). In our study, the rate of PDA was higher in the group with a gestation period of 23-25 weeks (70.8%) compared to the other groups, and the rate of PDA in the group that died (69.6%) was higher than the group that survived (22.4%). PDA is observed in 39% of VLBW infants and in 70% of infants born before 28 weeks (26,27). In our study, logistic regression analysis showed that mortality was associated with the presence of PDA. In the study conducted by Öztürk in VLBW infants, PDA rate was observed to be lower in the 23-25 week group

compared to other week groups (20). In the study conducted by Koç et al. in VLBW infants, the rate of PDA was found to be higher in the group with a gestation period of 22-24 weeks (69.0%) compared to other week groups, and it was observed at a higher rate in the group with a birth weight ≤500 g (66.7%) compared to other groups (25). In the literature, it is known that the incidence of PDA requiring treatment increases with decreasing gestational week and birth weight, especially below the 28th gestational week, and the possibility of spontaneous closure of PDA gradually decreases (28). In our study, the rate of early neonatal sepsis was significantly higher in infants with a birth weight of 500-750 g (56.3%) compared to other birth weight groups. The rate of early neonatal sepsis in the group with a gestation period of 23-25 weeks (58.3%) was higher than the other groups. In addition, the rate of early neonatal sepsis (65.2%) was found to be higher in the group who died compared to the group who survived. In our study, the rate of nosocomial sepsis was found to be significantly higher in infants with a birth weight <1000 g compared with other birth weight groups. Nasocomial sepsis has been reported with a rate of 41.0% in the USA, 5.3% in Japan, and 25.0% in Brazil in large-scale studies conducted with VLBW infants (23,29). In our study, it was observed that the rate of sepsis increased with decreasing birth weight and gestational week in accordance with the literature, but sepsis was encountered at a higher rate compared to the literature. In our study, the rate of ventilator-associated pneumonia was significantly higher in infants with a birth weight of 500-750 g (31.3%) compared to other birth weight groups. The rate of ventilator-associated pneumonia in the group with a gestation period of 23-25 weeks (29.2%) was higher than the other groups. ROP was observed in 33% of the preterm infants included in our study, ROP stage 1-2 was found in 25.6%, and ROP stage ≥3 or APROP was found in 7.4%. Güran ve ark.'nın ÇDDA bebeklerde yapmış olduğu çalışmada ROP oranı %22,4, ROP evre 1-2 oranı %17,9, ROP evre 3-4 oranı %4,5 olarak bildirilmiştir (30). In the study conducted by Güran et al. in infants with VLBW, the rate of ROP was reported as 22.4%, the rate of ROP stage 1-2 was reported as 17.9%, and the rate of ROP stage 3-4 was reported as 4.5% (30). In a study conducted by Koç et al. in VLBW infants, the rate of ROP was found to be 42.0% and the rate of ROP stage 3-4 was found to be 11.1% (25). In our study, ROP stage ≥3 or APROP was not detected in the 1251-1500 g group. In our study, it was found that the incidence of ROP decreased with increasing birth weight in infants over 750 g. In our study, the rate of advanced stage ROP (stage ≥3 or APROP) (20.8%) was significantly higher in infants with a gestation period of 23-25 weeks compared to the other groups. Advanced ROP was not detected in infants with a gestation period ≥29 weeks. In our study, it was found that the incidence of ROP decreased with increasing gestational week. In a study conducted by Öztürk in VLBW infants, it was reported that the rate and stage of ROP increased as the gestational week decreased (20). BPD was found in 62.6% of the preterm infants included in our study. In a comprehensive study conducted in our country with VLBW infants, the rate of BPD was reported as 23.7% (25). Compared to the literature, the rate of BPD in our study was found to be higher. In our study, the rate of BPD (90.0%) was found to be significantly higher in infants with a birth weight of 500-750 g compared to the other groups and it was found to have a more severe course compared to the other groups. In our study, the rate of BPD in infants with a gestation period of 23-25 weeks (88.9%) was found to be significantly higher compared to the other groups, and it was found to have a more severe course compared to the other groups. In studies conducted by Koç et al. and Stoll et al. with infants with VLBW, it was reported that the rate of BPD decreased as birth weight and gestational week increased (25,31). Similar to the literature, the rate of BPD decreased with increasing gestational week in our study. In our study, the median value of SNAPPE 2 score was found to be 33 (10-82) in the group who ex and 7.5 (0-68) in the group who survived, and this difference was statistically significant. Logistic regression analysis showed that mortality was associated with SNAPPE 2 score. In the study conducted by Özcan et al. with VLBW infants, a relationship was found between high SNAPPE 2 and

neonatal morbidity, which supports our study (32). In the study conducted by Yanhong et al. with VLBW infants, it was reported that high SNAPPE scores were associated with mortality and were predictive of mortality when used together with other perinatal risk factors (33). Our findings are similar to the literature. In our study, APGAR 1st minute and APGAR 5th minute scores were found to be lower in the group who ex compared to the group who survived, and this difference was statistically significant. Logistic regression analysis showed that mortality was associated with APGAR 1st and 5th minute scores. In the study conducted by Le et al. in the USA with VLBW infants, it was found that low APGAR score was associated with increased mortality in VLBW premature newborns and it was shown that it may be a useful tool in the evaluation for clinicians (34). Our findings are similar to the literature. In the logistic regression analysis performed in our study, mortality was found to be associated with platelet count and postnatal thrombocytopenia. The rate of thrombocytopenia was found to be 78.3% in ex infants. In a study conducted by Doron et al. with VLBW infants, it was reported that thrombocytopenia was observed in 145 (11.3%) of 1283 preterm infants and the incidence of IVK was higher in thrombocytopenic infants (35). In our study, the incidence of hypernatremia and hyperglycaemia was found to be higher in the ex group compared to the surviving group. Logistic regression analysis showed that mortality was associated with hypernatremia and hyperglycaemia. Studies have reported that severe hyperglycaemia in the first few days after birth is associated with sepsis and mortality in VLBW infants (36-38). The management of fluid intake in the first days of postnatal life in preterm infants, especially in VLBW and ADDA (<1000 g) infants, is effective on morbidity and mortality. In a retrospective study conducted in extremely preterm infants (22-26 GH), early outcomes of infants followed up with restricted fluid and liberal fluid management in the first postnatal week were compared in two separate cohorts. Although there was a mean difference of 87 ml/kg between the groups in cumulative fluid intake in the first week, it was observed that there was no difference in mean weight loss and mean peak sodium value on Day 4. The incidence of hypernatraemia, PDA ligation, BPD and IVH were also found to be similar in both groups (39). A Cochrane analysis of 5 randomised controlled trials showed that restricted fluid intake in preterm infants in the postnatal period significantly increased postnatal weight loss and significantly reduced the risks of patent ductus arteriosus and necrotising enterocolitis. It was observed that with restricted fluid intake, there was an increased risk of dehydration and a tendency for decreased risks of bronchopulmonary dysplasia, intracranial hemorrhage, and mortality; however, this tendency did not show a statistically significant difference (40). In our study, it was observed that high fluid intake in the first week was associated with mortality.

4. Conclusion and Recommendations

In conclusion, starting from the prenatal period, delivery room and postnatal practices are of great importance in the prevention of morbidity and mortality of preterm infants. In our study, the morbidity of VLBW preterm infants and the factors affecting mortality were studied. In our patient group, birth weight, gestational age, resuscitation and intubation procedure in the delivery room, presence of PDA, time of first erythrocyte suspension transfusion, duration of conventional mechanical ventilation in the first 7 days, total duration of invasive mechanical ventilation, weight change in the first 7 days, total weight gain on postnatal day 15, and postnatal fluid on the 1st, 3rd, 5th and 7th days were found to be associated with mortality. Prospective large-scale studies are needed to evaluate risk factors in order to reveal practices for reducing morbidity and mortality in VLBW preterm infants.

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EVALUATION OF THE EFFECT OF FEED SUPPLEMENTATION WITH PRICKLY JUNIPER *JUNIPERUS OXYCEDRUS* L. ON RED TILAPIA GROWTH PERFORMANCES

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ABSTRACT

Prickly juniper *Juniperus oxycedrus* L. is an aromatic and medicinal plant widely distributed in Algeria. This species is locally known as 'Taga' and is traditionally used for the treatment of various diseases such as respiratory, digestive and skin disorders. The present study aims to evaluate the effect of supplementation of red Tilapia feed with *Juniperus oxycedrus* powder on the growth performances.

Two experimental feeds were prepared; one control feed and another one supplemented by adding 5 grams of *Juniperus oxycedrus* powder to the basal diet. The fishes were supplemented with these feeds for 30 days and the results were obtained for every 15 days once. The length gain, weight gain and specific growth rate were analyzed along with some biochemical and hematological parameters.

This study indicated that inclusion of medicinal plant ingredients in Tilapia feed resulted in modification of growth performance and the formulation of plant-based diet for fish will provide new opportunities for growth promotion and as alternative therapies to substitute conventional drugs and antibiotics used in aquaculture.

Keywords: *Juniperus oxycedrus*, Tilapia, Growth performance.

MİYOKİNLER VE METABOLİK ETKİLERİ

MYOKINES AND THEIR METABOLIC EFFECTS

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ÖZET

Giriş: Son on yılda çalışmalar, iskelet kasının, egzersizin faydalı etkisinden kısmen sorumlu olabilecek, salgılar yapan aktif bir endokrin organ olduğunu göstermiştir. Kas lifleri tarafından üretilen, eksprese edilen ve salınan ve hem parakrin hem de endokrin etkiler gösteren sitokinlerin ve diğer peptitlerin "miyokinler" olarak sınıflandırılması gerektiğini önerilmiştir. Bu miyokinlerin lokal olarak kasların içinde veya endokrin tarzda uzak dokularla iletişimi sağladıkları açıklanmaktadır.

Amaç: Bu çalışma, iskelet kası kütlesini ve metabolizmasını düzenleyen miyokinlerin metabolizma üzerindeki biyolojik etkilerini vurgulayan çalışmaları değerlendirmektedir.

Yöntem: Çeşitli miyokinlerin metabolik etkilerini inceleyen çalışmalar, ISI web of science, SCOPUS, PubMED ve Google Akademik veri tabanlarında tarandı.

Bulgular: İn vivo deneyler, IL-6'nın, artan bir GLUT4 translokasyonu yoluyla glikoz alımını artırabileceğini göstermiştir. Son kanıtlar ile, IL-6'nın hem iskelet kasında hem de yağ dokusunda AMP ile aktive olan protein kinaz (AMPK) aktivitesini arttırarak AMPK hücrede yağ asidi oksidasyonunu uyardığını göstermiştir. Bir miyokin olarak sınıflandırılan diğer bir faktör IL-15'dır. IL-15'in katı anabolik etkileri olmakla birlikte, yağ dokusu kütlesini azaltmada da rol oynadığı görülüyor. Karaciğerde eksprese edilen bir protein olan FGF-21 aynı zamanda bir miyokin olarak da tanımlanır. FGF-21, kas ve yağda glikoz alımını, adiponektinin sentezini ve salınmasını ve artan enerji harcamasına yol açan adipositlerin beyazdan kahverengiye kaymasını uyarır.

Sonuç: Miyokinler, obezite patogenezinde, substrat oksidasyonunda, lipit bölünmesinde, insülin duyarlılığında ve inflamasyonda rol oynamaktadır. Miyokinlerin, iskelet kası kütlesi ve egzersizin sağlık üzerindeki yararlı etkilerine aracılık etmede önemli roller oynadığı ileri sürülmektedir. Miyokinlerin daha iyi anlaşılması, obezite, diyabet, kardiyovasküler hastalıklar, kanser ve egzersizle iyileştirildiği bilinen diğer hastalıklar için yeni tedavileri tanımlayabilir.

Anahtar sözcükler: Miyokinler, iskelet kası, IL-6, IL-15, FGF-21

ABSTRACT

Introduction: Studies over the past decade have shown that skeletal muscle is an active endocrine organ that makes secretions, which may be partially responsible for the beneficial effect of exercise. It has been proposed that cytokines and other peptides produced, expressed and released by muscle fibers and exerting both paracrine and endocrine effects should be classified as "myokines". It is disclosed that these myokines communicate locally within the muscles or with distant tissues in an endocrine fashion.

Aim: This study evaluates studies highlighting the biological effects of myokines, which regulate skeletal muscle mass and metabolism, on metabolism.

Method: Studies were searched that examining the metabolic effects of various myokines in Google academic, ISI web of science, SCOPUS and PubMED databases.

Results: In vivo experiments have shown that IL-6 can increase glucose uptake through an increased GLUT4 translocation. Recent evidence has shown that IL-6 stimulates fatty acid oxidation in AMPK cell by increasing AMP-activated protein kinase (AMPK) activity in both skeletal muscle and adipose tissue. Another factor classified as a myokine is IL-15. While IL-15 has solid anabolic effects, it also appears to play a role in reducing adipose tissue mass. FGF-21, a protein expressed in the liver, is also described as a myokine. FGF-21 stimulates glucose uptake in muscle and fat, synthesis and release of adiponectin, and white-to-brown shift of adipocytes leading to increased energy expenditure.

Conclusion: Myokines play a role in the pathogenesis of obesity, substrate oxidation, lipid cleavage, insulin sensitivity, and inflammation. It has been suggested that myokines has important roles in mediating the beneficial effects of skeletal muscle mass and exercise on health. A better understanding of myokines could identify new treatments for obesity, diabetes, cardiovascular disease, cancer, and other diseases known to be ameliorated by exercise.

Keywords: Myocines, skeletal muscle, IL-6, IL-15, FGF-21

CLINICAL DIAGNOSIS OF SOME VIRAL HUMAN WITH MYOCARDITIS PATIENTS BY PCR

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ABSTRACT

Three of Human samples from 100 samples of human *Coxsakievirus , Adenovirus B1 ,Coronavirus* were collected during October, 1st, 2021 to 8 of December 2021. Human *Coxsakievirus , Adenovirus B1 ,Coronavirus* were including (1month – 95 years). The qPCR. method was detected of three samples , for sequence diagnosis the results showed *Coxsakievirus* (98.38%) , *Adenovirus B1* (95%), *Coronavirus* (80%) cases. The Population groups studied samples subject groups were distribution into (6) groups including (1month,1-15, 16-31 and 32-47 and 48-63 and 64-79 and 80-95) year, changed age too gender. The samples were isolated from the hospitals including (Al-Sadr , AL- Hakeem , AL- Sajjad). The first study in Iraq to diagnose of human *Coxsakievirus , Adenovirus B1 ,Coronavirus* with Myocarditis.

Keywords: *Coxsakievirus* , *Adenovirus* B1 ,*Coronavirus* , Myocarditis, qPCR.

Introduction

Coxsakievirus B3 was a non-enveloped single-stranded RNA virus belonging to the genus *Enterovirus* of the picornavirus family. As with all members of the picornaviridae, *Coxsakievirus* B3 was characterized by an icosahedral capsid of approximately 30 nm diameter, which houses the positive-sense (+) RNA genome . The capsid consists of twelve pentamers, each composed of five asymmetric units of the structural proteins VP1–VP4. VP1 to VP3 form the viral shell. VP4 lies at the inner surface of the viral shell making a connection between N-termini of the other capsid proteins and the viral RNA, thereby acting as a stabilizer of the capsid pentamers during virus assembly. The positive-sense (+) RNA genome of *Coxsakievirus* B3 has a length of approximately 7.5 kilobase pairs (kb). It comprises a single large open reading frame (ORF) flanked by a 742 nucleotide (nt) long 50 - untranslated region (50 -UTR) and an about 100 nt long polyadenylated 3'-UTR . Particularly the long 50 -UTR builds a number of stem-loop structures, among them the cloverleaf (CL) and the internal ribosomal entry site (IRES) which play major roles in viral replication and

protein synthesis. The CL interacts with VPg (virus protein genome-linked, also known as 3B), which is covalently attached to the 50 -end of the positive-sense RNA, and with the 30 - UTR and other trans-acting proteins to form the replication complex during RNA synthesis (1). important pathogen that causes several infectious diseases, ranging from a mild febrile syndrome or respiratory illness to aseptic meningitis, myocarditis, and encephalitis (2). Enteroviruses spread from person to person by the fecal-oral and by the respiratory routes but indirect transmission may also occur via different routes, including contaminated water, food and fomites (3).

Adenoviruses (AdVs) were non-enveloped icosahedral viruses with a double-stranded DNA genome . Since its discovery in 1953 more than 120 species-specific adenoviral serotypes have been identified in humans, mammals, birds, fish and reptiles . Though human adenoviruses are not generally associated with causing severe disease in immunocompetent humans, they may cause severe infections in immunocompromised people (4). Apical fibres projecting from capsid surface mediate attachment to host cells. Adenoviruses use either the *Coxsackie* B virus-*Adenovirus* receptor (CAR) or CD46 as their primary receptor. Both were expressed in a broad range of cell types, facilitating multiorgan infection and disease . The incubation period ranges from 2 days to 2 weeks depending on the virus type and mode of transmission. Adenoviruses can be spread by droplet inhalation, fomites, the faecal-oral route, and in transplant tissue. Even among nonenveloped viruses, adenoviruses were unusually stable, even in adverse environmental conditions, persisting for a month or more (5).

SARS-CoV-2 was a zoonotic virus belonging to the β-coronavirus genus consisting of crown-shaped peplomers, enveloped as positive-single-strand RNA (+ssRNA) viruses, identifed in the pleomorphic form with a size of 80–160 nm and a genome varying between 27 and 32 kilobases (kb) (Vellingiri et al. 2020; Ji et al. 2020). The virus has four major structural proteins to control the viral structure and function: (1) the protein Envelope (E), (2) the protein Nucleocapsid (N), (3) the protein of the Membrane (M), and (4) the protein Spike (S). The signifcant characteristic of the *Coronavirus* was because of S-proteins as it forms a crownlike structure on the outermost layer (6). The possible modes of transmission of SARS-CoV-2 include contact ,droplet, airborne, fomite, fecal–oral, Urine, Saliva and animal-to-human transmission. The incubation period for *Coronavirus*, which was the duration from exposure to the virus (becoming infected) to the onset of symptoms, was on average 5–6 days; however, it can be up to 14 days. The viral load and shedding pattern was different in each patient (7). was an inflammatory heart disease induced by both infectious (ie, viral, bacterial, fungal) and noninfectious (ie, immune-mediated organ-specific or systemic disease, drugs, toxins) causes. It mainly affects young adults and children, leading to increased cardiac morbidity and mortality.

Myocarditis was usually considered an uncommon disease, though its real incidence seems to be largely underestimated. Postmortem studies on sudden cardiac death (SCD) in young people revealed active myocarditis in 2% to 42% cases.2,3 Moreover, in the years 1990 to 2015, increased morbidity and mortality from myocarditis were recorded. In approximately 50% of patients, acute myocarditis resolves itself spontaneously, while in the remaining cases, it evolves into serious complications and/or to dilated cardiomyopathy (DCM). Finally, due to the variability of clinical presentation and its unpredictable prognosis, myocarditis still poses many diagnostic and therapeutic challenges (8). The spectrum of clinical symptoms was rather wide and unspecific, ranging from mild discomfort due to palpitations, non-specific chest pain, or fatigue to more severe clinical manifestations such as acute coronary syndrome-like presentations, acute (with or without cardiogenic shock) or chronic heart failure, brady- and tachyarrhythmias, as well as conduction abnormalities . Infectious prodrome with fever, myalgia, and respiratory or gastrointestinal symptoms can be present in cases of infectious myocarditis, whereas in other cases, symptoms associated with systemic diseases can be of relevance. Owing to the unspecific nature of clinical presentation, many cases of myocarditis may go undetected, are accidentally discovered during autopsy, or were discovered too late when the patient already developed end-stage heart disease (9).

Material and Methods

Collect affected specimens of Human *Coxsakievirus , Adenovirus B1,Coronavirus:*

Samples were collected   of *Coxsakievirus , Adenovirus B1,Coronavirus* through a start interval 1 October 2021 up to 8 December 2021. Sixty eight for *Coxsakievirus* including (32) female, (36) male, sixty three for Adenovirus B1 including (31) female ,(32) male ,twenty five for *Coronavirus* including (13) female, (10) male positive caseswith infected human patients of age ranged one month up to ninety five years of specimens .

q PCR Technique

This method was used to diagnose human *Coxsakievirus , Adenovirus B1,Coronavirus,* via (this primer was designed based on the NCBI , GoTaq® Green Mater Mix Kit (Cat,Lot.0234854645001, ,abm ,Canda). Viral DNA was extracted by using Viral Nucleic Acid Extraction Kit (gSYNC TM DNA extraction kit)(Geneaid, Lot No.FA30411-GS,USA) ;(TRIpure Total RNA Extraction Reagent, Lot No. T: 86-27-59760950, ELK Biotechnology, UK and European. All qPCR products were electrophoresed on agarose gel with red assay bromide and visualized under UV light. The technique was performed in the Faculty of Science graduate laboratory in the department of laboratory investigation by using (MULTI GENE OPTIMAX) device.

Table(1): Primer design of human *Coxsakievirus* , *Adenovirus B1*,*Coronavirus* depended to NCBI

Oligo\Name	Sequence	Bases	PCR product size
Coxsakievirus-F	5-TAATGCAGTGGCTGCTTGTC -3	20	234
Coxsakievirus-R	5-TCGCACCTGAAGGCTTAACT-3	20	
Adenovirus B1-F	5-TGCAACATCAGGTAGGGTCA-3	20	215
Adenovirus B1-R	5-TCGCACCTGAAGGCTTAACT-3	20	
S-spike *Coronavirus* - F	5-GAGGCGGAGGTACAAATTGA-3	20	138
S-spike *Coronavirus* -R	5-GTGGTAGCCCTTTCCACAAA-3	20	

Results:

Genetic   analytic method for diagnosis of *Coxsakievirus*,*Adenovirus B1*,*Coronavirus* through q- PCR

Three cases from positive (68) *Coxsakievirus , (63) Adenovirus*,(25) *Coronavirus* samples of collected serum of different hospitals were diagnosis by qPCR in figure 1
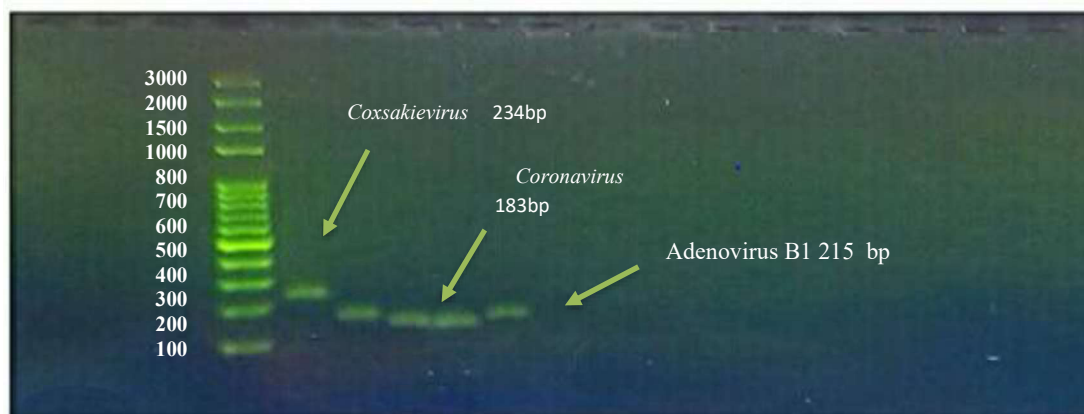
Figure 1: Diagnosis of Human *Coxsakievirus* by Quantitative Polymerase chain reaction (qPCR)   product size 234bp,*Adenovirus* product size 215bp and *Coronavirus* product size 138bp, 5 μl PCR Ladder was loaded on a 1.5 % agarose in 1x TBE and stained with red assay. dsDNA ladder with bands from 100 bp to 3.000 bp

DNA Sequencing Method:

Three samples were selected out of Coxsakievirus (68) case , Adenovirus B1(63) case, S-sipke Coronavirus (25) case positive for genetic   Sequencing. Conventional PCR products of positive were sent to Macrogen Company in Korea by (Alamin center for advanced research and biotechnology) for performing the DNA sequencing by (AB DNA sequencing system).

Local isolate No.	NCBI-BLAST Homology Sequence identity (%)

The DNA, RNA sequencing analysis for Coxsakievirus ,Adenovirus B1, Coronavirus genotyping The multiple alignment analysis was based on Clustal W alignment analysis, and NCBI-BLAST for the homology sequence identity. The NCBI-BLAST Homology Sequence identity (98.38-80%) between local human *Coxsakievirus , Adenovirus* B1and *Coronavirus* isolate and NCBI-BLAST submitted human *Coxsakievirus , Adenovirus* B1and *Coronavirus* isolate in table 2.

Table 2: The NCBI-BLAST Homology Sequence identity (98.38-80%) between local human *Coxsakievirus , Adenovirus* B1and *Coronavirus* isolate and NCBI-BLAST submitted human *Coxsakievirus , Adenovirus* B1and *Coronavirus* isolate

	NCBI-BLAST identical Genotypes	Genbank Accession number	Identity (%)
Human *Coxsakievirus* in Myocarditis isolate No.1	Homo sapiens chromosome 21 *Coxsackievirus* and *Adenovirus* receptor (CXADR) gene.	AH009718.2	98.38%
Human *Adenovirus* B1 in Myocarditis isolate No.2	Homo sapiens *Coxsackievirus* and *Adenovirus* receptor (CXADR) gene and ANA gene.	AF200465.1	95 %
Human s-spike *Coronavirus* in Myocarditis isolate No.3	spike protein Human *Coronavirus* NL63 .	HCNV63gp2	80%

DISCUSSION:

Diagnosis of human myocarditis the study is considered in Najaf Governorate and at the level of Iraq as well by designing primers depending on the Location "NCBI" by Quantitative Polymerase chain reaction (qPCR) technicality which resembled with . Imed *et al*.,2014 diagnosis of *Coxsakievirus* by Quantitative Polymerase chain reaction (qPCR) that corresponds to our study.   Neil *et al*.,2013 diagnosis of *Adenovirus* by Quantitative Polymerase chain reaction (qPCR)that also corresponds to our study. Evgeniya *et al*.,2022 diagnosis of *Coronavirus* by Quantitative Polymerase chain reaction (qPCR) that corresponds to our study. sanger sequencing of our study show identity (98.38-80%) between local human *Coxsakievirus, Adenovirus* B1and *Coronavirus* isolate and NCBI-BLAST submitted human *Coxsakievirus, Adenovirus* B1and *Coronavirus* isolate. 98.38% for *Coxsakievirus,95% for Adenovirus,80% for Coronavirus*. Imed *et al*.,2014 they were sequenced in forward and reverse directions with the respective PCR primers .The obtained enterovirus sequences were compared with the corresponding ones available in the GenBank using Basic Local Alignment Search Tool (BLAST) in order to identify the enterovirus type. Odalys et al.,2008 were diagnosis of *Adenovirus* by sequencing. Diego et al.,2021 diagnosis of *Coronavirus* by whole genome sequencing will us diagnosis by sanger sequencing.

According to his study Alameedy , 2021 most of the infections with the Coronavirus are common with respiratory viruses in different proportions, in addition to the fact that the age group (51-61) year is more infected, and (110) case of Influenza shares with the Coronavirus more infection and the results of Sanger sequences between(99.92 - 78 %) in

The samples of Adenovirus had been gathered of eye excretion of infected groups, this results complied by way of [6, 16] Most ages 16–30 years, further exposed to infection during the study showed to be reliance of age. A study showed (63.76%) of males were more influenced than females (36.23%) of Alameedy ,2016.

Conclusion :

According to our study, the ratio of the analysis of the genome bank was from (99.92 - 78 %)   to the study viruses diagnosed by patients with myocarditis through an examination PCR and only three samples were sent for different viruses and they were chosen depending on the concentration of the virus through our study in a previous research (Alameedy., *et al* 2022) where the virus was diagnosed through (RT-qPCR)The concentration of the virus was known in addition to gender and age, and we noticed the similarity ratios through genetic analysis on the (NCBI) where new primers were designed for the purpose of diagnosis.

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EVALUATION OF THE EFFECT OF DULOXETINE USE ON QUALITY OF LIFE AND NECK PAIN IN WOMEN WITH FIBROMYALGIA: A PILOT STUDY

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Abstract

Objective: Fibromyalgia is a disease characterized by widespread chronic musculoskeletal pain. In this study, we aimed to evaluate the effects of duloxetine use on neck pain and quality of life in female patients with fibromyalgia.

Material and method: Twenty duloxetine-naive female patients who applied to Adana City Training and Research Hospital physical medicine and rehabilitation outpatient clinics and were diagnosed with fibromyalgia were included. The Fibromyalgia Impact Questionnaire (FIQ), the Distress Tolerance Scale (DTS), the Solution Focused Inventory (SFI) and the Neck Bournemouth Questionnaire (NBQ) evaluated before and at the 3rd month after treatment.

Results: The mean age was 45.3 in 20 female patients with fibromyalgia aged 28-70 years. In our study, the FIQ, NBQ, and SFI pre-treatment and post-treatment 3 month values were 68.8 ± 16.9 vs. 25 ± 13.8, 40.8 ± 17.4 vs. 11.5 ± 12.3, and 40.1 ± 7.7 vs. 53.9 ± 7.7, respectively. When the patients' pre-treatment FIQ, NBQ and SFI values were compared with the 3rd month post-treatment values, a statistically significant decrease was found. The DTS scale was (27.2 ± 10.7) before the treatment, and it was (34 ± 14.2) at the 3rd month after the treatment. However, no significant difference was found between the patients' DTS scores before the treatment and at the 3rd month after the treatment.

Conclusion: Duloxetine treatment alleviates the course of the disease in fibromyalgia. It reduces the severity of neck pain, which is one of the accompanying symptoms, and improves the patient's analytical perspective in the face of problems. There is a need for studies involving more patients and evaluating long-term results.

Key words: Fibromyalgia, neck pain, duloxetine

Introduction

Fibromyalgia (FM) is characterized by chronic musculoskeletal pain. Muscle and joint stiffness, sleep disturbance, fatigue, mood disorder, cognitive dysfunction, anxiety, depression, general sensitivity and inability to perform normal daily activities are the main symptoms. FM affects approximately 5% of the world's population. It is 9-10 times more common in women than men. The most common age range is 30-35. Although the pathophysiology has not been fully explained, the main changes are disorders in the processing of pain in the brain, psychological problems associated with constant sensitivity to pain, increased levels of excitatory neurotransmitters such as glutamate and substance P

caused by dysfunctions in monoaminergic transmissions, and decreased levels of serotonin and norepinephrine at the level of anti-nociceptive pathways descending in the spinal cord. Other observed abnormalities include dopamine dysregulation, altered activity of endogenous cerebral opioids, neuroendocrine factors, genetic predisposition, oxidative stress, and environmental and psychosocial changes. Diagnosis; It is established by the 2016 American College of Rheumatology (ACR) diagnostic criteria (Siracusa et al, 2021). Fibromyalgia treatment focuses on managing symptoms, improving functionality and quality of life. Multimodal and personalized treatment is recommended. Patient education about diagnosis is important. Stress management, sleep hygiene, balanced diet, regular physical activity including aerobic exercise, weight loss and maintaining a generally healthy lifestyle are recommended. Pharmacological treatment should be added to the required patient. Recommended agents include tricyclic antidepressants, serotonin-norepinephrine reuptake inhibitors (duloxetine, milnacipran) and gabapentinoids (pregabalin and gabapentin) (Bair & Krebs, 2020). In a meta-analysis examining the use of duloxetine in 2642 FM patients, the duloxetine arm was found to be statistically significant in relieving pain compared to placebo. It has been interpreted as a very good choice in FM as a pain reliever (Lian et al, 2020).

Fibromyalgia treatment, which causes high rates of disability and job loss, is important. The rates of staying in treatment are in line with the benefit received. Therefore, studies evaluating the effectiveness of the given treatments are needed. In this study, it was aimed to evaluate the effect of duloxetine, which is one of the agents recommended in the treatment, on neck pain, stamina, and solution-oriented behavior in female patients.

Materials and methods

20 patients who were followed up with the diagnosis of fibromyalgia in Adana City Training and Research Hospital Physical Medicine and Rehabilitation Clinic were included in the study.

Inclusion criteria

1-To be diagnosed with FM according to the 2016 ACR diagnostic criteria

2-Using 30 mg duloxetine treatment for at least 3 months

Exclusion criteria

1- The age of <18 or >70

2- Having an autoimmune inflammatory disease (ankylosing spondylitis, autoimmune hepatitis, familial Mediterranean fever, rheumatoid arthritis, etc.)

3-Acute or chronic infections

4- Presence of malignancy

5-Having diabetes mellitus

6- History of steroid use in the last 3 months

7- Presence of cardiovascular disease (coronary artery disease, hypertension)

8-Major organ failure

9- Presence of psychiatric diseases and use of other antidepressant, psychotic, etc. drugs.

The fibromyalgia impact questionnaire consisting of 10 questions showing the level of fibromyalgia, the Neck Bournemouth Questionnaire consisting of 7 questions showing the level of neck pain and how the pain affects the person and a maximum of 70 points, the Distress Tolerance scale consisting of 15 questions (between 15-75 points) and the Solution

Focused Inventory (12 questions and between 12-72 points) were applied to the patients who met the study criteria. The Neck Bournemouth Questionnaire, the Turkish version of which was used in our study, was created by Bolton et al. in 2002 by revising the Bournemouth Low Back Pain Questionnaire. It is a questionnaire that questions pain intensity, daily social-functional level, anxiety-depression level, cognitive and behavioral aspects of fear-avoidance belief, and coping with pain (Bolton & Humphreys, 2002, Yılmaz et al, 2018). The patients were evaluated with the specified scales before the treatment and at the 3rd month after the treatment.

Statistical analysis

Statistically, in the analysis of the data, the number, percentage, average, Mann Whitney u, Kruskal Wallis test were analyzed in the IBM SPSS 22.0 program, and the values with $p < 0.05$ were considered significant.

Findings

The mean age of the patients was 45.3. Of the patients, 9 were working, 9 were not working, and 2 were retired. Considering the education levels, 6 of them were literate, primary or secondary school, 4 were high school, 7 were academy and 3 were university. While 50% of the patients had economic freedom, 50% did not.

When the fibromyalgia impact questionnaire, Neck Bournemouth Questionnaire and Solution focused inventory scores were compared before treatment and 3 months after treatment, a statistically significant difference was found. No significant difference was found between the pre-treatment and post-treatment 3 months in the Distress Tolerance Scale scores (Table 1).

Table 1. Comparison of patients' pre-treatment and post-treatment 3 month scales

	Mean±Std. deviation	Min-Max	p
Fibromyalgia impact questionnaire pretreatment	68.8±16.9	43.7-93.4	0.001
Fibromyalgia impact questionnaire post treatment	25±13.8	3.3-63.2	
Neck Bournemouth Questionnaire pretreatment	40.8±17.4	4-70	0.001
Neck Bournemouth Questionnaire post treatment	11.5±12.3	0-55	
The Distress Tolerance Scale pretreatment	27.2±10.7	15-49	0.086
The Distress Tolerance Scale post treatment	34±14.2	15-75	
The Solution Focused Inventory Scale pretreatment	40.1±7.7	25-52	0.001
The Solution Focused Inventory Scale post treatment	53.9±7.7	32-72	

Discussion

Fibromyalgia patients, whom we frequently encounter in the clinic, apply with different symptoms. In the treatment, the agent is selected according to the symptomatology of the

person. Duloxetine is a serotonin-norepinephrine reuptake inhibitor approved for the treatment of patients with fibromyalgia and is one of our frequently preferred agents in the clinic.

In a systematic review evaluating 9 studies, duloxetine was found to be effective in 77.8% and safe in 55.6%. The dose of duloxetine used in these studies ranged from 20 to 120 mg. The side effect profile was found to be around 17% (Rodrigues Amorim et al, 2020). The use of duloxetine 20-40 mg and mirtazapine 7.5 mg for longer than 6 months was compared in 81 patients with FM. Likert scale and revised fibromyalgia impact questionnaire were used as assessment scales. The mean age of the patients was 46.7 years. While 89.4% of the duloxetine group showed moderate to good improvement, this rate remained at 46.7% in the mirtazapine group. Side effects were reported in 77% of patients using duloxetine and in all patients using mirtazapine. In multivariate analysis, the use of duloxetine was associated with better subjective outcomes (Mehta et al, 2022). Treatments of 30-60 mg duloxetine and pregabalin 75-150 mg for 4 weeks were compared in patients with FM. The primary endpoint of the study was the generalized pain index and the Beck depression inventory-II. The secondary endpoint was the revised fibromyalgia impact questionnaire and the 12-item short form questionnaire. Among all indices, the widespread pain index gave significant results in favor of the duloxetine arm. This study showed a higher efficacy of duloxetine than pregabalin for the treatment of pain in patients with fibromyalgia (Bidari et al, 2019).

In our study, the fibromyalgia impact questionnaire, Neck Bournemouth Questionnaire, and solution focused inventory scale pre-treatment and post-treatment 3 month values were 68.8±16.9 vs. 25±13.8, 40.8±17.4 vs. 11.5±12.3, and 40.1±7.7 vs. 53.9±7.7, respectively. A statistically significant improvement was observed in these values. The distress tolerance scale was (27.2±10.7) before the treatment, and it was (34±14.2) at the 3rd month after the treatment. No significant improvement was observed between before and after treatment in terms of distress tolerance scale.

Conclusion and Recommendations

Fibromyalgia is a common pain syndrome that needs to be treated. It is a chronic process that reduces the patient's quality of life. Choosing the right agent in treatment is important. Duloxetine is an agent that can be safely selected in the right patient with proven efficacy. There is a need for studies that examine longer-term results with more patient participation in this regard.

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DOĞU CEZAYİR'DE MEME KANSERİ ARAŞTIRMASINDA İLK BULGULAR

INITIAL FINDINGS IN BREAST CANCER RESEARCH IN EASTERN ALGERIA

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ÖZET

Meme kanseri, dünya çapında ve Cezayir'de en sık teşhis edilen kanser ve ikinci ölüm nedenidir. Meme kanserinde farklı histolojik ve moleküler antiteleri ayırt edebiliriz. Bu çalışmanın amacı, 2018'den 2023'e kadar olan dönemde CLCC Batna merkezindeki meme kanserinin moleküler ve histolojik karakterizasyonunun ön sonuçlarını bildirmektir.

573 meme kanseri vakasının klinik ve patolojik özellikleri, CLCC Batna patoloji bölümünün arşivlerinden toplanmıştır. Özelliklerini analiz etmek için yaş, histolojik tip, SBR derecesi, hormon reseptör durumu, HER2 durumu dikkate alınmış ve moleküler fenotipler karşılaştırılmıştır.

Sonuçlar, seçilen popülasyonun ortalama yaşının 50 olduğunu ve 50 ila 59 yaş grubunun baskın olduğunu ortaya koydu. Luminal A, luminal B, TNBC ve HER2 meme kanseri alt tiplerinin oranları sırasıyla %23,4, %48,9, %17,3 ve %10,5 idi. İnvaziv duktal karsinom (IDC) en sık görülen histolojik tipti (%85,5), bunu invaziv lobüler karsinom (%9,4) takip etti.

SBR derece II, popülasyonda en yaygın olanıydı. Genç [40 - 49 yaş] ve orta yaşlı gruplarda [50 - 59 yaş] daha yüksek bir IDC frekansı fark ettik, ancak tüm IDC'ler Luminal B moleküler tipindeydi.

Sonuçlarımız ön hazırlık niteliğinde olsa da, bazıları Cezayir'deki diğer çalışmalarla uyumludur. Daha kapsamlı bir moleküler ve immünohistolojik karakterizasyon devam etmektedir.

Anahtar kelimeler: Meme Kanseri, Histolojik tip, submoleküler tip, Aures bölgesi, immünohistokimya

ABSTRACT

Breast cancer is the most frequently diagnosed cancer and the second cause of death worldwide and in Algeria. We can distinguish different histological and molecular entities in breast cancer. The objective of this work is to report the preliminary results of a molecular and histological characterization of breast cancer in CLCC Batna center during the period from 2018 to 2023.

Clinical and pathological characteristics of 573 breast cancer cases were collected from the archives of the pathology department of CLCC Batna. To analyze their characteristics, age, histological type, SBR grade, hormone receptor status, HER2 status were taken in account, and molecular phenotypes were compared.

The results revealed that the mean age of the selected population is 50 years with a predominance of the age group 50 to 59 years. The proportions of luminal A, luminal B, TNBC and HER2 breast cancer subtypes were 23.4%, 48,9%, 17.3% and 10.5%, respectively. The invasive ductal carcinoma (IDC) was the most common histological type (85.5%) followed by the invasive lobular carcinoma (9.4%).

The SBR grade II was the most common in the population. We noticed a higher frequency of IDC in the young [40 - 49 y] and middle aged groups [50 -59   y], while all the IDC were of Luminal B molecular type.

Although our results are preliminary, some of them are concordant with other Algerian studies. A more extended molecular and immunohistological characterization is ongoing.

Key words: Breast Cancer**,** Histological type, sub-molecular type, Estern region, immunohistochemistry

FUCOIDAN-BASED nanomaterials AND THEIR BIOMEDICAL FUNCTIONS

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ABSTRACT

During the past years, the biological activities of seaweeds have always been of interest due to the presence of their unique functional compounds compared to terrestrial plants. Several structures of fucoidan have been found, and their biological activities have been determined. Fucoidan is a type of polysaccharide that contains a significant percentage of fucose-L and sulfate groups. Fucoidan has various biological activities such as antibacterial, antiviral, antitumor, antioxidant, and anticoagulant activities. Fucoidans have very diverse chemical compositions and structures, which are determined by the extraction process, and are significantly dependent on geographic location, species, season, and population age, and can affect the structure of fucoidans. Moreover, the review addresses the challenges and future perspectives in the field of fucoidan-based nanomaterials. It discusses the considerations related to biocompatibility, stability, targeted delivery, and regulatory aspects for successful translation from laboratory research to clinical applications. Additionally, potential avenues for further research, including the combination of fucoidan-based nanomaterials with other therapeutic agents, optimization of physicochemical properties, and exploring novel applications, are highlighted.

The integration of fucoidan's bioactive properties with the unique characteristics of nanomaterials offers new possibilities for advanced therapeutics, diagnostics, and tissue engineering. Continued research and development in this field are expected to pave the way for innovative solutions in the

biomedical field, addressing unmet clinical needs and improving human health. This review focuses on the fundamental knowledge and current development of, fucoidan-based composite material for bioactive coatings and films, and their biological properties.

Keywords: Fucoidan, bioactive, nanomaterial, Nano capsules, nanofibers, nanocomposites, biomedical functions, drug delivery.

OBESITY DURING PREGNANCY AND MIDWIFERY CARE

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Abstract

Obesity is a serious health problem that is becoming increasingly common. There are many women with a high body mass index (BMI) around the world. Obesity is considered as a public health problem today. According to the World Health Organization, obesity is described as a global epidemic that is more common in women than men. About 18% of women of reproductive age are obese at initiating pregnancy. Obesity during pregnancy completely affects the life of the woman and increases the risk of maternal and fetal complications. Obesity in pregnancy is associated with gestational diabetes, gestational hypertension, preeclampsia, difficult birth, cesarean delivery, fetal macrosomia, congenital anomaly, prematurity, stillbirth, postpartum embolism, bleeding, infection, anemia, childhood obesity. In addition, more than half of women with maternal death during pregnancy, childbirth and postpartum period are obese. Therefore, preconceptional care in obese pregnants is more important than in normal weight pregnant women. Fighting maternal obesity requires a multidisciplinary approach. Midwives, who play an active role during pregnancy and are a part of the professional health care team, should provide the necessary care and consultancy services for ideal weight control during pregnancy, starting from the preconceptional period. The aim of this review is to present the effects of obesity on maternal and fetal health during pregnancy and the importance of midwifery care in pregnancy in the light of the literature.

Keywords: Pregnancy, obesity, midwifery care

1. Introduction

According to the World Health Organization (WHO), obesity is a chronic disease that is defined as "abnormal or excessive fat accumulation that poses a risk to health", and is caused by the daily energy intake being higher than the energy expended (WHO, 2016; Şengönül ve ark. 2019; Blüher, 2020).

Evaluation of obesity is done by looking at the body mass index (BMI = Weight [kg] / Height [m2]). If BMI is >30, the individual is considered obese. The number of individuals aged 18 years and over who are above normal weight worldwide is 1.9 billion; It is estimated that the number of adult overweight and obese individuals is more than 650 million. In Turkey, the obesity rate was found to be 21.1% according to the 2019 Turkish Statistical Institute (TUIK) data (TUIK, 2020; WHO, 2020; Yalvaç & Toker, 2021). Obesity causes many health problems. Mostly obesity is an important risk factor for the development of metabolic syndrome, cardiovascular diseases, and type 2 diabetes mellitus (Can & Şahin, 2018).

While many environmental, genetic, biochemical, socio-economic, socio-cultural and psychological factors are involved in its etiology, malnutrition and sedentary life are among the most important causes (Kurt et al. 2019). Obesity brings many negative consequences, especially pregnancy, in women (Kurt et al. 2019). In addition, it was found that obesity increases the risk of ovarian cancer by 1.4 times in women, as well as increases the estrogen level and hyperinsulinemia is associated with endometrial cancer (Kurt et al. 2019). Maternal and fetal complications related to obesity are quite common. Gestational diabetes, preeclampsia, hypertension and depression are more common in pregnant women with obesity than in normal weight pregnant women. Obesity can also cause macrosomia, shoulder dystocia and cesarean delivery. Women with obesity are at higher risk of wound infection. Maternal obesity can also cause preterm birth, fetal defects, congenital anomalies and perinatal death. However, obesity also negatively affects the breastfeeding process. Women with obesity have lower rates of initiation of breastfeeding compared to women of normal weight, and the risk of stopping breastfeeding early is higher. As a result, the hospital stay of women may also be prolonged. Childhood obesity is also common in children born to obese pregnancies (Marchi et al, 2015; McDowell et al, 2018).

2.Materials and Methods:

In this review, studies on pregnancy obesity and midwifery care are discussed and examined.

3.Findings and Discussion

Weight Gain During Pregnancy

The pregnancy period, which has an important place in the life cycle of women, is a natural process in which many metabolic and physiological changes occur. These metabolic changes increase the risk of obesity for women (Can & Şahin, 2018).

In the USA and Europe, the rate of gaining more weight than recommended during pregnancy is 20-40%. Abnormal weight gain during pregnancy results in maternal and fetal complications (Duman & Bayram, 2018). Factors such as maternal age, parity status, socioeconomic status, physical activity status, and pre-pregnancy weight status are among the causes of weight gain during pregnancy (Yalvaç & Toker, 2021).

Table 1: Total weight gains and rates of weight gain recommended for women with singleton pregnancies

Prepregnancy weight status (body mass index category)	Recommended total weight gain ranges		Recommended rates of weight gain in the second and third trimester*	
	Pounds	Kilograms	Pounds/week	Kilograms/week
Underweight (<18.5 kg/m²)	28–40	12.5–18	1.0 (1.0–1.3)	0.51 (0.44–0.58)
Normal (18.5–24.9 kg/m²)	25–35	11.5–16	1.0 (0.8–1.0)	0.42 (0.35–0.50)
Overweight (25–29.9 kg/m²)	15–25	7–11.5	0.6 (0.5–0.7)	0.28 (0.23–0.33)
Obese (≥30 kg/m²)	11–20	5–9	0.5 (0.4–0.6)	0.22 (0.17–0.27)

References: Institute of Medicine. Weight Gain During Pregnancy: Reexamining the Guidelines. Washington, DC: National Academies Press, 2009; Herring et al, 2011.

The recommended pregnancy weight gain rates according to the US Institute of Medicine (IOM) are shown in table 1.

Complications in Obese Pregnant Women

Abortion Risk: Studies have found that obesity increases the risk of spontaneous abortion (Lashen et al, 2004; Wang et al. 2023).

Thromboembolism: The risk of thrombosis increases during pregnancy. The risk of thromboembolism increases 4-5 times during pregnancy. In the postpartum period, obese women have an increased risk of venous thromboembolism, depression and breastfeeding problems. Weight gain in the postpartum period increases future cardiometabolic risks and obesity in the preconceptional period in subsequent pregnancies (Lim et al, 2015; Duman & Bayram, 2018; Ersoy et al.2021).

Cesarean Delivery (C/S): Insulin resistance increases in obese women during early pregnancy. Therefore, it causes glucose intolerance and fetal overgrowth during late pregnancy. Large fetus causes cesarean delivery and wound complications (Ersoy et al.2021). More than half of women who die during pregnancy, during childbirth and after birth are overweight or obese (Duman & Bayram, 2018).

Gestational Diabetes (GDM): Diabetes is expected to develop in 40-60% of obese individuals (Karslıoğlu, 2019). For every 1 kg/m2 increase in BMI, the risk of gestational diabetes mellitus increases by 0.92%. The reason for the increase in gestational diabetes mellitus is the increase in insulin resistance (Kara & Üstün, 2017).

Preeclampsia: With every 5-7 kg/m2 increase in BMI, the risk of preeclampsia doubles (Kara & Üstün, 2017).

Hypertensive Disorders: Obese women have an increased risk of HELLP syndrome (preeclampsia, eclampsia, low platelet levels, hemolysis, elevated liver enzymes) (Davias et al, 2010).

Shoulder Dystocia and Macrosomia: Babies of obese mothers are more prone to macrosomia. Macrosomia is also among the risk factors for shoulder dystocia. Obesity also negatively affects the lactation process. Lactation starts later in obese mothers (Duman & Bayram, 2018; Bilgin, 2020).

Preterm Action: Studies in the literature have shown that obesity causes an increase in the risk of preterm labor and stillbirth (Poston et al, 2016; Baran et al, 2022).

Congenital Anomaly Risk: Neural tube defects and structural cardiac anomaly risk are seen more frequently in fetuses of obese mothers. In particular, obesity increases the incidence of neural tube defects approximately 2 times (Bilgin, 2020).

Obesity and Midwifery Care in the Preconceptional Period

Preventing the development of the disease in obesity is more important than treating it, because it is a much more difficult and costly process to treat (Can & Şahin, 2018; Kurt et al. 2019).

Obesity management requires a multidisciplinary team, starting from the preconceptional period. Especially midwives, who are part of the professional health team, are of great importance in this context. In this process, it is necessary to meet the medical, physical and psychosocial counseling needs of women. In the pre-pregnancy period, information should be given about the importance of lifestyle changes, nutritional control, the benefits of healthy weight loss, and exercise support. In addition, to prevent neural tube defects, information should be given about foods rich in folic acid, and daily 5 mg folic acid supplementation should be recommended. It should be said that they should start folic acid supplementation at least 3 months before pregnancy and it is recommended to continue until 10-12 weeks of pregnancy (Lee & Koren, 2010; Bilgin, 2020).

Prenatal diagnosis evaluation of obese pregnants is very important, ultrasound (USG) evaluation and glucose tolerance test should be performed at early gestational week. The oral glucose tolerance test should be repeated between 24-28 weeks if necessary. Since obesity causes cesarean delivery, it should be evaluated in terms of anesthesia in this preconceptional period (RANZCOG,2017; Bilgin, 2020). In addition, pre-pregnancy bariatric surgery can be recommended for morbidly obese individuals (Dodd & Briley, 2017).

Obesity and Midwifery Care During Pregnancy

Obesity in pregnancy brings with it some physiological changes. The increase in cardiac output may be much more severe in obese pregnant women. Similarly, the severity of cardiac hypertrophy and myocardial dilatation also increases. In addition, gastric reflux can be seen with an increase in intra-abdominal pressure. This problem can cause disturbances in the gastrointestinal system. Lumbar lordosis and rectus abdominus, which are physiological conditions during pregnancy, are more common in obese pregnant women. Back and leg pain complaints are more common in obese pregnant women and varicose veins may develop. The incidence of urinary tract infections and pyelonephritis is higher in obese pregnant women (Demirer & Yardimci, 2020; Yalvaç & Toker, 2021).

Therefore, midwifery care is very important in this process. During this period, the nutritional habits of obese pregnant women should be questioned by midwives, and counseling should be given on adequate and balanced nutrition in cooperation with a dietitian. It is inconvenient for them to be included in the weight loss program after 16 weeks of pregnancy with an uncontrolled diet. Complications can be prevented by conducting weight control of obese pregnants under the leadership of a midwife (Demirer & Yardimci, 2020; Yalvaç & Toker, 2021).

4. Conclusion and Recommendations

Midwives, who are part of the professional health team, should provide the necessary counseling service for the woman's normal weight gain starting from the preconceptional period in order to prevent or minimize maternal and fetal complications of obesity. In each follow-up, a weight record should be created and weight changes should be followed during pregnancy. Weight loss during pregnancy is inconvenient and should not be recommended to pregnant women. Pregnant women should be informed about appropriate physical activity, and excessive

weight gain should be prevented by providing counseling on adequate and balanced nutrition. Due to the risk of congenital anomaly before 3 months of pregnancy, counter folic acid supplementation should be provided. Glucose tolerance test should be done in these pregnant women in the early period of pregnancy in terms of gestational diabetes. Obese pregnant women should be informed about the complications they will encounter during pregnancy, childbirth and postpartum period, and necessary psychological support should be provided. During delivery, the mother should be followed closely, and attention should be paid to the risks of wound infection, bleeding and embolism, which are more common in obese pregnant women. In the postpartum period, the mother should also be supported in breastfeeding. (Yalvaç & Toker, 2021).

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SYMPTOMS EXPERIENCED AND ANALGESIC USE BEHAVIORS OF WOMEN IN THE MESTRUAL PERIOD

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Abstract

The study was conducted to evaluate the symptom burden and analgesic use behavior of women during menstruation. The descriptive study included 407 women in the study. Data were collected with an introductory information form, the Daily Menstrual Symptom Assessment Scale, and the analgesic use behavior form. According to the Daily Menstrual Symptom Assessment Scale, it was determined that women experienced the most symptoms of back pain, irritability, and breast swelling-tenderness. It was stated that 66.6% of the women experienced pain during the menstrual period and 43.2% of them stated that their daily life was affected due to menstrual pain. 52.6% of the women used analgesics in their last three menstrual periods, 65% of the analgesic users used analgesics once a day and 26.2% twice a day, 60.3% of them used paracetamol group and 39.7% of them used nonsteroidal anti-inflammatory derivative drugs during their menstrual period. It was determined that only 18.2% of them used the analgesic they used during the menstrual period at the recommendation of the physician. In addition, the rate of women using analgesics was found to be statistically higher in women who experienced pain during the menstrual period and whose daily life was affected due to pain (p<0.05). However, it was determined that 25% of the women who did not experience pain and 30.7% of the women who stated that their daily life was not affected due to pain during the menstrual period used analgesics. In the study, it was determined that more than half of the women experienced pain during the menstrual period and half of them used analgesics in the last three menstrual periods. In order to protect and improve women's health, it is recommended that nurses, midwives and physicians raise women's awareness about coping with symptoms in the menstrual period and direct them to rational analgesic use.

Keywords: Menstruation, analgesic, female

1. Introduction

In order for the reproductive functions of women to continue normally, it is expected that there will be some changes in the reproductive organs that continue from menarche to menopause and will be seen regularly every month. All of these changes are called the menstrual cycle (Sönmez, Çapık, & Akkaş, 2019). Menstruation is a normal physiological process that shows the woman's fertility ability (Derya, Erdemoğlu, & Özşahin, 2019). However, during this period, women may experience some symptoms that affect their daily living activities (Boyacıoğlu, Gökdemir, & Özcan, 2021). These symptoms include physical symptoms such as breast swelling, headache, dizziness, nausea, vomiting, acne, pain and fatigue in the groin, and psychological symptoms such as anxiety, depression, restlessness, nervousness, and tension (Derya, Erdemoğlu, & Özşahin, 2019).

Dysmenorrhea, defined as painful menstruation in women, is a common health problem that reduces the quality of life of women (Yılmaz, Nuraliyeva, & Dinç, 2020). Dysmenorrhea is

defined as recurrent cramp-like suprapubic pelvic pain that begins with or just before menstruation in patients without any pelvic pathology (Akduman & Budur, 2016). The economic burden of dysmenorrhea on the health system is also quite high. Depending on its severity, dysmenorrhea can prevent women from working, school and other daily activities (Guvenc, Seven, & Akyüz, 2014). Painful menstruation alone is not enough to diagnose dysmenorrhea. Pain should interfere with the patient's daily activities and the patient needs medication. The effect of pain on daily activities and productivity here causes a decrease in work performance in working women and absenteeism in women who are receiving education (Kocataş et al., 2017). The main goal in the approach to dysmenorrhea is to provide adequate relief from the pain of the patients. It has been reported in the literature that coping methods such as exercising, applying heat to the abdomen and groin area, hot showers and resting are effective in reducing dysmenorrhea (Oskay et al., 2008). In the absence of improvement in the symptoms of the woman, the pharmacological approach to be applied is determined according to the individual needs of the patient. In this regard, analgesics containing nonsteroidal anti-inflammatory (NSAID) properties are often recommended. NSAIDs are thought to reduce pain in dysmenorrhea by decreasing endometrial prostaglandin production. It is also stated that it can reduce pain by directly affecting the central nervous system (Akduman & Budur, 2016). However, although there are results in the literature that NSAIDs are more effective, it is stated that paracetamol is safer and combined with other drugs or adjuvant substances is one of the treatment options (Kocataş et al., 2017).

In the use of analgesic drugs, it is necessary to comply with the principles of rational drug use, especially in order to prevent usage errors in individual applications (Öztürk, 2019). Because, in terms of public health, drugs are substances that should be given to people from all income groups without delay, when necessary, and that may have significant risk potential as well as preventive and therapeutic effects. In order to talk about rational drug use, it is necessary to administer the right drug with the right indication, to the right patient, at the appropriate dose and time, after adequate information, and to carry out the necessary monitoring and evaluations (Bilgili & Karatay, 2005). Today, analgesic group drugs are defined as "over-the-counter" in many countries, and their misuse and abuse is increasing because they are sold without a prescription. Although these drugs are sold without a prescription, they also contain very serious side effects. In this context, the importance of complying with the principles of rational drug use in the use of analgesic derivatives has become more evident. The unconscious use of analgesics not only relieves the pain from time to time, but also masks the symptoms of the existing pathology in some cases and even causes the disease to become fatal (Holloway & van Dijk, 2011; Öztürk, 2019).

Health personnel, especially physicians, pharmacists and nurses, have important duties in ensuring the rational use of drugs (Bilgili & Karatay, 2005). In women, dysmenorrhea, which is common during menstruation, etc. Analgesic use may be frequent and erroneous due to symptoms. It is thought that this study will contribute to health professionals and the literature in order to shed light on the application of analgesic derivative drugs used during menstruation in women in line with rational drug use.

2. Materials and Methods

Purpose and type of study

The study was conducted as a descriptive study in order to evaluate the symptom burden and analgesic use behaviors experienced by women during menstruation.

Population and sample of the study

The universe of the research; It consisted of women who applied to primary health care services in Sivas province between 01 May - 30 June 2023 for reasons such as vaccination and receiving health services. No sample selection was made in the study. In this context, 407 women who were literate, between the ages of 18-49, in the reproductive period, who were not pregnant or had amenorrhea for at least six months, were not in menopause, had no verbal communication barriers, and agreed to participate in the study were included.

Data collection tools

Data were collected with an introductory information form, the Daily Menstrual Symptom Assessment Scale, and the analgesic use behavior form. The introductory information form includes 11 questions that include the personal characteristics of women (age, marital status, education status, employment status, etc.) and six questions that include menstruation-specific characteristics (age of menarche, menstrual day, etc.).

The Daily Menstrual Symptom Assessment Scale was developed by Jenni W. Taylor (1979) to assess the symptoms that occur during menstruation and the intensity of symptoms. The Turkish validity and reliability of the scale were performed by Oskay et al. (2008). The intensity of each symptom is scored between 0 and 5 on a 17-symptom scale. An increase in score indicates an increased intensity of symptoms. In the study of Oskay et al. (2008), the Cronbach alpha value of the scale was found to be 0.88. In this study, the Cronbach's alpha value of the scale was found to be 0.85.

The analgesic use behavior form, on the other hand, includes four questions questioning the analgesic status used during menstruation.

Data Collection

The data were collected by face-to-face interviews with women and in accordance with privacy. Women who were able to fill in the data forms were filled in themselves. Before the study, the researcher gave verbal information to the women about the research and obtained their verbal and written consent. In addition, weight and height were measured with a weighing instrument calibrated by the researchers, and body mass index (BMI) was calculated according to the kg/m^2 formula. It took approximately 20-25 minutes to administer the questionnaires and make the measurements.

Evaluation of Data

The data were analyzed in SPSS 22.0 program. Percentage, mean, and chi-square tests were used for statistical evaluation. Statistical significance was evaluated as $p<0.05$.

3. Findings

The mean age of the women was 25.18±5.59 (min=18, max=47) years and 74.2% of them were married. 61.2% of the women are university graduates, 28.7% of them are working in any job that generates income, and 61.9% of them stated that their income is equal to their expenses. 15.7% of the participants are still smokers. 19.2% of the women had at least one chronic disease diagnosed by a physician, and 51.6% evaluated their general health status as good and 42.8% as moderate. The average BMI value of the participants was 22.76±4.12 kg/m2, and 24.7% were normal weight, 26.1% were overweight and obese.

It was determined that 5.2% of women were 9-10 years old and 15% were 15-16 years old at menarche, 66.6% stated that they experienced pain during menstruation and 43.2% stated that their daily life was affected due to menstrual pain (Table 1).

Table 1. Socio-demographic and menstruation-related characteristics of women (N=407)

Characteristics	n	%
Age (year) (Mean±SD)	25.18±5.59	
Body structure according to BMI value		
Weak	54	13.3
Normal weight	247	60.7
Overweight	87	21.3
Obese	19	4.7
Presence of chronic disease		
Yes	78	19.2
No	329	80.8
Age at menarche (years)		
9-10 age	21	5.2
11-14 age	325	79.8
15-16 age	61	15.0
Period of menstruation (day) (Mean±SD)	5.98±1.40	
Menstrual period (day) (Mean±SD)	28.54±3.53	
The state of experiencing pain during menstruation		
Yes	271	66.6
No	136	33.4
Presence of dysmenorrhea in mother, sister or older sister		
Yes	282	69.3
No	125	30.7
Affecting daily life due to menstrual pain		
Yes	176	43.2
No	231	56.8
General health assessment		
Good	210	51.6
Moderate	174	42.8
Bad	23	5.7

According to the Daily Menstrual Symptom Assessment Scale, it was determined that women experienced the most symptoms of back pain (2.76±1.84), irritability (2.62±1.71), and breast swelling and tenderness (2.60±1.72) (Table 2).

Table 2. Women's Daily Menstrual Symptom Assessment Scale mean score

Complaints	Mean±SD
Hopelessness	2.07±1.71
Depression	2.25±1.76
Lack of activity	1.92±1.58
Introversion	1.81±1.57
Tension	2.50±1.82
Get angry easily	2.62±1.71
Proneness to argument	2.38±1.84
Don't be cheerful	1.70±1.54
Don't be friendly	1.86±1.84
Don't be energetic	1.33±1.40
Breast swelling-tenderness	2.60±1.72
Swelling in the abdomen	2.22±1.87
Swelling of the face/ankles	0.98±1.49

Pain in the hip-abdominal	2.75±1.82
Back pain	2.76±1.84
Headache	2.31±1.85
Tiredness	2.98±1.66

Half of the women (52.6%) stated that they used analgesics in their last three menstrual periods, and 65% of the analgesic users stated that they took analgesics once a day and 26.2% twice a day. 60.3% of the women stated that they used paracetamol group and 39.7% of them used nonsteroidal anti-inflammatory derivative drugs during their menstrual period. Only 18.2% of the women stated that they used the analgesic they used during the menstrual period at the recommendation of the physician (Table 3).

Table 3. Characteristics of women regarding their analgesic use behaviors

Characteristics	n	%
Analgesic use in the last three menstrual periods		
Yes	214	52.6
No	193	47.4
Number of analgesic drugs used per day (n=214)		
One	139	65.0
Two pieces	56	26.2
Three pieces	19	8.9
Type of analgesic used (n=214)		
Paracetamol derivative drugs	129	60.3
Nonsteroid-derived drugs	85	39.7
The state of using the analgesia used according to the physician's recommendation (n=214)		
Yes	39	18.2
No	175	81.8

There was a statistically significant difference between women's pain during menstruation and their daily age, and their analgesic taking behaviors ($p<0.01$). The rate of women using analgesics is higher in women experiencing menstrual pain. However, 25% of the women who did not experience pain stated that they used analgesics. Similarly, the proportion of women using analgesics is higher in women whose daily life is affected by menstrual pain. In addition, it was determined that 30.7% of women who stated that they did not affect their daily life due to menstrual pain used analgesics (Table 4).

Table 4. Comparison of women's experience of pain during menstruation and the effects of my daily life and analgesic taking behaviors

Variables		Analgesic use status		χ^2, p
		Yes n (%)	**No** n (%)	
The state of experiencing pain during menstruation	Yes	180 (66.4)	91(33.6)	62.311; p<0.01
	No	34 (25.0)	102 (75.0)	
Affecting daily life due to menstrual pain	Yes	143 (81.3)	33 (18.8)	102.229; p<0.01
	No	71 (30.7)	160 (69.3)	

4. Discussion

In order to minimize the physical, psychological and social effects of menstruation-related symptoms in women, these symptoms should be determined first (Sönmez, Çapık, & Akkaş, 2019). This study was conducted to evaluate the symptom burden and analgesic use behavior of women during menstruation.

In the study, it was determined that women experienced the most symptoms of back pain, irritability, swelling and tenderness in the breast during the menstrual period. In another study, the most common complaints were found to be bloating in the abdomen, pain in the hips and abdomen, swelling and tenderness in the breast, irritability, and tension, respectively (Oskay et al., 2008). In the study of Daşıkan, Taş, and Sözen (2014), it was determined that women experienced the most complaints of tension (76.6%), pain and tenderness in the breasts (74.4%), abdominal pain-cramps (76.6%), back pain (73.3%). The study finding is consistent with the literature.

In the study, more than half of the women (66.6%) stated that they experienced pain during menstruation and 43.2% stated that their daily life was affected due to menstrual pain. In a population-based study conducted by Patel et al. (2006) on 2,262 women, it was determined that more than half of the participants experienced dysmenorrhea. In a study conducted with university students, it was stated that almost all of the participants (96.3%) experienced dysmenorrhea during the menstrual period, and especially 35.8% of them suffered from dysmenorrhea severely (Karout, 2018). In another study, the frequency of dysmenorrhea in women was found to be 81.8% (Oskay et al., 2008). The study finding, which is compatible with the literature, shows that dysmenorrhea is common in women.

In the study, it was determined that half of the women (52.6%) used analgesics in their last three menstrual periods, and the rate of women using analgesics was higher in women who experienced menstrual pain and in women who stated that their daily life was affected due to pain. In another study, it was determined that 51% of women with dysmenorrhea used analgesic drugs to cope with dysmenorrhea, and the rate of drug use increased significantly as the severity of pain increased (Yılmaz, Nuraliyeva, & Dinç, 2020). Similarly, in a study conducted with students, it was determined that 53.4% of the participants used analgesics to relieve menstrual pain (Oskay et al, 2008). In the study of Oskay and Şahin (2004), the rate of analgesic drug use was reported as 59.5%. In Taşcı's (2006) study, it was determined that as the severity of symptoms increased, actions such as not being able to perform daily activities, consulting a doctor and using medication increased. The study finding, which is compatible with the literature, shows that women prefer the use of analgesic drugs more to cope with pain in the menstrual period. By supporting non-pharmacological methods to be used to reduce dysmenorrhea pain, women's need for analgesic use can be reduced (Yılmaz, Nuraliyeva, & Dinç, 2020).

With the awareness of rational drug use, it is aimed to prevent physiological, biological and psychological harms that may occur in patients and to minimize the economic burden arising from wrong drug use (Tosun & Hoşgör, 2021). In the study, it was determined that 60.3% of women used paracetamol group and 39.7% of them used nonsteroidal anti-inflammatory derivative drugs during menstruation. In a Cochrane systematic review evaluating seventy-three randomized studies, NSAIDs were shown to be more effective than placebo and paracetamol (Marjoribanks et al., 2010). Ali et al, (2007) concluded in their study that paracetamol and the combination of paracetamol and caffeine when taken at recommended doses are both a safe and effective treatment in the treatment of primary dysmenorrhea. Appropriateness of the doctor's recommendation is important for the rational use of analgesics.

After the correct diagnosis of women, the use of analgesics in accordance with the doctor's recommendation should be ensured.

In the study, it was determined that 25% of women who did not experience pain during the menstrual period and 30.7% of women who stated that their daily life was not affected due to pain used analgesics. This finding shows that the use of analgesics is not conscious. Incorrect use of analgesics causes the use of multiple drugs, the addition of drugs that are not suitable for diagnosis, or the use of drugs that are not suitable for the patients themselves. To prevent unnecessary use of analgesics, fundamentally changing patients' beliefs about analgesic use is a key factor. It is important to conduct public health education in this regard (Altaş & Eser, 2017; Blamey, 2009; Hussain et al., 2002).

In the study, it was stated that only 18.2% of the women used the analgesic they used during the menstrual period at the recommendation of the physician. There is no similar study in the literature. However, in a study conducted with individuals aged 18 and over who were registered to the family health center unit, it was found that only 24.7% of the participants had a disease that required analgesic use and was diagnosed by a doctor, while 25.1% of them did not know any of the possible side effects. In the same study, it was found that 41.4% of the participants used analgesics without a doctor's recommendation, 42.7% thought that it was appropriate to take over-the-counter pain relievers, the frequency of analgesic use was not different between genders, however, the frequency of analgesic use increased as the education level decreased and age increased (Öztürk, 2019).

5. Conclusion and Recommendations

In the study, it was determined that more than half of the women experienced pain during the menstrual period and half of them used analgesics in the last three menstrual periods. In addition, the rate of women using analgesics was found to be higher in women who experienced pain during the menstrual period and whose daily life was affected due to pain, and it was determined that approximately one-fourth of women who did not experience pain and one-third of women who stated that their daily life was not affected due to pain during the menstrual period used analgesics. This study is an important study in order to guide women to cope with menstrual pain correctly. In line with the findings, it is recommended that nurses, midwives and physicians raise women's awareness about coping with symptoms in the menstrual period and direct them to rational analgesic use in order to protect and improve women's health.

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THE RELATIONSHIP WITH THE QUALITY OF SEXUAL LIFE OF CONTRACEPTION METHOD PREFERRED BY WOMEN IN THE REPRODUCTIVE PERIOD

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Abstract

The study was carried out to determine the relationship between the contraception method preferred by women in the reproductive period and the quality of sexual life. A total of 196 women were included in the descriptive and relationship-seeking study. Data were collected with the information form and Sexual Life Quality Scale-Women (SLQS-W). The mean age of the women was 34.08±7.70 years and the number of pregnancies in 54.1%, the number of births in 32.1% and the number of living children in 29.6% were three or more. It was determined that women mostly preferred condoms (35.7%), withdrawal (24.0%) and oral contraceptives (15.8%) as contraception methods. 56.1% of the women stated that the rate of protection against pregnancy of the method they used was 51-90. 31.1% of the women stated that they preferred the method they used because of the request of their spouse, 22.4% because of the suggestion of the health personnel and 21.4% because of their own preference. 45.4% of women are satisfied with the contraception method they use. The total mean score of the women's SLQS-W is 76.82±17.67, and the quality of sexual life is partially at a good level. Women who use the contraceptive method as an injection, indicate the percentage of protection against pregnancy between 90 and 99, are very satisfied with the contraceptive method they use, and receive information from health professionals about the contraception method used, have a higher level of sexual life quality (p<0.05). It is recommended to provide counseling services about contraception methods in order to increase women's sexual life quality.

Keywords: Reproduction, contraception, sexual quality of life, female

1. Introduction

Contraception methods used to prevent pregnancy contribute positively to maternal and child health by preventing sexually transmitted diseases, unwanted pregnancies and excessive fertility, increase the quality of life, and therefore play a role in increasing the health level of the society (Bilgin & Kesgin, 2020; Cetişli et al., 2016; Temel & Özsoy, 2022). Contraception can protect women's health with its effects such as deciding on the number and timing of the child she will have, taking responsibility for her fertility, preventing the interruption or interruption of education and social life due to unplanned pregnancies (Gölbaşı, Erenel, & Turan, 2017).

Today, modern methods; tubligation, vasectomy, intrauterine device, oral contraceptives are more effective, traditional methods; Condom, diaphragm, calendar method, emergency contraception drug, withdrawal (coitus interruptus), spermicide foam are known as less effective contraception. In Turkey, women's use of effective methods is not at the desired level, despite the free service and easy accessibility (Oltuluoğlu & Başer, 2012). In a large-scale study conducted with women of reproductive age in Turkey, it was determined that the use of contraception decreased from 74% to 70%, and withdrawal was the most preferred method (Hacettepe University Institute of Population Studies, 2018). The factors that affect couples' use of modern or traditional contraception methods are the reliability of the method, side

effects, reusability, hormonal content, the choice of the spouse, the level of knowledge about the method, the health and beliefs of the woman (Gabalci & Terzioglu, 2010; Pinar et al., 2019).

Beginning in the prenatal period and continuing throughout life, ethical, cultural, moral, etc. Since sexuality, which is a purely sensory experience in which many factors play a role, aims at reproduction, sexual pleasure and giving, it includes not only the genitals but also the whole body and mind (Temel & Özsoy, 2022). Sexual health, on the other hand, is a state of complete physical, mental and social well-being of sexuality (Vural & Gönenç, 2011). Sexual life is affected by many factors such as internal and external stimuli, hormones, biological, psychological, social and individual factors. One of the factors affecting the sexual life and quality of life of women is the use of contraceptive methods (Pinar et al., 2019).

Contraception methods used by women of reproductive age can have positive or negative effects on the sexual lives of couples (Vural & Gönenç, 2011). In particular, reducing the fear of pregnancy is important in increasing the quality of sexual life (Akkar et al, 2015). With the use of effective contraception methods, the problems related to the fear of becoming pregnant are reduced and a satisfying sexual life is provided (Akalın & Bostancı, 2022; Leon-Larios & Macías-Seda, 2017; Oskay & Dissiz, 2017). However, if she thinks that the contraceptive method used by women has an effect on her pleasure, sexual desire, body, genitals, mood, personality and physical appearance, she may stop using that contraceptive method. This situation can negatively affect sexual life with the fear of becoming pregnant (Temel & Özsoy, 2022).

In order for couples to increase their sexual life quality, they should be aware of the effects of the contraception method they use on their sexual life (Gabalci & Terzioglu, 2010). Unfortunately, sexuality and contraception are seen as taboo in Turkish society and are among the difficult topics to talk about (Akalın & Bostancı, 2022). This situation is also neglected by health professionals (Gölbaşı, Erenel, & Turan, 2017). However, it is important for health professionals to provide counseling for women to talk about their sexual lives and to decide on contraception methods together with their husbands, and the effects of contraception methods on sexual life should be taken into account during the decision-making process (Akalın & Bostancı, 2022; Temel & Özsoy, 2022).

2. Materials and Methods

Purpose and type of study

The study was carried out in a descriptive design to determine the relationship between the contraception method preferred by women in the reproductive period and the quality of sexual life.

Population and sample of the study

The universe of the research; women who applied to a family health center for reasons such as health check-up and vaccination. The sample is those who applied to a family health center between March-June 2023 for reasons such as health check-up and vaccination, were between the ages of 18-49, were in the reproductive period, had an active sexual life, had no pregnancy, had not been diagnosed with infertility before, agreed to participate in the study, had a verbal communication disability. and 196 non-menopausal women were included.

Data collection tools

Data were collected with an introductory information form and Sexual Life Quality Scale - Women. The introductory information form consists of three parts. In the first part, 12 questions about women's socio-demographic characteristics (age, education, status, employment status, etc.), in the second part, 8 questions about women's obstetric history (number of pregnancies,

number of births, number of abortions, etc.) and in the last part, women's use of contraception. There are 5 questions that contain data about (contraception method used, reason for choosing contraception method, satisfaction status, etc.).

Sexual Life Quality Scale – Female (SLQS-F), Symonds et al. (2005) with the aim of evaluating the quality of sexual life in the last four weeks. The Turkish validity and reliability of the scale was performed by Tuğut and Gölbaşı (2010). The scale includes 18 items and is graded in a 6-point Likert type. Items 1, 5, 9, 13, 18 are reverse coded in the scale, and items in the scale are scored between 0 and 5. The lowest 0 and the highest 90 points are taken from the scale. The total score obtained is converted to 100. An increase in the score obtained from the scale indicates that the quality of sexual life of the woman is good (Tugut & Gölbaşı, 2010). In this study, the Cronbach's alpha coefficient of the scale was found to be 0.91.

Data Collection

The data were collected in a confidential area. Data forms were filled by women. Before the study, the researcher gave verbal information to the women about the research and obtained their verbal and written consent. In addition, weight and height were measured with a weighing instrument calibrated by the researchers, and body mass index (BMI) was calculated according to the kg/m2 formula. It took approximately 20-25 minutes to administer the questionnaires and make the measurements.

Evaluation of Data

The data were analyzed in SPSS 23.0 program. Percentage, mean, student t test, Kruskal-Wallis test were used for statistical evaluation. Statistical significance was evaluated as $p<0.05$.

3. Findings

The mean age of the women was 34.08±7.70 (min=19, max=49) years, 32.7% of them were university graduates and 25.5% of them were primary school graduates, 35.2% of them were working in any income-generating job and 61.2% of them stated that their income was equal to their expenses. stated. 13.8% of the participants still smoke, 29.6% have a chronic disease, 35.7% evaluate the general health status as good and 60.2% moderate. The mean BMI value of the women was 26.66±4.23 kg/m2, and 35.7% of them were normal weight, 42.9% were overweight and 21.4% were obese.

Total of the participants 54.1% were pregnant, 32.1% were born, and 29.6% had three or more children. Of the women, 43.4% had a history of abortion, and it was determined that 5.5% of the first gestational age was under the age of 18, 26.7% was between the ages of 26-39, and 29.1% were planning to become pregnant in the future (Table 1).

Table 1. Distribution of obstetric characteristics of women (N=196)

Characteristic	n	%
Number of pregnancies		
0	13	6.6
1 or 2	77	39.3
3 and above	106	54.1
Number of births		
0	19	9.7
1 or 2	114	58.2
3 and above	63	32.1
Number of stillbirths		
0	157	80.1

1	33	16.8
2	6	3.1
Number of involuntary/spontaneous abortions		
0	111	56.5
1	65	33.2
2	18	9.2
3	2	1.1
Number of living children		
0	16	8.2
1 or 2	122	62.2
3 and above	58	29.6
First gestational age		
Under 18 years old	10	5.5
18-25 years old	124	67.8
26-39 age	49	26.7
The state of planning to become pregnant in the future		
Yes	57	29.1
No	139	70.9

It was determined that women mostly preferred condom (35.7%), withdrawal (24.0%) and oral contraceptive (15.8%) as contraception methods. 56.1% of the participants stated that the rate of protection against pregnancy of the method they used was 51-90. 31.1% of the women stated that they preferred the method they used because of the request of their spouse, 22.4% because of the suggestion of the health personnel and 21.4% because of their own preference, and 45.4% were satisfied with the contraception method they used (Table 2).

The total mean score of women's SLQS-F is 76.82±17.67, and when the range of possible scores is evaluated, it can be said that their sexual life quality levels are partially good.

Table 2. Characteristics of women regarding contraception use (N=196)

Characteristic	n	%
Contraception method used		
Condom	70	35.7
Withdrawal	47	24.0
Oral contraceptive	31	15.8
Intrauterine device	26	13.3
Tubing	13	6.6
Calendar method	5	2.6
Monthly/quarterly needle	4	2.0
Percentage of the method used to protect against pregnancy		
0	10	5.1
1-50	43	21.9
51-90	110	56.1
91-99	19	9.8
100	14	7.1
Reason for preference of contraception method used		
Spouse request	61	31.1
Suggestion of health personnel	44	22.4
Own choice	42	21.4

Environmental advice	29	14.8
Few side effects	10	5.1
Being easily accessible	7	3.6
Being on a budget	3	1.6
Satisfaction with the contraception method used		
Very pleased	89	45.4
Somewhat satisfied	93	47.4
Not glad	14	7.2
The status of getting information from health professionals about the contraception method used		
Yes	104	53.1
No	92	46.9

It was found that there is a statistically significant relationship between the contraception method used in the study, the percentage of protection against pregnancy, the satisfaction with the method, and the status of getting information from the health professionals about the method and the total mean score of SLQS-F ($p<0.01$). Accordingly, it was determined that women who used the contraceptive method as an injection, stated the percentage of protection against pregnancy between 90 and 99, were very satisfied with the contraceptive method they used, and received information from health professionals about the contraceptive method used, had a higher level of sexual life quality (Table 3).

Table 3. Comparison of the mean score of the Sexual Life Quality Scale according to the contraception method used by women

Özellikler	X̄±SS	Test, p
Contraception method used		
Condom	80.42±18.09	
Withdrawal	76.30±20.39	
Oral contraceptive	76.74±11.54	
Intrauterine device	69.18±14.13	KW= 14.336; **p=0.014**[*]
Tubing	74.26±21.59	
Calendar method	76.24±16.05	
Monthly/quarterly needle	86.10±9.58	
Percentage of the method used to protect against pregnancy		
0	56.67±23.58	
1-50	73.70±20.51	
51-90	77.87±15.71	KW= 12.356; **p=0.015**[*]
91-99	87.31±15.16	
100	80.25±16.58	
Satisfaction with the contraception method used		
Very pleased	79.39±13.57	KW= 19.449; **p=0.000**[*]
Somewhat satisfied	78.13±18.77	
Not glad	53.65±16.62	
The status of getting information from health professionals about the contraception method used		
Yes	80.39±16.58	t=2.600; **p=0.010**[*]
No	73.92±18.01	

[*]$p<0.05$

4. Discussion

Today, the effects of contraception methods on the sexual lives of couples, especially women, are among the frequently researched subjects (Cetişli et al, 2016). This study was carried out to determine the relationship between the contraception method preferred by women in the reproductive period and the quality of sexual life.

In developed or developing countries, the use of traditional methods (withdrawal, condoms, etc.) is more common due to reasons such as individual preference, socio-economic status, education level, being religiously accepted and not requiring any cost (Türk & Terzioğlu, 2012). In the study, it was determined that women mostly used condoms (35.7%), withdrawal (24.0%) and oral contraceptives (15.8%) as contraception methods. In the studies, it is seen that women withdraw from traditional contraception family planning methods and use condoms more frequently (Akalın & Bostancı, 2022; Bilgin & Kesgin, 2020; Cetişli et al., 2016), while modern methods include intrauterine device (IUD), hormonal contraceptives (oral contraceptives and injections) and tubing (Bilgin and Kesgin, 2020; Cetişli et al., 2016; Pinar et al., 2019). In the study of Gölbaşı, Erenel, and Turan (2017), withdrawal (30%), intrauterine device (27%) and tubing (16.7%) are in the top three ranks among the methods used by women. Although the most known methods by women in Turkey are the IUD and oral contraceptives, it is emphasized that the most preferred method is the traditional withdrawal method (Bilgin & Kesgin, 2020). The study findings show that women mostly prefer to use traditional methods.

Revealing the reasons why women prefer the contraception methods they use will guide health professionals in planning contraception services (Akalın & Bostancı, 2022). In the study, 31.1% of the women stated that they preferred the contraception method because of the request of their spouse, 22.4% because of the suggestion of the health personnel and 21.4% because of their own preference. In the study of Akalın and Bostancı (2022), it was determined that women mostly preferred the contraception method because it was safe (64.3%), ease of use, and the preference of the spouse. In a study conducted with married women, it was determined that women were satisfied with the withdrawal method and preferred it because of their desire for a partner, finding the method safe and easy to use (Çetişli et al., 2016). Although our research findings are consistent with the results of studies on the reasons for preference in women using contraception, in our study, 56.1% of women stated that the method they use protects against pregnancy as 51-90. This finding in our study shows that women do not trust the method they use enough, but still continue to use it.

Satisfaction with the contraception method is important for continued use (Cetişli et al., 2016; Pinar et al., 2019). In the study, 45.4% of the women stated that they were satisfied with the contraception method they used. In another study, it was found that 22% of women had problems using a contraception method and 39% had side effects (Pinar et al., 2019). On the other hand, in the study of Gölbaşı, Erenel, and Turan (2017), it was stated that 90.3% of women had no complaints about the method used. In another study, it was found that 77.2% of women using modern contraception methods and 71.1% of those using traditional methods were satisfied with the contraception method they used (Cetişli et al., 2016). The findings of the study differ regarding the satisfaction rates with the contraception method, and this is thought to be due to factors related to the modern or traditional contraception method and its correct use.

Contraception methods used by women of reproductive age can affect their sexual lives (Vural & Gönenç, 2011). In the study, it was determined that the total mean score of women's SLQS-S was 76.82±17.67, and their sexual life quality levels were partially good according to the range of scores that could be obtained from the scale. In another study, the mean SLQS-Q score of women was 84.33±19.21, and their sexual quality of life was reported to be moderately high

(Akalın & Bostancı, 2022). It is thought that conducting the study with healthy and reproductive women has an effect on the level of sexual life quality.

The type of contraception used by women can affect their sexuality (Huang et al., 2020; Temel & Özsoy, 2022) and their marital satisfaction (Temel & Özsoy, 2022). In the study, it was determined that women using the injection contraceptive method had a higher level of sexual life quality. In another study, the level of sexual life quality of those who used modern contraception methods was found to be higher than those who used traditional methods (Akalın & Bostancı, 2022). In another study, it was determined that the sexual functions of women using modern family planning methods were better than those using traditional family planning methods, and the sexual response was strong, easy and satisfying (Cetişli et al., 2016). In addition, in other studies, it was determined that traditional contraception methods negatively affect sexual functions or sexual life quality (Asadi Sarvestani & Khoo, 2019; Cetişli et al., 2016; Kaplan &Zeyneloğlu, 2018; Leon-Larios & Macías-Seda, 2017; Oskay & Dissiz, 2017; Tadayon, Honarjoo, & Abbaspoor, 2016). On the other hand, in a study conducted with Iranian women, it was pointed out that the least sexual dysfunction was in the condom use method, and the most in the vasectomy method (Fataneh et al., 2013). In addition, it has been emphasized in the literature that oral contraceptives cause depressive mood and irritability by reducing sexual desire and sexual activity levels by affecting hormones, and the use of IUDs causes irritation in men (Casey et al., 2017; Oskay & Dissiz, 2016; Smith et al., 2014; Pinar et al., 2019). However, in the studies of Pinar et al. (2019) and Gabalci and Terzioglu (2010), no significant difference was found between the contraceptive methods used and the quality of sexual life. In the study of Gölbaşı, Erenel, and Turan (2017), it was stated that the method used by 94.6% of women did not affect their sexual life in any way, however, sexual dysfunction was significantly higher in women who had tubeligation compared to those who used other methods. It is thought that these differences in the study findings are due to the effect on the level of sexuality and marital satisfaction, depending on the type of contraception method used by women, effective protection, duration and correct use.

The quality of sexual life of women who are satisfied with the contraception method they use is also high (Akalın & Bostancı, 2022). It was determined that women who were very satisfied with the contraceptive method they used in the study had a higher level of sexual life quality. Similarly, in the study of Akalın and Bostancı (2022), it was found that those who were satisfied with the contraception method they used had a higher quality of sexual life. Our study finding is compatible with the literature. This finding shows that it is necessary to choose the contraceptive method that women can primarily be satisfied with.

5. Conclusion and Recommendations

In line with the findings obtained in the study, it was determined that women mostly preferred traditional contraceptive methods, although nearly half of them were satisfied with the contraception method they used. In addition, women's sexual life quality is partially at a good level; It has been found that there is a relationship between the contraception method used, the percentage of protection against pregnancy, the satisfaction with the method, and the quality of sexual life. In order to increase women's sexual life quality, counseling services should be provided about contraception methods. For this reason, it is important for healthcare professionals to have a very good knowledge of contraceptive methods and to raise awareness of women about the use of modern contraceptive methods.

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EFFECT OF COVID-19 DISEASE ON PHYSIOLOGICAL PARAMETERS, ANXIETY AND SLEEP QUALITY IN PREGNANT WOMEN

EVALUATION OF SLEEP AND ANXIETY IN COVID 19 POSITIVE PREGNANTS

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ABSTRACT

Stress experienced during pregnancy is known to cause various psychiatric problems such as depression and anxiety disorder. To the best of our knowledge, there is no study with pregnant women in which effects of stress due to Covid-19 on their sleep quality and physiological conditions was evaluated. In this study, we aimed to investigate these effects. The study was carried out with 150 pregnant women who were hospitalized in clinics of obstetrics (covid negative) and covid (covid positive). The study was carried out between August 2021 and January 2022. Demographic and physiological data, anamnesis, and laboratory test results were collected. In addition to these, BECK Anxiety scale and Richard-Campbell Sleep scale questionnaires were filled out by participants. A significant increase in Covid positive group was found when total anxiety levels were compared among two groups ($p < 0.01$). A significant decrease on Richard-Campbell Sleep Scale scores were found in Covid positive group ($p < 0.01$) compared to that of Covid negative group. Anxiety level of pregnant women in the third trimester was found significantly higher than others. Our findings revealed that pregnant women diagnosed with Covid-19 have elevated anxiety levels, deprecated sleep quality scores compared to those of Covid-19 negatives.

Keywords: Covid-19, Anxiety, Sleep Quality.

1.Introductıon

 Covid -19 is a disease that first appeared in Wuhan, China in December 2019 and rapidly affected the whole world. It was declared as a global epidemic (pandemic) by the World Health Organization on March 11, 2020, due to its fast spread in a short time (Umakanthan et al., 2020).

Covid-19 is a disease that can be transmitted from person to person in many ways such as infection by personal contact, cough, sneezing, etc. through droplets from the oral mucosa and eye mucosa (Umakanthan et al., 2020).

Covid-19 disease is a disease that affects mental health of individuals negatively due to its fatal effect and its high mortality rate. It can cause various psychiatric problems such as panic disorder, stress, anxiety and obsessive compulsive disorder (Hamza Shuja, Aqeel, Jaffar, & Ahmed, 2020).

In individuals affected by Covid 19; It has been reported that psychiatric diseases such as depression, anxiety disorder, stress, panic attacks, sleep disorders and suicidal behavior are vast. For this reason, it is believed seen that Covid 19 epidemic has brought with itself a new epidemic of psychiatric diseases throughout the world. During the pandemic, it became a striking topic in public health, protecting individuals from mental illnesses and reduce psychological effects of Covid-19. For this reason, it is very important for states to take necessary precautions and to provide relevant psychiatric support widely to the society (Mahbub et al., 2020).

Stress has both beneficial and harmful effects on human body. Moderate stress maintains the homeostasis of cells in human body. However, due to human physiology, harmful effects of stress are encountered in many cases. As a result of negative effects of stress on the human body, various pathological conditions and disorders occur. Stress is the basis of many known disorders today. Length and severity of stress experienced by people also directly affect the course of illness (Yaribeygi, Panahi, Sahraei, Johnston, & Sahebkar, 2017).

It is known that Covid 19 epidemic causes various mental problems such as stress, anxiety, worry and anxiety in people. In addition to all these, recent studies have reported that Covid 19 epidemic causes oxidative stress (Suhail et al., 2020).

Oxidative stress negatively affects the structure and functioning of cells. It is known that oxidative stress causes various changes on physiological parameters (Gharibi, Khanjani, Heidari, Ebrahimi, & Hosseinabadi, 2020).

For this reason, it is thought that stress and anxiety experienced during Covid-19 epidemic also negatively affect physiological parameters. Pregnancy period is an important process that should be maintained under very optimum conditions. Physiological and psychological changes experienced during pregnancy affect health of the pregnant woman negatively. Stress experienced during pregnancy brings with it many negativities. Changes in plasma glucose level, sleep disturbances, blood pressure changes and the risk of preterm birth can be counted among these negativities (Horsch et al., 2016; (Sancini et al., 2017)Ahmed et al., 2019; Sanchez et al., 2020; Bazalakova, 2017).

Stress experienced during pregnancy is also; Causes various psychiatric problems such as depression, anxiety disorder and suicidal ideation (Sanchez et al., 2020; Palagini et al., 2019). It is extremely important for the health of both mother and baby to keep stress under control due to negative effects we have mentioned. If the stress experienced during pregnancy cannot be kept under control, general health status of both the pregnant woman and the fetus will be adversely affected.

Due to the fact that mortality of Covid 19 disease is high especially in some periods of the pandemic and there is no known definitive treatment method, it causes stress, anxiety and various psychiatric problems in pregnant women. In pregnant women evaluated during the Covid 19 pandemic (covid negative pregnant), a significantly higher increase in stress, depression and anxiety data was detected compared to pregnant women evaluated before the epidemic (Berthelot et al., 2020; Wu et al., 2020). As a result of stress, depression and anxiety problems experienced during pregnancy; It has been shown that the risk of miscarriage, premature birth, low birth weight and fetal death may increase (Ayaz et al., 2020).

For this reason, it is very important to keep track of psychological state of pregnant women during the Covid 19 pandemic. It is foreseen that psychological and physiological health of both mother and fetus can be protected by monitoring psychological state of pregnant women.

When the relevant literature was examined, no study was found in which stress experienced by Covid 19 positive pregnant women and psychological and physiological states of this stress were evaluated together. Examining psychological and physiological parameters of Covid-positive pregnant women is of great importance for the protection and maintenance of health of both mother and baby.

For this reason, in our current study, the differences in psychological and physiological parameters of Covid positive pregnant women compared to Covid negative pregnant women were evaluated in detail.

2. Materials and Methods

Before the study; Necmettin Erbakan University Non-Pharmaceutical and Medical Device Research Local Ethics Committee's approval was obtained (Decision no: 2021/3287). The study was started after approval by the Republic of Turkey Ministry of Health-General Directorate of Health Services and Konya Provincial Health Directorate. During the study, the World Medical Association (WMA) HELSINKI Declaration and the World Psychiatric Association HAWAII Declaration of Good Clinical Practices were complied with.

The study was carried out with pregnant women who were hospitalized in Konya Dr. Ali Kemal Belviranlı Gynecology and Pediatrics Hospital. The study was carried out between August 2021 and January 2022.

A total of 150 pregnant women were included in the study. Care was taken to distribute trimesters of pregnant women included in the study equally. Informed consent was obtained from pregnant women who agreed to be included in the study demographic, physiological and psychological data were evaluated.

Group 1 (Control Group n=75): It consists of Covid negative pregnant women participants selected from usual obstetric service. Demographic data (age, education, occupation, addiction, etc.), anamnesis data (pregnancy history, covid history, length of hospitalization, reason for hospitalization, etc.), physiological data (blood pressure, pulse, fever, SpO2) and laboratory blood analysis results (HGB, HCT, Iron, Ferritin, WBC, CRP, RBC, Glucose) were taken. In addition to these data, the BECK Anxiety Scale and the Richard-Campbel Sleep Scale were applied.

Group 2 (Covid Positive Group n=75): It consists of Covid positive pregnant women from Covid service. Demographic data (age, education, occupation, addiction, etc.), anamnesis data

(pregnancy history, covid history, length of hospitalization, reason for hospitalization, etc.), physiological data (blood pressure, pulse, fever, SpO2) and laboratory blood analysis results (HGB, HCT, Iron, Ferritin, WBC, CRP, RBC, Glucose) were taken. In addition to these data, the BECK Anxiety Scale and the Richard-Campbell Sleep Scale were applied.

In the Beck Anxiety Scale, level of anxiety is evaluated by three factors. These are; physical markers, emotional markers and somatic markers. Physical markers; fainting, shakiness, trembling in hands, sweating, flushing of face, heart palpitations and difficulty in breathing were asked to the participants. In emotional markers; Questions of fear of death, fear of very bad things happening, fear of being afraid, feeling like drowning, irritability and fear of losing control were directed to the participants. Finally, for somatic markers, the participants were asked; dizziness or dizziness, inability to relax, terrified, weakness in legs, numbness in the body, indigestion in the stomach, fear of losing balance and hot flashes.

The Beck Anxiety Scale was created by Beck et al. It is a self-assessment scale used to determine the frequency of anxiety symptoms that people experience. It consists of 21 items, it is a likert-type scale scored between 0-3. 0=It shows that there is no anxiety, 1=The presence of mild anxiety, 2=Moderate anxiety, 3=The presence of severe anxiety.

The Richard-Campbell Sleep Scale is a scale that aims to evaluate the sleep processes and sleep quality of individuals. The scale consists of a total of 6 questions. Each question is evaluated on a chart between 0 and 100 points through the visual analogue technique. The scores given on the scale for each question on the scale are evaluated as 0=bad, 1=normal, 2=good. It is evaluated that sleep quality increases as the score level taken from the scale increases, and sleep quality decreases as the score level decreases.

In statistical evaluation; Average, standard deviation, frequency and percentage statistics were given for numerical and nominal variables. Chi-square test was used in the analysis of nominal variables. In the analysis of numerical variables, independent T-test and one-way ANOVA methods were used. Analyzes were made with the Jamovi 2.3.2 program. A p value <0.05 was considered significant.

3.Findings and Discussion

In this study 150 pregnant women; 75 of them were diagnosed with Covid-19 PCR test and 75 admitted to the normal pregnant service with a negative PCR test result. Of participants; 20% were primary school graduates, 59.3% were high school graduates, and 20.7% were undergraduate or graduates; It was determined that 79.3% of them were not employed and 20.7% of them were employed. Participants; 84.7% have a nuclear family structure and 15.3% have an extended family structure; 22.7% of the pregnants had a history of abortion or stillbirth in the past, and 15.3% of the pregnants had a chronic disease (Table 1).

Table 1: Demographic ınformation table of participants

Demographic Information	N	%
Education		
Primary School	30	20
High School	88	59.3
Undergraduate and Master Degree	32	20.7
Family Structure		
Nuclear Family	127	84.7
Extended Family	23	15.3
Abortion/ Stillbirth	34	22.7

Chronic Disease	23	15.3
Trimester		
1.Trimester	11	7.3
2.Trimester	24	16.0
3.Trimester	115	76.7

It was determined that 7.3% of the pregnants who participated in the study were in the 1st trimester of pregnancy, 16.0% in the 2nd trimester and 76.7% in the 3rd trimester (Table 1).

Overall a statistically significant increase was found when total anxiety level of the patient group and total anxiety level of the control group were compared (p<0.01). (Table 2), (Figure 1).

Table 2: Beck Anxiety Scale statistical table of the participants

Anxiety Levels	Covid(+), Patient Group		Covid (-), Control Group		p
	N	%	n	%	
0	10	13.3	45	60.8	<. 001
1	33	44.0	29	39.2	
2	24	32.0	0	0.0	
3	8	10.7	0	0.0	
Total	75	100.0	74	100.0	
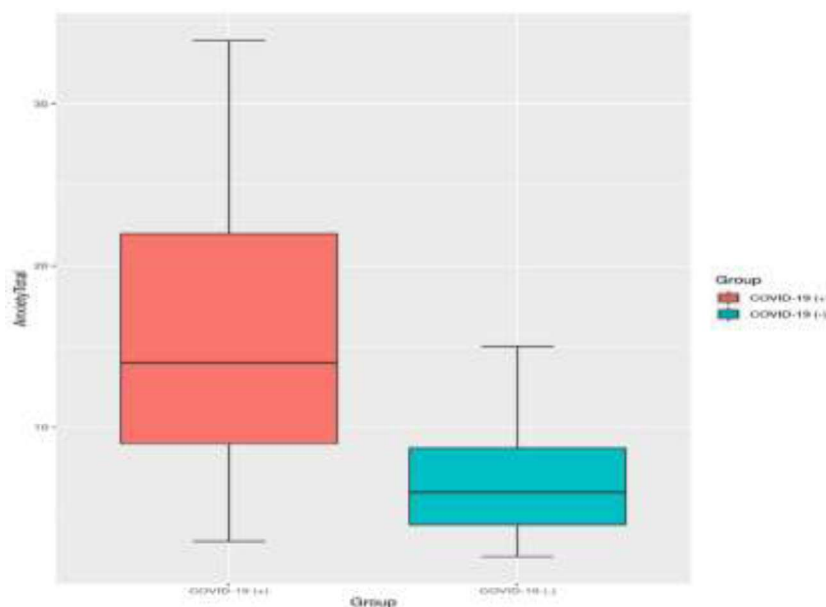
Figure 1: Beck anxiety scale graphic

No significant difference of anxiety scores and sleep quality were obtained among educational status categories of the participants (p=0.80, p=0.9). Likewise anxiety scores and sleep quality levels of participants with a history of abortion or stillbirth were not found different compared to those without (p=0.25, p=0.68).

There were significant differences between trimesters and anxiety scores and sleep quality of both groups (p<0.01, each). Number of children a patient has, HCT and HGB levels were not

found different (p=0.31, p=0.98, p=0.49 respectively) whereas serum ferritin, CRP and WBC levels were found elevated in patient group (p<0.001, each) (Table 3, Table 4, Figure 2).

Table 3: Table of trimesters, number of children and laboratory values of teh participants.

	PARTICIPANTS	PERCENTIES				p
		SD	MEAN	25	75	
NUMBER OF CHILD	COVID (+) GROUP	1.13	1.21	0.00	2.00	0.310
	COVID (-) GROUP	1.11	1.03	0.00	2.00	
TRIMESTER	COVID (+) GROUP	8.46	29.83	26.00	36.00	<.001
	COVID (-) GROUP	5.34	33.96	33.00	38.00	
FERRITIN	COVID (+) GROUP	31.39	41.93	15.60	66.85	<.001
	COVID (-) GROUP	23.36	64.44	58.95	80.85	
C- REACTIVE PROTEIN (CRP)	COVID (+) GROUP	29.98	27.58	8.50	33.00	<.001
	COVID (-) GROUP	6.83	11.58	6.00	16.00	
HEMOGLOBİN (HGB)	COVID (+) GROUP	1.52	12.04	10.70	13.10	0.978
	COVID (-) GROUP	1.38	12.05	11.20	13.30	
HEMATOCRIT (HCT)	COVID (+) GROUP	3.97	36.20	33.65	38.70	0.490
	COVID (-) GROUP	3.55	36.70	36.70	39.15	
WHITE BLOOD CELL (WBC)	COVID (+) GROUP	3.24	7.98	5.70	10.02	<.001
	COVID (-) GROUP	2.43	10.77	9.00	12.50	

Table 4: Statistical Table of Richard-Campbell Sleep Scale of the participants

Sleep Levels	Covid (+), Patient		Covid (-), Control		p
	n	%	n	%	
0	6	8	0	0	<.001
1	69	92	48	64.9	
2	0	0	26	35.1	
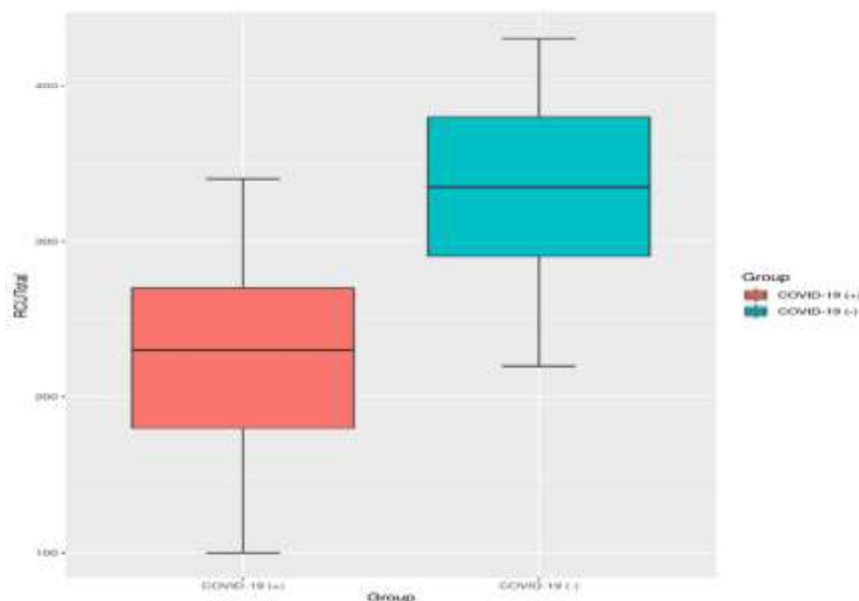
Figure 2: Richard Campbell Sleep Scale data graphıc

Generally, survey research has shown that Cronbach's Alpha Value higher than 0.7 is important for reliability of the study. In this study, Cronback Alpha Value was found to be 0.91 in Beck Anxiety Scale. In the Richard-Campbell Sleep Scale, Cronbach's Alpha Value was found to be 0.95. These data show that the study is reliable.

One of the periods in which a woman is sensitive and emotional in her life is undoubtedly the pregnancy period. Stress experienced in this period can also cause many negative situations. It has been shown that it may cause premature birth and miscarriage (Mah et al., 2019). For this reason, keeping stress and anxiety levels controlled during pregnancy is very important for mother-baby health. Unknown short and long term negative effects of Covid-19 on babies boosts stress and anxiety experienced by a pregnant woman (Effati-Daryani et al., 2020). In the Covid-19 pandemic, many researches have been carried out on the stress and anxiety levels of pregnant women. It has been reported that pregnant women have high stress and anxiety levels due to covid-19 pandemic and therefore have a great risk for depression and anxiety disorder (Lebel, MacKinnon, Bagshawe, Tomfohr-Madsen, & Giesbrecht, 2020; Stepowicz, Wencka, Bieńkiewicz, Horzelski, & Grzesiak, 2020). It has been shown that women's sleep quality is affected by the pregnancy process (Sedov, Cameron, Madigan, & Tomfohr-Madsen, 2018). Especially in the 3rd trimester period, impaired sleep quality is quite common in pregnant women (Kim, Cho, & Bae, 2020; Zhu, Shi, Park, & Reutrakul, 2020). This situation is sometimes caused by back and low back pain experienced while sometimes stress experienced (Zhu et al., 2020). Deterioration in sleep quality predisposes to anxiety disorder and depression in pregnant women (Ahmed et al., 2019). For this reason, experts have stated that small decreases in sleep quality during pregnancy can be considered normal, but intervention may be necessary in case of high deterioration in sleep quality (Sedov et al., 2018).

The effect of quarantine period during the covid-19 pandemic on level of anxiety on pregnant women was examined by Dagklis et al. (Dagklis, Tsakiridis, Mamopoulos, Athanasiadis, & Papazisis, 2020). According to the results of survey in which 146 pregnants in Greece participated, 53.4% of the pregnants had anxiety.

No significant relationship was found between the participants' trimester and their anxiety status . In contrast to Dagklis et al., in our study, Covid-19 status of pregnant women was also

examined. Since it includes those diagnosed with Covid-19, this research differs from Dagklis et al. (Dagklis et al., 2020).

Before the Covid-19 pandemic, anxiety status in pregnant women was investigated. In a study conducted by Dağlar and Nur in 2014, 227 participants consisting of pregnant women at 35th week of pregnancy and above, that is, in the third trimester, were included. Depression and anxiety levels were investigated. It was concluded that anxiety and depression levels of the pregnants were affected by their employment status, education level, socioeconomic level and having chronic diseases (Dağlar & Nur, 2014).

Before the Covid-19 pandemic, in a study by Çelik and Köse, the relationship between trimester and sleep quality was investigated with 152 pregnant participants. Pittsburg sleep quality questionnaire was utilised. It was determined that sleep disorders were more common in uncomplicated third trimester pregnancies. Other studies conducted in non-pregnant population reported that sleep disorders are associated with obesity, coronary artery disease, diabetes and hypertension (Çelik & Mesut, 2017). Inclusion of pregnant women diagnosed with covid-19 in our study shed a different light to the scientific literature.

4.Conclusion and Recommendations

Prenatal care includes not only providing information and physical care to pregnant women, but also roles and procedures of observation, support, help, continuing education and counseling. Our findings show that anxiety levels increase in all trimesters of pregnant women diagnosed with covid-19. sleep quality decreases, and therefore quality of life drops. Anxiety symptoms during pregnancy and sleep disorders should be taken into serious consideration and should not be overlooked. Our study resulted that anxiety is frequent among Covid-19 positive pregnant women and sleep quality is worse.

Health workers should carefully follow both psychological and physiological symptoms and changes in pregnant women to reduce the extent of possible further complications.

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MIDWIFE-LED CONTINUITY OF CARE: LITERATURE REVIEW

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Abstract
Continuous care under the leadership of the midwife; ensures that the woman receives care from a known and reliable midwife during her pregnancy, birth, and postpartum journey of parenthood. In addition, midwife-led care supports women to have a healthy pregnancy and a positive birth experience. This review, it is aimed to give information about midwife-led care in line with the literature. Continuing midwife-led care contributes to positive health outcomes for the mother and newborn and less intervention during delivery. When midwife-led continuous care models are compared with standard care models, it has been reported that there is less intervention in labor, pharmacological agents are used less, and spontaneous vaginal delivery rates are higher in midwife-led care.

There is a need for more studies in the literature on the effects of midwife-led continuous care models on the long-term health and well-being of mothers and baby after birth. Carrying out studies on care models under the leadership of midwives in Turkey; can contribute to improving the quality of the midwifery profession, emphasizing the value of midwives, and developing evidence-based midwife-led care programs.
Keywords: Midwifery, Care, Pregnancy, Birth, Care Model

1. Introduction

Midwife-led continuing care (MLCC) is defined as care in which the midwife is the leading professional in the planning, organization, and delivery of care given to women from the prenatal period to the postpartum period (RCOG 2001). In midwife-led care models, the midwife is the professional responsible for assessing the needs of the woman, planning her care, referring her to other professionals in risky situations, and providing maternity services by working in partnership with the woman (Sandall et al., 2016; Okumuş, 2016). Midwife-led continuous care models aim to provide care to healthy women with uncomplicated or low-risk pregnancies in community or hospital settings (Sandall et al., 2016; Okumuş, 2016). MLCC is female-centered, emphasizing the normality and continuity of care provided (Sandall et al., 2016). Where MLCC is fully developed, a single midwife guides to ensure continuity of care throughout pregnancy, delivery, and the postpartum period. The woman is cared for by a known and reliable midwife during and immediately after birth who provides individualized training and counseling to the woman (Sandal, 2016; Hatem et al., 2008).

More than 300,000 women die each year from preventable causes related to pregnancy and childbirth, with 99% of them occurring in low- and middle-income countries (Miller, 2016). WHO has recommended interventions that scale midwifery and facilitate continuity in care to foster respectful relationships in maternal care (WHO, 2016). For this reason, in 2016, the World Health Organization recommended the use of MLCC models in which a known midwife supports a woman throughout pregnancy, delivery, and the postpartum period in environments

where there are midwife training programs that can train midwives (Sandall et al ., 2016, WHO, 2016). Continuing care given at birth under the leadership of midwives is a basic component of midwifery care for both childbearing and midwives (Kennedy et al., 2003; Sandal et al., 2016; Forster et al., 2016). This care leads to more positive health outcomes for the mother and newborn, as well as less intervention during delivery (Kennedy et al., 2004). Studies have reported that fewer painkillers are used in care services led by midwives, the time to start breastfeeding increases, episiotomy rates decrease, spontaneous vaginal delivery rates increase, and women have a higher sense of control and satisfaction at birth. In addition, midwife support during pregnancy and childbirth reduces the feeling of fear and women have less cesarean section (McLachlan et al. 2016; Hatem et al., 2008; Forster et al., 2016; Kashanian et al., 2010; Hodnett et al. al., 2013; Soltani and Sandal, 2012; Sandal et al., 2016,).

2. Materials and Methods

In this context, the research is aimed to give information about continuous care under the leadership of the midwife in line with the literature.

3.Findings and Discussion

Evidence (The Effects of Midwife-Led Continuing Care)

There is ample evidence that midwife-led continuous care contributes to high-quality and safe care in high-income countries. Various qualitative studies have shown that both women and midwives value this care model (Perriman et al., 2018; Forster et al., 2016; Beak et al., 2005; McCourt et al., 1998). In a Cochrane systematic review of 17,674 women by Sandall et al to compare midwife-led continuous care models with other care models; Women who receive midwife-led continuous care are less likely to experience regional analgesia, episiotomy, amniotomy, and (Vacuum, forceps) invasive vaginal delivery, preterm delivery shorter than 37 weeks, and fetal death before and after 24 weeks. It has also been reported that women with midwife-led continuous care models are more likely to experience spontaneous vaginal delivery, but there is no difference between cesarean deliveries or intact perineum rates. It is confirmed that midwife-led continuous care models provide satisfaction and cost savings, but there is no consistency regarding their measurements (Sandal et al., 2016). In the ICM (Midwife-led Continuity of Care Position Statement) report, it is reported that women who receive continuous care are highly satisfied with the information, advice, explanation, place of birth, preparation for birth and delivery, choice of painkillers, care received during birth and control of their experiences (ICM, 2021). In addition, women are 8 times more likely to be examined by a midwife they know and trust at birth (ICM, 2021). Other evidence from high-income countries reports that such models are a low-cost way to improve health outcomes for mothers and infants, reduce medical interventions, and increase satisfaction with care (Tracy et al., 2013; Gao et al., 2014) .

In a study including 648 cases, which aimed to determine the effects of midwife-led care during labor on birth outcomes in primiparas, the intervention group had a lower probability of experiencing cesarean section, postpartum hemorrhage, analgesia, vaginal examination, neonatal asphyxia and neonatal hospitalization, and a shorter delivery time compared to the control group. and more likely to experience vaginal delivery. However, it has been reported that there is no difference between the number of amniotomy and the use of oxytocin (Jiang et al., 2018). in the study, the Palestinian government applied a midwife-led continuous care model in various rural areas to improve maternity services in the health system; In this study, investigated whether the model affected women's satisfaction with care in the antenatal, natal, and postnatal periods. 200 women, 100 of whom received midwife-led care and 100 of whom received standard care, were included in the study. At the end of the study, it was reported that satisfaction and duration of breastfeeding increased (Mortensen et al., 2019). In another study

on the satisfaction of women with midwife-led care during the birth process, it was reported that satisfaction was higher in the group receiving midwife-led care compared to standard care (1,156 continuous care, 1158 standard care) (Forster et al ., 2016).

in the retrospective study conducted to examine the maternal and newborn outcomes of 368 low-risk women who received care under the supervision of midwives and obstetricians; There was a statistically significant difference between the group cared for under the supervision of a midwife and the group given care under the supervision of an obstetrician in terms of total delivery time and total antenatal visits, but delivery type, episiotomy, intrapartum pain management, labor induction, postpartum hemorrhage, perineal trauma, 5 minutes Apgar score (<7), neonatal admission to intensive care units, and low birth weight (<2500 g) were reported not to be statistically significant (Voon et al.,2017). in a randomized controlled study conducted with a total of 2314 women to determine the effect of midwife-led care on women's birth experiences; It has been reported that women who received midwife-led care were more positive about their overall birth experiences, felt more in control during childbirth, felt more proud of themselves and less anxious than women in the standard care group (McLachlan et al., 2016). Studies are reporting that MLCC has benefits not only for women and their babies but also for midwives. It is reported that midwives who provide continuous care under the leadership of the midwife reduce professional burnout, provide a high level of professional satisfaction, and strong professional identity and autonomy (West et al., 2020; Fenwick et al., 2018; Homer, 2016).

4. Conclusion and Recommendations

MLCC appears to have positive health outcomes and increases satisfaction for mothers and babies. Evidence in the studies has been reported that it leads to more positive health outcomes for mothers and their babies who receive continuous care and that it increases the positive birth experience and satisfaction in the mother. Implementation of continuous care under the leadership of midwives not only in high-income countries but also in other regions is of great importance in terms of increasing and maintaining the health quality of women and their babies. In recent years, cesarean rates have increased significantly with the increase in medical interventions in childbirth worldwide. While midwives are the primary care providers of childbearing women worldwide, their role in reducing cesarean rates is significant. In this context, supporting midwife-led care in Turkey is important in terms of reducing cesarean section rates.

There is a need for more studies in the literature on the effects of midwife-led care models on the long-term health and well-being of mothers and babies after birth. Carrying out studies on care models under the leadership of midwives in Turkey; it can contribute to improving the quality of the midwifery profession, emphasizing the value of midwives and developing evidence-based midwife-led programs.

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STRESS IN PREGNANCY AND ITS FETAL EFFECTS

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ABSTRACT

In addition to being a physiological process for women, pregnancy is a period in which important bio-psycho-social changes become evident and the possibility of encountering many factors that can cause stress increases. Although pregnancy is often an exciting process, it is a stressful adventure that requires significant emotional adjustment in a woman's life, and the stress experienced in this process has many effects on maternal, fetal and child health.

In case of sudden stress, the enzymes that will protect the mother and baby from the negative effects of stress are activated, but this protective effect disappears if the stress becomes chronic. Stress has an indirect effect on infant development by predisposing mothers to perinatal depression. Also stress; It causes neonatal and adverse obstetric conditions such as prematurity, low birth weight, cesarean delivery, postpartum depression. In babies of mothers experiencing stress; Undesirable conditions such as difficult labor, intrauterine growth retardation, low APGAR score and fetal death occur.

Uncontrollable stress during pregnancy can create some negative effects not only in the intrauterine period but also in the future life of the baby. In babies of mothers who were exposed to a lot of stress during pregnancy; Difficulty in adapting to any novelty situation and cowardly behavior and intelligence performance in the preschool period and anxiety in adolescence are more common. The aim of this review is to explain stress in pregnancy, to shed light on its fetal effects and to present appropriate midwifery approaches.

Keywords: Fetal effect, pregnancy, stress.

1. Giriş

Kavramsal olarak stresi tanımlarsak; beden işlevleri ile çevre arasındaki çatışma sonucu fizyolojik sistemlerde kendini gösteren bir savunma mekanizmasıdır, stresör ise bireyin stresi yaşamasına neden olan herhangi bir faktör olarak tanımlanmaktadır (Taşkın L, 2016).

Hans Selge'ye göre stres genel uyum sendromu 3 aşamadan oluşmaktadır. Bunlar; alarm, direnç ve tükenme aşamalarıdır. Alarm aşaması, organizmanın strese verdiği ilk tepkidir. Bu ilk tepkiyi savaş ya da kaç olarak tanımlamıştır. Stres kaynakları canlıda endişe, uykusuzluk ve kalp çarpıntısı gibi olumsuz reaksiyonlara neden olur. Bu aşamada organizma ani bir tepkiye kendini hazırlamak için kalp atışlarını ve kan basıncını arttırır ve gerekli olan enerji için kana

glikoz salgılamaya başlar. Strese sebep olan etkenler ekarte edilirse organizmanın rahatlama, uyuma, hazmetme vs. işlevleri devreye girer ancak stres durumu devam ederse organizma direnç aşamasına geçer. Direnç aşaması, strese karşı verilen tepkinin en uzun aşamasıdır. Bu aşamada organizma karşılaştığı tehdidin üstesinden gelmeye çalışmaktadır ve organizma homeostatik dengeyi korumak için uzun süreli olarak sahip olduğu kaynakları kullanmaya devam eder. Zaman içinde stres organizmada fizyolojik ve duygusal çöküşlere neden olur. Birey ne kaçabiliyor ne de savaşabiliyor ve uzun süre strese maruz kalıyorsa sağlık problemleri ortaya çıkmaya başlar, fiziksel belirtiler direncin azaldığını gösterir ve organizma tükenme aşamasına girer. Tükenme aşamasında ise, organizma tehdidin üstesinden gelmeyi başaramamıştır. Stresörün üstesinden gelinemezse adapte olunamaz ve fizyolojik kaynaklar kullanılamayacak hale gelir. Bu aşamada organizma tükenmiştir ancak stresör etkinliğini yitirmeyip varlığını devam ettirmektedir. Organizmanın strese adaptasyon çabasının yitirildiği ve dayanamayacak hale geldiği aşamadır (Çalık KY & Çetin FC, 2018).

Kadınlar toplumsal cinsiyet rollerine bağlı olarak erkeklere kıyasla daha çok strese maruz kalmakta, öfke, korku, kızgınlık, sinirlilik gibi belirtileri daha çok yaşamaktadırlar. Aynı yaşam olayları karşısında kadınlar erkeklerden farklı olarak daha fazla stres deneyimleme özelliğine sahiptir (Çalık KY & Çetin FC, 2018).

Stresle baş etme yaklaşımları açısından da cinsiyetler arasında farklılıklar bulunmaktadır. Kadınlar strese karşı genellikle çaresiz ve boyun eğici yaklaşımda bulunurken erkekler iyimser yaklaşımı tercih etmektedir. Stres, fiziksel ve psikolojik iyi oluş üzerinde bir tehdit oluşturmaktadır. Kaygı, öfke ve üzüntü stres kaynaklarına gösterilen en önemli psikolojik tepkilerdir. Strese neden olan durumu uyum sağlayamayan kadınlarda bir süre sonra stres durumu kontrolden çıkar ve yaşam kalitesi olumsuz yönde etkilenir, hayattan zevk almamaya başlar (Gunn KM vd, 2012).

Dozunu aşan stres kadını sadece mutsuz etmekle kalmaz, aile ve sosyal yaşamında, iş yaşamında ve kendisi ile ilişkisinde bozulmalara tükenmişlik, bıkkınlık, huzursuzluk gibi duygu durumlarının ortaya çıkmasına ve sağlığının tehlikeye girmesine neden olur. Son yıllarda pek çok insanda stres varlığını göstermekte ve bunun sonucunda ise çeşitli hastalıkların alt yapısına zemin hazırladığı bilinmektedir. Başka boyutuna bakıldığında ise; hem ağrı atakları hem de ağrının kronikleşmesi üzerine etkili bulunmuştur (Evren B ve ark, 2005).

Stres her zaman olumsuz bir kavram olarak ele alınmamalıdır. Güzel sesler çıkarmak için bağlamanın tellerinin yeterince gergin olması gereklidir ama fazla miktarda gerildiğinde telin kırılmasına neden olabilir. Bu örnekte olduğu gibi önemli olan ortaya çıkan olayın durumuna göre stresin dozunu iyi ayarlamaktır (Hampel P & Petermann F, 2006).

Bireyin yaptığı bilişsel değerlendirmeler, stresten etkilenme düzeyini belirler. Kişi, stresli durum karşısında nasıl bakmak istiyor, neyi görmek istiyorsa o yönden görür. Bir durum birine göre felaket olarak yorumlanırken başkası için fırsata dönüştürülebilir. Bireyin stresle ilgili olarak yapmış olduğu değerlendirme stresin ortaya çıkmasında ve olumsuz süreçlerin oluşmasına neden olmasında belirleyici bir özelliğe sahiptir (Çalık KY & Çetin FC, 2018).

2. Gebelik ve Stres

Kadının yaşam evresinin bir parçası olan gebelik dönemin fizyolojik evre olarak görülmesine ek olarak hem bedensel hem ruhsal değişikliklerin meydana geldiği bu yaşam evresinde kadın, çeşitli kaygı ve stres faktörüyle daha fazla karşı karşıya kalmaktadır (Yali AM & Lobel M, 2002). Kadınlar gebeliği sevinç kaynağı, doyum ve kendisinin farkına varma

şeklinde algıladığı gibi; stres ve anksiyete gibi olumsuz psikolojik değişikliklerin yaşanabileceği bir süreç olarak da görebilmektedir (Çelik AS & Atasever İ, 2020).

Bireysel yaşam değişikliklerinde önemli bir artışa neden olan çocuk sahibi olmak, kronik stres ve kaygı yaratan bir durumdur. Örneğin yeni bir bebek konut değişikliği gibi artan finansal talepleri de beraberinde getirir. Benzer şekilde çalışan gebeler, doğum iznini alacak yarı zamanlı işe dönebileceklerdir. Bu süreçte gebe ve çevresini etkileyen pek çok karar alınması gerektiğinden kadının kendinden şüphe duyması ve kendine güven sorunu yaşaması normaldir. Birçok kadın bu dönemde olumlu olumsuz duygular gibi kararsızlık dalgalanmaları yaşayabilir (Yeşilçiçek Çalık K & Aktaş S, 2011).

Gebelik, kadınlar için başlı başına bir stres kaynağıdır. Kadınlar gebelik sırasında çeşitli düzeylerde doğum korkusu yaşamakta ve doğuma yönelik korkuları gebelikte stres ve korkuya neden olmaktadır. Gebelerin doğumla ilgili stres yaşamalarının nedeni; komplikasyonlu doğum öyküsü, doğum ekibinin uygun destek sağlaması konusundaki güven eksikliği, fetüsle ilgili kuşkular, doğum yapma konusunda yeteneksizlik, ölüm korkusu ve doğum esnasında kontrol kaybı korkusudur (Baltacı N & Başer M, 2020).

Gebelik sürecinde var olan stres etkeniyle baş edilememesinin sonucunda postpartum hüzün ve postpartum depresyon gelişme riski, emzirmenin aktif bir şekilde yürütülememesi ve maternal-fetal ilişkinin kurulmasında gecikmelere sebep olacağı öngörülmektedir (Dennis CL & Mc Queen K, 2007).

Gebelik sürecinde stresöre maruz kalan kadınlarda bulantı-kusma gibi gebeliğe özgü semptomların daha fazla görüldüğü, bu yüzden bu gebelerin; hastaneye başvurma sıklıklarının arttığı, normal bir gebeye kıyasla doğum korkusunu daha fazla yaşadıkları, sezaryen oranlarının daha yüksek olduğu ve travay sürecinde dış müdahale ve anestezi ihtiyaçları oranının daha yüksek olduğu yapılan çalışmalar sonucunda elde edilmiştir (Andersson ve ark, 2004; Shishehgar ve ark, 2014).

Anneden kaynaklanan fazladan stres sonucunda katekolamin ve kortizol düzeylerinde artış yaşanmasına bağlı vazokonstrüksiyon meydana gelir ve böylece uterin perfüzyon azalır. Yaşanan bu sistemsel uyumsuzluğun sonucu olarak fetusun oksijenasyonu azalır ve fetusun yaşamı tehlikeye girebilir (Özkan, 2012).

Gebelik sürecindeki stresi azaltmada pek çok nonfarmakolojik yöntem kullanılmaktadır. Bu yöntemler içerisinde; yoga, masaj, hipnoterapi, progresif kas gevşeme egzersizleri ve diyafragmatik solunum yer almaktadır (Bastani F vd, 2005; Tragea C vd, 2014).

> ### *Birinci trimesterda stres*

Gebeliğin ilk üç ayı kadınlar için bedensel ve psikolojik olarak zor bir dönemdir. Bu dönemde kadın gebe olduğunu öğrenir ve bu durum kadında farklı tepkilere yol açabilir. Gebeliğin planlı olup olmaması, kendisi ve çevresi tarafından istenen bir gebelik olması da bu dönemde çok önem arz eder. Gebe olduğunu öğrenen kadın gebelik planlı bile olsa çocuk sahibi olmak için doğru ve uygun zaman olup olmadığı konusunda kararsızlık ve stres duygusu yaşar (Çalık KY & Çetin FC, 2018; Gümüşdaş M vd, 2014).

Bu dönemdeki endişe, stres duygularının diğer nedenleri ise gebelik ile birlikte yaşamında meydana gelebilecek büyük değişimlerdir ki bunlar doğum ve çocuk büyütmenin getireceği ekonomik yük, rol değişimi, ailenin diğer bireyleri tarafından bebeğin reddedilmesi ve hazır olmama duygusudur (Özorhan EY vd, 2014).

<u>Birinci Trimestirde Ebenin Rolü:</u> Özellikle birinci basamakta çalışan ebeler, gebelik sürecinde yaşanılan fiziksel, psikolojik sorunlar ve stresörleri azaltmak için baş etme mekanizmalarını geliştirme konularında bilgilendirmeli, değişen duruma uyumlarını sağlamalı ve desteklemelidir. Birinci trimesterde kadının desteğe olan ihtiyacı arttığı için ebenin rolü oldukça önemlidir. Ebe gebenin artan ihtiyaçlarının farkında olmalı, ambivalan duygularını anlamalı, gerekirse aileye de bu konuda eğitim ve danışmanlık vermelidir (Çalık KY & Çetin FC, 2018).

➤ *İkinci trimesterda stres*

İkinci trimester da gebelik kontrollerinde gebe kendinin ve bebeğini sağlığı ile ilgili bilgiye ihtiyaç duyar ve bebeğinin sağlığına yönelik endişeler duymaya başlar. Özellikle bu dönemde yapılan antenetal tarama ve tanı testleri de stres-anksiyete yaratabilir. Birçok kadın bebeğini korumak için yeterli güce sahip olup olmadığı hakkında endişe yaşar, bu endişe nedeniyle bazen kadınlar sporu bırakma, dışarı çıkmayı azaltma gibi yaşamlarında gereksiz bazı kısıtlamalar yapabilir. Bu dönemde kadın, sağlıklı bir doğum yapabilmek için neler yapması gerektiğini düşünür. İkinci trimester da gebelerin ilk trimestere göre daha dengeli duygular içerisinde yer aldığı görülür (Demirbaş H & Kadıoğlu H, 2014).

<u>İkinci Trimestirde Ebenin Rolü</u>: Bu trimesterde ebenin gebelik kontrollerinde kadının duyguları hakkında tartışması, desteklemesi, yaşadığı fiziksel ve psikolojik değişiklikler hakkında konuşması önemlidir. Ebeler, gebeleri doğuma hazırlık sınıflarına alarak gebelerin ihtiyaç duydukları bilgileri alabilmelerine, birbirleriyle olumlu iletişim yapabilmelerine dolayısı ile rahatlamalarına olanak sağlayabilirler. Doğuma hazırlık sınıflarının gebelerin duygularını paylaşmaları ve diğer gebelerin de benzer duygular yaşadıklarını görmeleri onları rahatlatmaktadır (Şeker S & Sevil Ü, 2006). Ebe tarafından kadına gebelik boyunca yaygın olarak görülen duygusal dalgalanmalar hakkında net ve anlaşılır açıklamalar yapılmalıdır. Ayrıca ebe bu dönemde baba adayı ve aileyi de ihmal etmemelidir, mümkünse antenatal izlemlere ve bakım sürecine babayı da katmalı, fetüsün sağlığına ilişkin bilgi vermeli, onun endişe ve düşüncelerini de dinlemelidir (Çalık KY & Çetin FC, 2018).

➤ *Üçüncü trimesteda stres*

Toplumsal kalıplaşmış bir algı olan doğum, anne-baba tarafından dış etkenler nedeniyle riskli, kanama ihtimali olan ve sancılı bir süreç şeklinde görülmektedir. Kalıplaşan bu algıların yıkılmaması durumunda gebeliğin son trimesterında stres seviyesini arttırdığı görülür. Stresör sebebiyle yükselen kortizol seviyesi, plasental CRF ve oksitosin hormonlarının salgılanmasında etkilidir. Bu durum serviksin daha erken dilate olmasına ve uterin kasılmalara sebep olarak kadının travay sürecinin hızlanmasında etkilidir (Karakoyunlu, 2018).

Anne adayı doğuma ilişkin birçok soruya cevap arar " doğum ne şekilde, ne zaman olacak? Hastaneye yetişebilecek miyim, bebek zarar görebilecek mi? " vs. Yapılan araştırmalarda kadınların en çok doğum ağrısından, fetal anomalili bebek doğurmaktan, müdahaleli doğumdan, doğum sürecini aktif yönetebilmekten, herhangi bir şeyi yanlış yapmaktan korktukları gösterilmiştir.

Son trimesterde gebede fetüse zarar veririm düşüncesiyle evden dışarı çıkmak istemez ve endişe duyar. Diğer endişe kaynaklarıysa mali kaygı, sosyal destek yoksunu ve artan güvenlik amaçlıdır. Bu dönemde kadını özellikle eşine olan bağımlılığı artar, ona her an ulaşmak ister, sevgi ilgi ve desteğine gereksinim duyar. Yaşanılan tüm bu çaresizlik yoğun anksiyete, korku ve stres ile baş etme de doğuma hazırlık sınıflarının ve gevşeme tekniklerinin yararlı ve etkili olduğu gösterilmiştir (Dağlar G vd, 2015).

Üçüncü Trimestirde Ebenin Rolü: Ebenin bu süreçte bütüncül yaklaşımla gebeyi daha sık ve yakından izlemesi ve desteklenmesi için iyi bir danışman olması gerekmektedir. Bu sürecin psikolojik boyutunun atlatılmasında, doğuma ilişkin bilgiler, beklenen doğum zamanı, yeri, nasıl olacağı, doğum olayında yanında kimin olacağı gibi tüm ayrıntılara ilişkin gebenin ve ailesinin bilgilendirmesi ve hazırlanması yardımcı olacaktır. Ebe gebenin doğum ve bebek ile ilgili duygu ve düşüncelerini açıklaması için desteklemeli, paylaşmasına izin vermeli ve tüm sorularını yanıtlamalıdır.

Ebelerin yalnızca anneye değil bu süreçte babaya da danışmanlık hizmeti vermesi gerekir. Danışmanlık hizmeti kapsamında; baba adaylarının gebelik döneminde meydana gelen değişikliklerin farkına varmasını ve gebelik, doğum ve doğum sonu dönemde eşine psikolojik destek vermesini sağlamak, yenidoğana dair alışverişin ve gelecek hakkındaki planları beraber kurmak, eğer varsa kardeşler arasındaki iletişimi kolaylaştırmak ve ev işlerinde eşine destek olma gibi sorumlulukları hakkında bilgi verilmelidir (Çalık KY & Çetin FC, 2018; Şimşek HN, 2018).

Gebeyi gebelik boyunca izleyen ebesinin doğumda da bulunarak yardımı desteği doğum sürecinin daha iyi yönetilmesini sağlayacaktır. Gebenin isteklerinden beklentilerinden ebe izlemleri süresince haberdar olduğundan doğum sırasındaki yardımı desteği oldukça önemlidir (Mermer G vd, 2010).

3. Stresin Fetal Etkileri

Gebelikteki stres faktörlerinin böbreküstü bezinden glikokortikoid salgılanmasını arttırdığı bilinmektedir. Glikokortikoid; birçok sitokinin, büyüme faktörünün, immun sistem hücrelerinin üretimi ve salınımında asıl görevi üstlenmektedir. Maruz kalınan stresin sonucu olarak kortizol seviyesinde artış görülür ve bu artış plasenta ve fetüsü olumsuz etkileyerek gebeliğin tehlikeye girmesine neden olabilir (Baykal Akmeşe, 2017). Gebelik, aile bireyleri ve annenin yaşamında önemli değişikliklerin yaşandığı stres yüklü bir fizyolojik süreçtir. Stres, gebelik döneminde kadının günlük yaşamını önemli ölçüde etkileyerek sağlıksız yaşam biçimi alışkanlığı geliştirmelerine neden olabilmektedir. Gebelik döneminde yaşanan stres, hormonları gebeliğin gidişini olumsuz etkileyebilir. Stres, gebelikte plasentada kan akımını bozarak plasental kan glukoz düzeyinde önemli azalmalara neden olmaktadır (Hampel P & Petermann F, 2006). Plasental kan akımında bozulmaların bir sonucu olarak stres yaşayan annelerin bebeklerinde İUGG ve düşük doğum ağırlığı sıklıkla rastlanan durumlardandır. Gebeliğin devamında önemli rolü olan progesteron seviyeleri stres hormonlarından etkilenmektedir. Gebeliğin başında akut stres durumunda anneye ve bebeği stresin olumsuz etkilerinden koruyacak enzimler harekete geçse de stres kronikleştiğinde bu koruyucu etkili ortadan kalkmaktadır.

Stres hormonlarının immün sisteme olan olumsuz etkileri preeklampsi gibi gebelik komplikasyonlarını tetikleyebilmektedir. Gebelik sürecinde etkinliğini sürdüren stresin yalnızca bu dönemde olumsuz etkilere sebep olmayıp fetüsün gelecek hayatında da pek çok olumsuzluk yarattığı bilinen gerçekler arasındadır. Gelecekteki bu olumsuz etkilere örnek verecek olursak; strese maruz kalmış bebeklerin herhangi bir farklı ortama girdiğinde adaptasyonda zorlandığı ve çekingen davranışlar sergilediği görülmekte, 0-5 yaş döneminde zeka-odaklanma başarımında azalma ve dil becerilerinde gerilik, ergenlik döneminde anksiyete ve depresif bozukluklar daha çok rastlanmaktadır (Hampel P & Petermann F, 2006; Evren B ve ark, 2005). Bunun özellikle gebeliğin ortalarında maruz bırakılan dönemde fetüsün beyin gelişiminin daha ön planda olduğu bu aşamada stres hormonlarının Fetal HPA aksında bozulmaların neden olduğu düşünülmektedir. Bu bebekler yetişkin yaşamlarında

hipertansiyon, koroner artar hastalığı, DM ve Kronik hastalıklarla daha sık karşı karşıya kalmaktadır (Çalık KY & Çetin FC, 2018).

Gerçekleştirilen çalışmalarda gebelik sürecinde stresör etkisi altında kalmanın gebe, fetüs ve yenidoğanın gelişimi ve hayati semptomları üstünde birçok dezavantajı saptanmıştır. Bu duruma örnek olarak; spontan abortus, gebelik döneminde kanama, yükselen uterin arter perfüzyonu, gebelikte kardiovasküler hastalıklar, plasental anomaliler, erken doğum riski, zor doğum eylemi, müdaheke gerektiren doğumların yaşanması, fetüsün haftasına göre gelişim geriliğinin olması, APGAR skorunun düşük olması, doğum ağırlığının normalin altında olması, fetal kayıp ve annelik hüznü gibi olumsuz etkiler örnek verilebilir (Çelik AS & Atasever İ, 2020; Ortaarık E vd, 2012; Yali AM & Lobel M, 2002). Gebelikte yaşanan stresin başka olumsuzluklarına da değinecek olursak; travay sürecinin kısalması ya da uzaması, malprezentasyon, membranların zamanından önce rüptüre olması ve fetüsün mekonyum aspirasyonlu olarak doğması olası durumlardandır (Pearlstein T, 2015). Ayrıca gebeliği stres dolu geçen annelerin bebeklerinde mizacın da olumlu etkilenmediği görülmektedir (Huizink ve ark, 2002).

Son yıllarda literatüre kazandırılan çalışmalar, kordon kanında bulunan lökosit hücrelerindeki telomer uzunluğunda meydana gelen değişimin gebelik sürecinde maruz kalınan stresör ile ilgili olduğunu göstermektedir. Tamamlanan bir araştırma sonucunda; gebelikte stresör etkisi altında kalmanın telomer uzunluğunda kısalmanın olmasıyla alakalı olduğu sonucuna varılmıştır. Bu kısalmanın insanın yaşam süresinin azalmasında küresel bir görev üstlendiği ve böylece yaşlılık üstünde etkisinin olduğu araştırılan çalışmalar sonucunda literatüre kazandırılan bilgiler arasındadır (Entringer ve ark, 2011).

Prenatal süreçte maruz kalınan stres fetüsün gelecek yaşamında bilişsel ve ruhsal sorunlarla karşı karşıya kalma riskini arttırmaktadır (Bock ve ark, 2015). Bu sorunlardan çocukluk döneminde görülebileceklere değinecek olursak; dil performansında gecikme yaşanması, çocuğun bilişsel, hareketsel ve psikomotor gelişiminin uzamış seyretmesi, okuldaki başarı oranında azalma, azalmış entelektüel zekâ seviyesi, öğrenme ve hafıza gerilikleri, asosyal davranışlar sergileme, odaklanmada problem yaşanması ve hiperaktivite sorunsalı sayılabilir (Talge ve ark, 2007; Glover, 2014; Pearlstein, 2015; Polanska ve ark, 2017). Üstelik bunlara ek olarak stresli gebelerin çocuklarının otizm, şizofreni vs. açısından da riskli grupşar içersindedir (Kinney ve ark,2008; Bock ve ark, 2015).

Ayrıca bu çocuklarda uzun sürede konsantre olamama problemi, öfkelenme ve toplam nüfusa oranla suça meyilli olma oranlarının daha da fazla olduğu çalışmalarca kanıtlanmıştır (Hammen ve Brennan, 2003; Madazlı, 2005). Ayrıyeten bu çocukların ileri yaşamlarında hipertansiyon, obezite, tip II diyabet ve atopik bir bünyeyi üstlenmesi açısından risk altında olan kişilerdendir (Madazlı, 2005). Sağlığı olumsuz etkileyecek bu gibi problemlerin sıklığının çoğalmasının sebebinde ise prenatal dönemde etkisi altında kalınan stresörlerin, plasentada var olan DNA mutilasyonu ve gen ekspresyonunda epigenetik reaksiyonlara sebep olabileceği düşünülmektedir (Flanigan, 2016).

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REVIEW ON APPLICATION OF GOLD NANOPARTICLES IN GENE DELIVERY

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ABSTRACT

Gold nanoparticles (AuNPs) have emerged as a promising tool for gene delivery due to their unique physicochemical properties, biocompatibility, and ease of functionalization. The use of AuNPs as gene delivery vehicles has gained attention due to their ability to protect nucleic acids from enzymatic degradation, enable cell-specific targeting and provide controlled release of genetic material. Here's a brief review of the application of gold nanoparticles in gene delivery.

One of the major advantages of AuNPs in gene delivery is their ability to protect the nucleic acid cargo from enzymatic degradation. Gold nanoparticles can protect DNA or RNA molecules from being degraded by nucleases, enzymes that break down nucleic acids. This property is due to the strong binding affinity between the negatively charged nucleic acids and the positively charged AuNPs. This protection ensures the stability and integrity of the nucleic acid cargo during delivery, which is crucial for successful gene therapy. Another advantage of AuNPs in gene delivery is their ability to target specific cells. AuNPs can be conjugated with ligands, such as antibodies or peptides, that recognize and bind to specific cell surface receptors. This targeting ability enhances the specificity and efficiency of gene delivery by ensuring that the genetic material is delivered only to the desired cells. AuNPs can also be designed to provide a controlled release of genetic material. This feature allows for the sustained release of the nucleic acid cargo over time, which can be critical for long-term therapeutic effects. Additionally, the release rate of the genetic material can be controlled by modifying the size and surface properties of the AuNPs.

Overall, the application of gold nanoparticles in gene delivery has shown great promise in preclinical studies. However, there are still challenges that need to be addressed, such as improving the transfection efficiency and reducing toxicity. Future research in this area will likely focus on optimizing the design of AuNPs to improve their gene delivery properties and developing safer and more effective methods for clinical applications.

KEYWORD: (AuNPs), PpAuNPs, thiols, intracellular release, surface plasmon resonance, site specificity.

A NEW DNA EXTRACTION PROTOCOL FOR FORMALIN-FIXED PARAFFIN EMBEDDED TISSUE OF UTERUS CANCER

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ABSTRACT

Formalin-fixed paraffin-embedded (FFPE) tissue is an important source of material for molecular analysis. In the anatomical pathology field, molecular testing is needed in certain tumors, such as endometrial tumors, to confirm the diagnosis. Extracting DNA from FFPE material is still challenging. Many laboratory protocols and commercially available extraction kits have been developed to obtain suitable quality and quantity of DNA for molecular analysis. In this study, we aimed to develop a new Cetyltrimethylammonium bromide (CTAB) – based DNA extraction method from 30 FFPE of uterus tumor tissue blocks which were obtained with permission of Harran University Research Hospital, Department of Pathology. The quantity and quality of the extracted DNA from three replicates of each blocks were measured by spectrophotometer. The quality of DNA was found between 1.7-2.0 (A260/A280) and the average absorbance ratio of A260/A230 was 1.39. The average DNA yield was 40.4 nano gram per microliter. The quality and quantity results of extracted DNA from FFPE tissues were enough for molecular analysis. The new DNA extraction protocol has many advantages such as small amount of FFPE tissues (30 micro grams per sample), six easy steps with common chemicals and solutions (without expensive chemicals such as Proteinase K and RNase A), time efficiency (extraction of 30 samples less than three hours) and cost-effective (less than 1 US dollar per sample). The new DNA extraction protocol can be adapted to every laboratory which works on DNA based technologies.

Key words: DNA protocol, FFPE blocks, CTAB, Molecular analysis

ÇOCUKLARDA GLUTARALDEHİD İLE İŞLENMİŞ OTOLOG PERİKARD YAMA İLE SEKUNDUM ATRİYAL SEPTAL DEFEKT TAMİRİ SONUÇLARIMIZ

OUR RESULTS OF SECUNDUM ATRIAL SEPTAL DEFECT REPAIR WITH GLUTARALDEHYDE-TREATED AUTOLOGOUS PERICARDIAL PATCH IN CHILDREN

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ÖZET

Amaç: Otolog perikard yama kalp cerrahisinde sıkça kullanılan bir materyaldir. Çalışmamızda glutaraldehyde ile işlenmiş otolog perikard yama kullanılarak sekundum atriyal septal defekt tamiri sonuçlarımızı sunduk.

Materyal ve metod: Mart 2017 ile Mayıs 2023 tarihleri arasında sekundum atriyal septal defekt tamiri yapılan 42 hasta çalışmaya alındı. Standart median sternotomi ve aortik-bikaval kanülasyon yapılmasının ardından kardiyopulmoner baypasa girildi. Otolog perikard serbest yama olarak çıkartıldı. Perikard yama %0,6'lık glutaraldehid (Polyscientific, Bayshore, NY) solüsyonunda 20 dakika bekletildi ve 3 kez %0,9'luk salin solüsyonu içinde 5 dakika yıkandı. Ardından defekt otolog perikard yama ve polipropilen sütür kullanılarak kapatıldı.

Bulgular: Hastaların 18'i (%42,9) erkek, 24'ü (%57,1) kız ve ortanca yaşı 6,4 (1,3-15,7) yıldı. Kardiyopulmoner baypas ve aortik kros klemp süresi sırasıyla 59,6±15,8 dakika ve 32,3±10,9 dakikaydı. Yoğun bakım ünitesinde kalış süresi ortanca 2 (1-6) gün ve hastanede kalış süresi ortanca 6 (3-11) gündü. Postoperatif en sık görülen komplikasyon supraventriküler taşikardi (n=5, %11,9) idi. Takip süresi ortanca 18,5 (2-64) aydı. Takip süresi boyunca mortaliteye rastlanmadı. Postoperatif takipte hiçbir hastada hemodinamik olarak anlamlı rezidüel defekt, yamada anevrizmal dilatasyon, kalsifikasyon, tromboz veya vejetasyon saptanmadı.

Sonuç: Glutaraldehyde ile işlenmiş otolog perikardın atriyal septal defekt tamirindeki erken dönem sonuçları mükemmeldir. Bu materyal kullanımı kolay olması, hazırda bulunması ve sterilizasyon gerektirmemesi gibi avantajlara sahiptir.

Anahtar kelimeler: Atriyal septal defekt, glutaraldehyde, otolog perikardium, yama, tamir

ABSTRACT

Objective: Autologous pericardial patch is a frequently used material in cardiac surgery. In our study, we presented the results of secundum atrial septal defect repair with glutaraldehyde-treated autologous pericardial patch.

Materials and methods: Forty-two patients who underwent secundum atrial septal defect repair between March 2017 and May 2023 were included in the study. After standart median sternotomy and aortic-bicaval cannulation, cardiopulmonary bypass was performed. The autologous pericardium was removed as a free patch. The pericardial patch was soaked in 0.6% glutaraldehyde solution for 20 minutes and washed 3 times in 0.9% saline solution for 5 minutes. Then the defect was closed using an autologous pericardial patch and polypropylene suture.

Results: Eighteen (42.9%) patients were male, 24 (57.1%) were female, and their median age was 6.4 (1.3-15.7) years. Cardiopulmonary bypass and aortic cross clamp time were 59.6±15.8 minutes and 32,3±10,9 minutes, respectively. The median length of stay in the intensive care unit was 2 (1-6) days, and the median length of stay in the hospital was 6 (3-11) days. The most common postoperative complication was supraventricular tachycardia (n=5, 11,9%). The median follow-up period was 18.5 (2-64) months. No mortality was observed during the follow-up period. In the postoperative follow-up, no hemodynamically significant residual defect, aneurysmal dilatation, calcification, thrombosis, or vegetation was detected in any of the patients.

Conclusion: The early results in atrial septal defect repair of autologous pericardium treated with glutaraldehyde are excellent. This material has the advantages of being easy to use, readily avaiable and not requiring sterilization.

Keywords: Atrial septal defect, glutaraldehyde, autologous pericardium, patch, repair

FORMULATION AND ANTIMICROBIAL EVALUATION OF HERBAL FACEWASH FOR SKIN HEALTH

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ABSTRACT

This study aims to develop a herbal facewash formulation with antimicrobial activity and evaluate its effectiveness for skin health. With the increasing demand for natural skincare products, the focus is on harnessing the potential of herbal ingredients to provide both cleansing and antimicrobial benefits. Various herbs known for their antimicrobial properties were carefully selected and incorporated into the facewash formulation. The active compounds present in these herbs were identified and their mechanisms of action against microorganisms were explored. The facewash formulation was developed by considering the compatibility and synergistic effects of the selected herbal ingredients. Stability issues were addressed to ensure the longevity of the product. The antimicrobial activity of the herbal facewash was evaluated through microbiological tests against common skin pathogens. The results demonstrated the efficacy of the herbal facewash in inhibiting the growth of microorganisms, thereby indicating its potential for maintaining skin health and preventing microbial infections. This research contributes to the development of natural and effective skincare products that offer antimicrobial protection while promoting overall skin well-being.

Keywords: Herbal facewash, Antimicrobial activity, Skin health, Natural skincare, Herbal ingredients, Microorganisms, Skin pathogens, Antimicrobial protection.

HİPOMAGNEZEMİK BİR BUZAĞIDA KARDİYAK VE HEMATO-BİYOKİMYASAL DEĞERLERİN DEĞERLENDİRİLMESİ

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Özet

Bu vakada hipomagnezemi tanısı konulan bir buzağının klinik ve laboratuvar bulguları sunulmaktadır. 7 günlük simental bir buzağıda ayağa kalkamama ve titreme şikayetiyle Bingöl Üniversitesi Hayvan Hastanesi İç Hastalıkları Kliniğine getirildi. Buzağının fiziksel klinik muayenesinde halsizlik, opistotonus, konvülziyon ve eklemlerde bükülmeme bulguları gözlemlendi. Kardiyak muayene bulgularında yüksek hassasiyetli kardiyak troponin I değerinin (hsTnI) önemli ölçüde yüksek olduğu dikkati çekti. Kan gazı elektrolit analizi bulgularında L – laktat, sodyum ve klor düzeyi yüksek iken kan pH'nın düşük düzeyde olduğu belirlendi. Hematolojik muayene bulgularından total lökosit ve lenfosit sayısı düşük iken ortalama eritrosit çapı (MCV) ve ortalama eritrosit hemoglobin konsantrasyonunun (MCHC) ise yüksek olduğu bulundu. Biyokimyasal parametrelerden üre, fosfor ve alanin aminotransferaz (ALT) değerinin yüksek olduğu bulunurken magnezyum düzeyinin çok düşük düzeyde olduğu belirlendi.

Sonuç olarak bu olgu sunumunda sunulan parametrelerin klinisyen veteriner hekimlerin karşılaşabileceği benzer olguların ayırıcı tanısında yardımcı olabilir.

Anahtar Kelimeler: Buzağı, Magnezyum, Opistotonus, L-laktat

GİRİŞ

Esansiyel bir iz element olan magnezyum (Mg) dördüncü en fazla bulanan katyondur ve enzim veya substratlara bağlanarak enzimatik reaksiyonların meydana gelmesinde önemli rolü vardır (Martens ve ark., 2018). Vücutta homeostasisin sağlanılmasında Mg'nin birçok önemli katkısı vardır. Magnezyum immünolojik yolaklarda, merkezi sinir sisteminde sinaptik taşınımın ve motor uç plaklarının modülasyonunun sağlanılmasına da önemli katkı sağlar (Möykknen ve ark., 2001; Li ve ark., 2011; Morris, 1992; Martens ve ark., 2000). Vücutta magnezyumun yaklaşık olarak % 60-70'i iskelet sisteminde, %30'u hücre içinde ve % 1'i ise iskelet sisteminde

yer almaktadır (Houillier, 2014). Bunların yanı sıra plazma magnezyumun % 20 ile % 40'ı albümin ve globülinlere yaklaşık olarak %10'u ise sitrat, fosfat ve bikarbonat gibi küçük anyonlara bağlanır (Blaxter ve McGill, 1956). Sığır, koyun ve keçi de hipomagnezemiden önemli ölçüde etkilenmektedirler. Ancak sığırlar hipomagnezemiye diğer türlerden çok daha hassastır (Grunes ve ark., 1970).

Ruminantlarda magnezyum emilimi gastro-intestinal sistem tarafından gerçekleştirilir. Ancak kuzu ve buzağılarda sütten kesim öncesinde ince ve kalın bağırsaklarda emilim gerçekleşir. Kaba ve konsantre yeme geçişle birlikte ön midelerde gelişim meydana gelir ve magnezyum emilimi bağırsaklardan ön midelere geçer (Marten ve ark., 2000). Ön midelerde meydana gelen bir malabsorbsiyonda magnezyum emilimi gerçekleşmez ve intestinal sistem bunu kompanze edemez ve hipomagnezemi şekillenir (Morris, 1992; Martens 2000). Hipomagnezeminin görülmesinde su içeriği yüksek besinlerin alınımı, toprağın sodyum ve potasyum içeren gübrelerle çok fazla gübrelenmesi, meralardaki bitkisel besinlerde sodyumun düşük olması ve nem oranının yüksek oluşu, çeşitli hastalıkların tetiklenmesi, kaba yemlerdeki non-protein azotça zengin yemlerin alınması ve mevsimsel faktörler bu hastalığın meydana gelmesinde önemli rol oynar (Macdonald ve ark., 2017; Foster ve ark., 2007; Ram ve ark., 1998; Larvor, 1976; Grunes ve ark., 1970).

Magnezyumun referans aralığı bazı araştırmacılara (Constable ve ark., 2017) göre 0.7 ile 1.23 mmo/l düzeyinde olduğu bildirilirken, bazılarına (Martens ve ark. 2018) göre ise 0.9 ile 1.2 mmol/l arasındadır. Sığırlarda meydana gelen hipomagnezemide ataksi, konvülzüyonlar, kulak kepçesinin seğirmesi, hipersalivasyon, üçüncü göz kapağının açılıp kapanması, yatma, tetanik kas spazmları, koma ve ölüm görülen önemli klinik semptomlardır. Bu semptomların muhtemel sebebinin gelişen hipomagnezyuma bağlı olarak merkezi sinir sisteminde önemli hasarların şekillenmesidir (Martens ve ark., 2018; Foster ve ark., 2007).

VAKA GEÇMİŞİ

7 günlük simental erkek bir buzağı halsizlik, opistotonus, konvülziyon ve eklemlerde bükülmeme şikayetiyle Bingöl Üniversitesi Veteriner Fakültesi Hayvan Hastanesi İç Hastalıkları kliniğine getirilmiştir. Hayvanın klinik muayenesi iç hastalıkları muayene sistematiğine göre yapılmıştır. Tekniğine uygun olarak buzağının vena jugularisinden hematolojik ve biyokimyasal analizler için vakumlu antikoagulantlı (BD, Plymouth, UK) ve antikoagulantsız (BD, Plymouth, UK) tüplere, kan gazlarının analizi için ise heparinli enjektörlere (Wondfo BGA 101, China) kan örnekleri alınmıştır. Kan hücrelerinin sayımı hematoloji cihazında (Benesphera H31, India) biyokimyasal parametreler otomatik bir analizörde (Randox Monaco, England), kardiyak parametreler (ADVIA Centaur XPT, Simens Healthcare Diagnostics, Germany) otomatik bir analizörde, kan gazlarının analizleri ise otomatik kan gazı analizatöründe (Wondfo BGA 101, China) gerçekleştirilmiştir.

BULGULAR

Buzağının yapılan klinik muayenesinde halsizlik, opistotonus, konvülziyon ve eklemlerde bükülme olmamasının yanı sıra pupillalarda dilatasyon, lateral yatış pozisyonu, kosta-abdominal solunum,mukoza ve konjunktivalarda hiperemi ve alt ve üst çenede kilitlenme gibi klinik semptomlar görülmüştür.

Buzağının kalp frekansı 148/dk, solunum frekansı 44/dk ve vücut sıcaklığı 38.4 °C olduğu belirlenmiştir.

Şekil.1 Hipomagnezemik buzağıda opistotonus

Buzağının klinik belirtilerine göre yapılan magnezyum ölçümünde, buzağıdaki serum magnezyumun (0.36 mmol/l) referans aralıklarından (0.7-1.23 mmol/l) çok düşük olduğu bulunarak hipomagnezemik tetani tanısı konulmuştur.

Hematolojik muayeneler sonucunda buzağıdaki lökosit (WBC) ve lenfosit (LYM) sayısının referans aralığından düşük olduğu, ortalama eritrosit çapı (MCV) ve ortalama eritrosit hemoglobin konsantrasyonu (MCHC) ise referans değerlerden daha yüksek olduğu belirlenmiştir (Tablo 1).

Kan gazı değerlerinde, kan Ph'ı ve glikoz değerinin referans değerden düşük olduğu sodyum, klor, anyon gap ve L-laktat değerinin ise referans değerden yüksek olduğu bulunmuştur (Tablo 2).

Biyokimyasal parametrelerden BUN, fosfor ve ALT referans değerlerden yüksek bulunurken magnezyum düzeyi referans değerlerden çok düşük bulunmuştur (Tablo 3).

Tablo.1 Buzağının Hematolojik Bulguları

Parametre	Sonuç	Referans Değer*
WBC (x10^3/μL)	3.4	4-12
LYM (x10^3/μL)	1.9	2.5-7.5
RBC (x10^6/μL)	5.01	5-10
HGB (g/dL)	8.7	8-15
MCHC (x10^3/μL)	49.3	31-34
MCH (x10^3/μL)	17.4	11-17
MCV (x10^3/μL)	35.2	46-65
HCT (%)	33	24-46

WBC: white blood cell; LYM: lymphocyte; RBC: red blood cell; HGB: haemoglobin; MCHC: Mean corpuscular hemoglobin concentration; MCH: Mean corpuscular hemoglobin; MCV :Mean corpuscular volume; HCT: hematocrit; PLT: platelet

*Rolan ve ark. (2014)

Tablo 2. Buzağıdaki Kan Gazı Bulguları

Parametreler	Sonuç	Referans Değerler*
Kan Ph	7.215	7.37-7.46
Na (mmol/L)	155	133 - 140
K (mmol/L)	4.6	4.13-5.41
Cl (mmol/L)	111	93-101
Ca (mmol/L)	1.52	1.17-1.37
Glikoz (mmol/L)	2.7	3.9- 8.4
L-Laktat (mmol/L)	6.83	2.0**

*Dillane ve ark. (2018)   **Omole ve ark. (2001

Tablo 3. Buzağıdaki Biyokimyasal Bulgular

Parametreler	Sonuçlar	Referans Değerler*
BUN (mg/dL)	89.64	10-25
Crea (mg/dL)	0.01	0.5-2.2
Fosfor (mg/dL)	9.186	5.6-8.0
Alb (g/dL)	3.6	2.5-3.8
Mg (mmol/L)	0.39	0.6-1.2
hsTn-I (ng/L)	2636.7	

CK-MB: MB isoenzyme of creatine kinase; BUN: blood urea nitrogen; TBIL: total bilirubin; ALB: albümin; Crea:kreatin;Koles:kolesterol; HsTn-I:Yüksek hassasiyetli troponin-I

*Fielder SE (2015)

Tartışma

Metabolizma hastalıkları içerisinde yer alan hipomagnezemi, ruminantları etkileyen önemli bir hastalıktır (Grunes ve ark., 1970). Dünyanın farklı ülkelerinde önemli morbidite ve mortaliteye sebep olduğu birçok çalışmayla ortaya konulmuştur (Doncel ve ark. 2019; Canton ve ark. 2014;Watson ve ark. 2008; Harris ve ark.1983).

Bu vakadaki buzağıya hipomagnezemik tetani tanısı serum magnezyum düzeyinin ölçümü ile konulmuştur. Hipomagnezeminin tanısında magnezyum için üzerinde konsensüs sağlanan bir değer aralığı ortaya konulamamıştır. Bazı araştırmacılara (Constable ve ark., 2017) göre 0.7 ile 1.23 mmo/l düzeyinde olması gerektiği ifade edilirken, bazılarına (Martens ve ark., 2018) göre ise 0.9 ile 1.2 mmol/l olması gerektiği belirtilmiştir. Bu vakada ise serum magnezyum değeri 0.36 mmo/L olarak bulunarak hipomagnezemi tanısı konulmuştur.

Hipomagnezemik sığırlarda hiperestezi, opistotonus, ekzoftalmus, ataksi, konvülzüyonlar, kulak kepçesi ve yüzde seğirme, hipersalivasyon, lateral yatma, tetanik kas spazmları ve koma

gibi klinik semptomların görüldüğü bildirilmiştir (Lata, 2021; Martens ve ark., 2018; Ghanem, 2013; Foster ve ark., 2007). Bu vakadaki klinik semptomlar bildirilenlerle uyumludur. Hipomagnezemik tetanide şekillenen klinik semptomların oluşumunda düşük magnezyum konsantrasyonunun sinapslardaki kalsiyum kaynaklı nörotransmitter madde salınımını ile nöronları aşırı uyarılması yoluyla gerçekleştiği bildirilmiştir (Martens ve Schweigel, 2000). Ölen buzağının nekropsisinin yapılmasına sahiplerince izin verilmediği için herhangi bir işlem yapılamamıştır.

L-laktat dokularda hipoperfüzyon, hipovolemi oluşumu ve hücresel metabolik anormalliklerin oluşumuna yol açar (Kraut ve Madias, 2016; Trefz ve ark. 2017). Yapılan birçok çalışmada L-laktat konsantrasyonundaki artışın doku hipoksisi, kan basıncı ve kardiyak çıkışta azalma, hipotansiyon, kalp frekansında artma gibi kardiyovasküler sistem üzerinde birtakım anormal değişimlerin oluşumuna neden olduğu bildirilmiştir (Naseri ve ark. 2018; Naseri ve İder., 2021; Constable ve ark. 2016). Assarian ve ark. (2019) tarafından yapılan bir çalışmada septik hipomagnezemik hastalarda laktat konsantrasyonunun grubuna nazaran önemli düzeyde yükseldiği belirlenmiştir. Bunun yanı sıra Moskowitz ve ark. (2016) da hipomagnezemik kişiler üzerinde yaptıkları bir çalışmada magnezyum düşüklüğü ile laktik asidoz arasında önemli bir ilişki olduğunu bulmuşlardır. Bu mevcut çalışmada da laktat referans düzeyinden oldukça yüksektir ve laktat değeri belirtilen çalışmalarla uyum içerisindedir. Laktat klirensinin azalması ve hipoperfüzyonun meydana gelmesi muhtemel hiperlaktateminin oluşumunu açıkladığı ifade edilmiştir (Assarian ve ark., 2019).

cTnI, miyokardiyal hasarın ortaya konulmasında kullanılan kardiyak bir markırdır. Bu markır aktin filamentlerine bağlanır ve sitozolde düşük konsantrasyonlarda yer alıp kardiyomyositlerdeki bir tahribatta ekstrasellüler boşluğa salınması sonucu kardiyak tahribat hakkında bilgi elde etmemize imkan sağlar (Wells ve Sleeper, 2008). Bu çalışmadaki hipomagnezemik buzağıda hsTnI konsantrasyonu referans aralıklardan önemli ölçüde yüksek olduğu bulunmuştur. Mevcut çalışmadaki yüksek hassasiyetli kardiyak troponin-I düzeyinde meydana gelen yükseliş Kumar ve Sagar (2013), Chang ve ark. (1985) ve Helal ve ark. (2018) tarafından yapılan çalışmalarda hipomagnezemi ile ilişkili olarak troponin konsantrasyonunun şekillendiği bildirilmiştir. Bu çalışmada elde edilen bulgular literatürde bildirilenlerle uyum içerisindedir. hsTnI konsantrasyonunun yükselişin sebebinin magnezyumun, kalsiyumun hücre içi girişini kontrol ederek kardiyak düz kas hücrelerini etkilemesi ve buna bağlı olarak da miyokardiyal tahribatı tetiklenmesi şeklinde gerçekleştiği düşünülmektedir (Chang ve ark., 1985; Helal ve ark., 2018). Shoeib ve ark. (2019) tarafından hipomagnezemik deve buzağıları üzerinde yapılan bir çalışmada BUN ve fosfor konsantrasyonunun kontrol grubuna nazaran önemli düzeyde yüksek olduğu bulunmuştur. Bu çalışmadaki BUN ve fosfor düzeyinin yüksek olması bildirilen çalışmayla uyumludur ve bu yükselişin muhtemel sebebinin böbreklerde bir tahribatın olması ve açlığa bağlı olarak proteinleri yıkımlanması sonucu azotlu artıkların tutulumuyla olduğu ifade edilmiştir (Helal ve ark., 2018; Shoeib ve ark., 2019).

Ghanem (2013) tarafından hipomagnezemik buzağılar üzerinde yapılan bir çalışmada AST aktivitesinin kontrol grubuna göre önemli düzeyde yüksek olduğu belirlenmiştir. Bu mevcut çalışmadaki AST artışı bildirilen çalışmayla uyumludur ve yükselişin muhtemel sebebinin kas sisteminde meydana gelen tahribatla ilişkili olabileceğidir (Ghanem, 2013).

Hipomagnezik koyunlar üzerinde yapılan bir çalışmada kan glikoz konsantrasyonunun önemli düzeyde düşük olduğu belirlenmiştir (Helal ve ark., 2018). Bu çalışmamızda da kan glikoz konsantrasyonundaki düşüş bildirilen çalışmayla uyumludur. Hipogliseminin muhtemel sebebinin iştahsızlığa bağlı olarak gıda alımının azalımıyla meydana geldiği ifade edilebilir.

Sonuç; Bu çalışma ile hipomagnezemik bir buzağıda miyokardiyal hasarın şekillendiğini ve hematoloji-biyokimyasal parametrelerin de önemli ölçüde etkilendiği bulunmuştur. Ayrıca bu sunulan parametrelerin klinisyen veteriner hekimlerin karşılaşabileceği benzer olguların ayırıcı tanısında yardımcı olabilmesi açısından sunulmuştur.

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HUMAN GENE PREVENTS REGENERATION IN ZEBRAFISH-A SHORT REVIEW

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ABSTRACT

Zebrafish are known for their remarkable regenerative abilities. They can regenerate various tissues and organs, including the heart, spinal cord, fins, and retina. This regenerative capacity has made them a popular model organism for studying tissue regeneration and repair. Regeneration in zebrafish involves the activation of specific genes and signaling pathways. Several genes have been identified as critical players in the regeneration process. For example, the gene called neuro d1 is involved in spinal cord regeneration, while the gene fgf20a plays a role in heart regeneration. It's worth noting that zebrafish and humans share many genes that are conserved across evolution. However, the mechanisms and regulatory pathways controlling regeneration might differ between species. While zebrafish can regenerate complex tissues, such as the heart, humans have limited regenerative capabilities, particularly in organs like the heart and central nervous system. If there have been recent developments suggesting a specific human gene that prevents regeneration in zebrafish, it would be best to consult the latest scientific literature or news sources to obtain accurate and up-to-date information Damage to the tissue can be totally repaired through healing and regeneration, or it might result in functional loss and persistent scarring. The way that different tissues and species react to tissue injury differs. We can create strategies for tissue recovery in species with weak regenerative capacity (like humans) by understanding the easiest vertebrate model to use for research on regeneration is the zebrafish (Danio rerio). In this primer, we highlight the resources available for zebrafish regeneration research, give a general review of the mechanisms governing regeneration in this system, and talk about the field's future prospects. To maintain tissue homeostasis, the majority of vertebrate tissues undergo continual cell turnover. Cells that are no longer performing their role properly are removed and replaced by new ones. This ongoing cellular turnover is not uniform across all tissues: skin keratinocytes and gut enterocytes exhibit a high turnover rate, respectively.

Keywords: Zebrafish, Generation of zebrafish, Tissue

REFLECTION OF THE KIMMERLE`S ANOMALY ON THE MORPHOLOGICAL FEATURES OF THE ATLAS

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ABSTRACT

İntroduction. Up to 70% of cases, the cause of cerebral palsy is associated with the structural features of the main vessels involved in the blood flow. Among these, the role of the vertebral artery is great. Topographic and anatomical changes, especially in the cervical spine and vertebral artery canal, cause hemodynamic disorders. An important place among them is the formation of one of the malformations - "Kimmerle anomaly" - in the I cervical vertebra - atlas or in the III segment of the vertebral artery, which causes morphofunctional changes and has a detrimental effect on this artery. The defect that accompanies the formation of a foramen in the posterior arch of the atlas - foramen arcuale, according to one group of authors, is due to partial ossification of the fibrous connective tissue structures of the posterior atlanto-occipital membrane, according to other authors, with osteophytes and similar protrusions formed later, and according to a third group of authors, this foramen, found in all vertebrates, except for primates, is associated with the transformation into an atlas of free bone tissue - the proatlas.

Purpose. The aim of the investigation was to study the morphological features of the arcuate foramen of the atlas in people of different ages and to determine its individual variability.

Material and methods. The morphometric characteristics of 56 cervical vertebrae of different ages and 11 first cervical vertebrae with Kimmerle anomaly were investigated. After frontal (transverse) and sagittal (anteroposterior) measurements, the area of the transverse process foramen of the atlas was calculated using the formula for the area of the ellipse $S = n *A*B/4$ ($n = 3.14$; A is the transverse or frontal size; B is the anteroposterior or sagittal size). For statistical analysis of the obtained data, the package Windows 10.0 was used.

Results. In 6 bones, the groove of the vertebral artery deepens from the inside, closes with the bone cover and usually becomes to the round foramen of the arc. Various variants and asymmetry of arcuate foramen formation are revealed. In all cases, the area of the arcuate foramen is 2-2.5 times larger than the foramen of the transverse process of the atlas, and its area takes individually variable values from 24.45 mm^2 to 74.42 mm^2 (46 ± 7.31 mm^2 on average). Apparently, a large arcuate foramen creates favorable hemodynamic conditions, forming a reserve periarterial zone for the vertebral artery passing through it. In 25% of cases, the arcuate foramen is not completely formed, that is, elevations and protrusions of various sizes are detected above the groove of the vertebral artery. In 5 cases, the arcuate foramen was found unilaterally. With bilateral detection, the area of the foramen on the left is larger than on the right.

Conculation. The arcuate foramen causing the Kimmerle anomaly is distinguished by its individuality and asymmetry. The presence of a small arcus foramen can lead to acute cerebrovascular accident.

Keywords: Kimmerle anomaly, Arcuate foramen, Individual feature, Asymmetry

APPROACH TO HYPOTHYROIDISM IN PREGNANCY

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ABSTRACT

Thyroid gland diseases are the 2nd most common endocrinopathy in pregnancy. It is a condition that can have important consequences because the fetus is dependent on the mother for thyroid hormones until the 20th week. Its treatment is generally similar to non-pregnant patients. In overt hypothyroidism (0.4%) fT4 decreases, while thyroid stimulating hormone (TSH) increases. In subclinical hypothyroidism (3%), TSH is increased, but fT4 is normal and patients are asymptomatic. The fetal impact of subclinical status is similar to overt hypothyroidism. In addition, although less than overt hypothyroidism, the possibilities of preterm labor, preeclampsia, ablatio placenta are increased in subclinical hypothyroidism. The most common cause is iodine deficiency (autoimmune thyroiditis and iatrogenic conditions are other causes). Since Türkiye is a moderate risk region for iodine deficiency, Turkish Endocrinology and Metabolism Association recommends screening in pregnant women at the first visit. The American Society of Endocrinology and The European Thyroid Association recommend thyroxine in case of hypothyroidism (1st trimester > 2.5mIU/ml, $2^{nd}/3^{rd}$ trimester > 3 mIU/ml). If TSH > 2.5mIU/ml and fT4 level is low, treatment should be started. If TSH > 2.5mIU/ml but fT4 level is normal, evaluation for thyroid autoantibodies is necessary. If autoantibody is positive, treatment should be started, but if it is negative, treatment should be discussed. It is important to start treatment in the early stages of pregnancy. Levothroxine (LT4) is used in the treatment. 1st trimester, LT4 requirement increases by 30-50% (increase dose if already used) (increase 25 micrograms). LT4 dose is started at 1-2 mg/kg/day (initial dose is 100-150mg/day). The dose increase is adjusted as 25-50 mg/day. The target TSH value should be determined as 0.5–2.5 mIU/ml. The dose is increased according to the TSH control levels (TSH level control every 4-6 weeks). As a dose increase recommendation, it can be recommended to use 2 times a week/twice the dose used (29% increase in total). LT4 should be taken in the morning before breakfast. The dose should be reduced due to decreased use of LT4 in the postpartum period (30% reduction or 25mcg dose reduction). In conclusion, hypothyroidism can be an important cause of maternal and fetal morbidity so the diagnosis / treatment of hypothyroidism in pregnant women is important.

Key words: overt hypothyroidism, subclinical hypothyroidism, pregnancy

DETERMINING THE KNOWLEDGE LEVELS OF HIGH SCHOOL STUDENTS ON HUMAN PAPILLOMA VIRUS (HPV) AND ITS VACCINE

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ABSTRACT

Introduction: In this study, it was aimed to determine the knowledge level of high school students about Human Papilloma Virus (HPV) and its vaccine.

Method: This study was carried out on students in 30 high schools in Kahramanmaraş, located in the Mediterranean Region of Turkey. The students were informed before the study and 3306 students who gave their consent were included in the study. A questionnaire prepared by the researchers was applied to the participants. In the questionnaire, there were questions questioning the sociodemographic data of the students and their knowledge level about HPV and its vaccine.

Results: Of the students, 2062 (62.4%) were female, 1244 (37.6%) were male, with a mean age of 15.95±1.05 (min =14, max =20). 1171 (35.4%) of the participants stated that they had heard of HPV before, while 2135 (64.6%) stated that they had not. 474 (38.1%) of men and 697 (33.8%) of women stated that they had heard of HPV before . Men had a higher rate of hearing about HPV compared to women (p=0.012). In addition, 247 (7.5%) of the participants stated that they had heard of the HPV vaccine before. 321 (9.7%) of the students stated that HPV is sexually transmitted, while 2985 (90.3%) stated that it is not transmitted. 534 (16.2%) of the students stated that the HPV vaccine protects people from HPV . 205 (6.2%) of the students agreed with the proposition "HPV can cause cervical cancer" , 160 (4.8%) disagreed, and 2941 (89.0%) did not agree.

Conclusion: In our study, it was determined that high school students had a significant lack of knowledge about HPV and its vaccine. The lack of knowledge of the participants, especially about the transmission routes of HPV , was remarkable.

Key words: Human Papilloma Virus, vaccine, smear

EVALUATION OF SERUM AND BRAIN ARGININE VASOPRESSIN PEPTIDE, CORTISTATIN AND THYROTROPIN RELEASING HORMONE LEVELS IN PENTYLENETETRAZOLE-INDUCED SEIZURES IN RATS

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Abstract

Epilepsy is one of the most common neurological disorder. Neuropeptides can cause epileptic seizures by disturbing the balance between inhibition and excitation. Therefore, it is important to determine the effects of seizures on neuropeptide levels. In this study, it was aimed to determine the serum and brain levels of arginine vasopressin peptide (AVP), cortistatin and thyrotropin releasing hormone (TRH) levels in a PTZ-induced seizure model.

For this purpose, 24 adult Wistar albino male rats were randomly divided into three groups (n=8): Control, Acute PTZ (APTZ), VPA+APTZ groups. Saline (SF) at a dose of 1 ml/kg per was given to the control group orally by gavage. Valproate (VPA) at a dose of 100 mg/kg was given to VPA+APTZ group, orally administered by gavage. Half an hour after VPA administration, PTZ was injected at a dose of 50 mg/kg (i.p) to VPA+APTZ and APTZ groups to induce seizures. Seizures were observed for 30 minutes after PTZ injection. Blood and brain tissues were taken from the rats under general anesthesia. Serum and brain AVP, cortistatin and TRH levels in all groups were determined by using ELISA. There was no significant difference in terms of seizure activity between the VPA+APTZ and APTZ groups. There was no significant difference between the groups in terms of serum and brain AVP, coristatin and TRH levels.

In conclusion, the PTZ-induced acute seizure model does not cause changes in AVP, cortistatin and TRH levels.

Keywords: Epilepsy, cortistatin, TRH, AVP

1. Introduction

Epilepsy is a disorder of the central nervous system that affects around 70 million people worldwide. Approximately 25% of patients do not experience any improvement in seizures despite the use of antiepileptic drugs at the appropriate dose and frequency, and drug-resistant epilepsy is observed. Epilepsy constitutes a significant economic burden in society (Kutlu et al., 2010).

The pathophysiology of epilepsy has not been fully elucidated. Current epilepsy drugs are symptomatic. these drugs have anti-seizure effect rather than antiepileptic effect. For these reasons, there is a need for new antiepileptic drug studies and studies that will contribute to the elucidation of the pathophysiology of epilepsy. Epileptic seizures result from the disruption of the delicate balance between excitation and inhibition. Neuropeptides may contribute to this imbalance by modulating the effects of classical inhibitory (GABA) and excitatory (glutamate)

neurotransmitters. Neuropeptides can affect the balance between inhibition and excitation by acting on the release of neurotransmitters and at the receptor level (Clymen at al., 2014). Because of these properties, researchers have recently focused on elucidating the relationship between neuropeptides and epilepsy (Clymen et al., 2014).

AVP is synthesized in the supraoptic and paraventricular nuclei of the hypothalamus (Clymen et al., 2014). AVP mRNa değerlendirmen kainik asit indüklü muayenelerden sonra bildirilmektedir (Iwanaga et al., 2011). Febril konvulsiyon modelinde kan ve hipotalamus seviyelerinin arttığı bildirilmektedir (Clymen et al., 2014). Cortistattin is expressed in the cortex and hippocampus. It has been reported that corstistatin expression increases in immature rats after kaic acid-induced seizures (Wilson et al., 2005). In addition, it has been reported that cortistatin administration has anticonvulsant and neuroprotective effects in kainic acid-induced seizures in rats (Braun et al., 1998). TRH is a tripeptide secreted from the hypothalamus that stimulates the release of thyroid-releasing hormone and prolactin from the anterior pituitary. TRH is also expressed in the cerebral cortex, hippocampus, amygdala, striatum, and brain stem. It has been reported that TRH and TRH mRNA levels increase in electroconvulsive and amygdala-kindled seizures in the amygdala and hippocampus, while THR-R and THR-R mRNA levels decrease (Clymen et al., 2014). Despite the studies on these 3 neuropeptides, their levels in the blood and brain have not been investigated in the PTZ-induced acute seizure model (myoclonic seizure model). The role of any of the neuropeptides in epilepsy has not been firmly established, so their role in any type of epilepsy cannot be ruled out (Dobolyi et al., 2014).

In this study, it is aimed to determine the serum and brain levels of AVP, cortistatin and TRH neuropeptides in acute PTZ-induced seizures, which is a popular model frequently used in antiepileptic drug studies.

2. Materials and Methods

2.1 Experimental animals

This study was obtained from Van Yüzüncü Yıl University Experimental Animals Unit on experimental animals. This study was carried out after obtaining the necessary permissions from Van Yüzüncü Yıl University Local Ethics Committee (Date and number of documents: 29.11.2018/11).

Twenty-four male Wistar albino rats were randomly divided into 3 groups (n=8):

1. Group Acute control (AC): 1 ml/kg SF po (Erkeç et al., 2018)

Group 2 Acute PTZ (APTZ): 50 mg/kg PTZ ip (Atatie et al., 2013)

3. Group Acute valproate (VPA+APTZ): VPA 100 mg/kg po (İlhan et al., 2006) +50 mg/kg PTZ ip.

2.2. Experiment protocol

The rats in the control group were administered 1 ml/kg of saline per orally. VPA 100mg/kg per orally administered by gavage to the rats in the VPA+APTZ group, a single dose (50 mg/kg in convulsant dose) PTZ was administered 30 minutes later. PTZ was administered to the rats in the APTZ group once as 50 mg/kg ip (Ataie et al., 2011). If seizures were observed for 30 minutes after PTZ procedure, scores were recorded. After the anesthesia procedure, blood and brain were taken. VPA is one of the most commonly used antiepileptic drugs due to the broad spectrum of epileptic disorders. Although the mechanism of antiepileptic action is not entirely clear, GABAA receptors are thought to be responsible for the main antiepileptic effect. Ayrıca, VPA, GABA üretimini arttırır, GABA transaminazını azaltır ve eksitatör nörotransmisyonu

engeller. For this purpose, VPA was administered to the treatment group in this study. Brain tissues taken from rats were stored at -80°C until the study day. After the blood was centrifuged, the serum portion was separated and stored at -20 in eppendorfs. ELISA work was carried out in the shortest possible time. In order to detect changes in the hormonal system, AVP, cortistatin and TRH levels in serum and brain tissues were measured by ELISA method using ready-made commercial kits. ELISA method is a widely used laboratory method for antigen-antibody matching and determination of hormone levels.

2.3. Statistical analysis

Descriptive statistics for the featured feature; Expressed as Median, Mean, Standard Deviation, Minimum and Maximum value. The difference between the groups in terms of this feature was compared with the Mann-Whitney U test. The statistical significance level was taken as 5% in the calculations and the SPSS statistical package program was used for the calculations.

3. Findings and Discussion

Initial myoclonic jerk (IMJ) activity was seen in all mice injected with 80 mg/kg, i.p. PTZ.

While tonic generalized seizure was seen in only one mouse from each group, tonic generalized extension type seizure activity was not observed. There was no significant difference between the groups in terms of IMJ latency (p>0.05, Table 1). All mice completed the experiment alive, no ex was observed in any mice during seizures.

Tablo 1. Descriptive statistics and comparison results of IMJK seizure latency by groups

Groups	Mdyan	Mean	Srf Dev	Std Error	Min	Max	P
APTZ	247	249.43	164.234	62.075	77	512	0.784
VAPA+APTZ	144	225.43	156.735	59.240	53	446	

AVP: Arginine vasopressin; APTZ: acute pentylenetetrazole; VPA: valproat

There was an increasing trend in terms of AVP levels in the APTZ and VPA+APTZ groups in the brain and serum tissue between the groups. However, the difference was not statistically significant (p>0.05, Table 2 and 3).

Tablo 2. Brain tissue AVP, Cortistatin and TRH levels

	Control	VPA+APTZ	APTZ
AVP	3.93±0.63 [a]	4.39±0.58 [a]	4.30±1.27 [a]
TRH	0.91±0.21 [a]	0.61±0.18 [a]	1.02±0.47 [a]
Corsistatin	2.30±0.50 [a]	3.24±0.55 [a]	2.86±1.27 [a]

Different letters on the same line indicate statistical significance. AVP: Arginine vasopressin; APTZ: acute pentylenetetrazole; VPA: valproat

There was no difference in serum and brain cortistatin levels between the groups (p>0.05, Tables 1 and 2).

Tablo 3. Serum AVP, Cortistatin and TRH levels

	Control	VPA+APTZ	APTZ
AVP	4.16±0.67 [a]	4.74±0.45 [a]	4.62±1.01 [a]
TRH	1.05±0.15 [a]	1.00±0.18 [a]	1.06±0.22 [a]

Corsistatin	3.14 ± 0.80 [a]	2.93 ± 0.64 [a]	2.46 ± 0.92 [a]

Different letters on the same line indicate statistical significance. AVP: Arginine vasopressin; APTZ: acute pentylenetetrazole; VPA: valproat

There was an increase in cortistatin levels in brain tissue compared to control and a decrease in serum tissue between groups. But the difference was not statistically significant

Arginine-vasopressin peptide (AVP) is synthesized in the supraoptic and paraventricular nuclei of the hypothalamus. In various seizure models, AVP is reported to have proconvulsant effects. It has been reported that AVP mRNA levels are increased in the rat hippocampus in a kainic acid-induced seizure model (Sun et al., 1996). Exogenous AVP administration has been reported to cause convulsions or abnormal behavior associated with epileptic discharges in rats (Kruse et al., 1977; Abood et al., 1980). In our study, there was an increasing trend in terms of AVP levels in the APTZ and VPA+APTZ groups in the brain and serum tissue compared to the control, in line with previous studies. But the difference was not statistically significant ($p<0.05$). Sun et al. (1996) reported an increase in AVP mRNA levels in their study. This increase in mRNA levels in our study is probably not yet fully reflected in blood and brain AVP levels.

TRH is a tripeptide released from the hypothalamus that stimulates the release of thyroid stimulating hormone and prolactin from the anterior pituitary. TRH is also expressed in other brain regions, including the cerebral cortex, hippocampus, amygdala, striatum, and brainstem (Clynen et al., 2014). It has been reported that TRH and TRH mRNA are upregulated a few days after electroconvulsive and amygdala ignition seizures, and TRH receptor and receptor mRNA are down-regulated in seizure-prone areas such as the amygdala and hippocampus (Knoblach & Kubek, 1996a, b; Kubek et al., 1985). Similar to previous studies, in our study, there was an increasing trend in TRH brain and serum levels in the APTZ group compared to the control group. But the difference was not statistically significant. The reason for the differences may be due to the different seizure model between studies. In addition, in our study, TRH levels were investigated in tissues obtained immediately after the seizure, in accordance with the acute PTZ-induced seizure model. In the previous study, levels were looked at a few days after the seizure.

Cortistatin is a neuropeptide that has structural similarity to somatostatin and therefore binds to somatostatin receptors (Duran Prado et al., 2013). While a significant increase in Cortistatin mRNA was reported in immature rats in the kaic acid epilepsy model, no significant changes were detected in mature rats (Calbet et al., 1999). In our study, no significant change was found in serum and brain cortistatin values in line with the previous study. It has been reported that cortistatin has an anticonvulsive effect against kainic acid-induced seizures in rats and plays a neuroprotective role as it significantly reduces kainic acid-induced cell loss in cortical and hippocampal neurons (Braun et al., 1998). In our study, an increasing trend is observed in brain cortistatin values in both APTZ and VPA+APTZ groups. This may be considered as a result of the reflection of increased mRNA values on cortistatin values in brain tissue.

4. Conclusion and Recommendations

As a result, no significant change was detected in brain and serum AVP, TRH and cortistatin values in the acute seizure model induced by PTZ. Our study is important in that it is the first study in this field. However, being an acute study is the most important limitation of our study. In future studies, serum and brain levels of these 3 peptides should be studied with the same method, but in chronic epilepsy models. Thus, the effects of chronic seizures on these peptide levels can be detected more clearly in tissues and the relationship of AVP, TRH and cortistatin neuropeptides with the pathogenesis of epilepsy can be revealed

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IMPROVEMENT OF QUALITY OF LIFE OF WOMEN WITH BREAST SURGERY AFTER REHABILITATION PROGRAM

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Background: Early breast cancer diagnosis and therapeutic advances have contributed to increasing survivorship, yet little is known about how women's quality of life (QoL) is affected.

Objective: To evaluate the QoL of women who underwent breast surgery with axillary lymph node dissection after a rehabilitation program was implemented.

Methodology: Quantitative pre- and post-intervention assessment study involving 48 women recruited from a Hospital Center between 2018 and 2019. A three-month rehabilitation program was implemented in the participants' homes. The instruments used were EORTC-QLQ-C30 and BR23.

Results: After the program implementation, the participants' QoL improved in functional aspects (role, emotional, cognitive, social, body image, future perspectives) and symptoms (fatigue, pain, insomnia, systemic therapy side effects, and breast and arm symptoms).

Conclusion: This program has positively influenced the participants' QoL, providing them with the knowledge and skills to take an active and informed part in their motor rehabilitation.

Keywords: quality of life, breast cancer, rehabilitation nursing, rehabilitation programs, breast surgery, axillary lymph node dissection.

IN-VITRO CEFTAZIDIME-AVIBACTAM ACTIVITY AGAINST KLEBSIELLA PNEUMONIAE AND PSEUDOMONAS AERUGINOSA GROWN IN INTENSIVE CARE UNIT CULTURES

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ABSTRACT

In recent years, antimicrobial resistance has increased significantly in hospitalized patients. Carbapenem-resistant Pseudomonas aeruginosa and carbapenem-resistant Enterobacteriaceae are at the top of the list in the World Health Organization's report on pathogenic agents that threaten human health. Carbapenems have long been preferred for the treatment of serious infections due to their broad spectrum of effect. However, due to the increase in their inappropriate use, resistance rates to carbapenems have started to increase in both enteric and non-fermentative gram-negative bacteria. Due to this increasing resistance, new antibiotic options have been investigated. Recently, ceftazidime-avibactam has been introduced as a beta-lactam/beta-lactamase inhibitor combination. The aim of this study was to evaluate the susceptibility of Klebsiella pneumoniae and Pseudomonans aeruginosa isolates from various specimens sent to the microbiology laboratory from the intensive care units of our hospital to various antibiotics and ceftazidime avibactam. Of the total 2730 cultures grown in our study, 576 (21%) were K.pneumoniae and 208 (7.6%) were P.aeruginosa. 354 (61.4%) of K.pneumoniae isolates and 97 (46.6%) of P.aeruginosa isolates were carbapenem resistant. Fourteen (2.4%) of K.pneumoniae isolates and seven (3.3%) of P.aeruginosa isolates were resistant to ceftazidime-avibactam. All isolates resistant to ceftazidime-avibactam were also resistant to carbapenems. According to the results of our study, the development of new agents for the treatment of resistant gram negative pathogens is of critical importance. As a result of the findings of our study, ceftazidime-avibactam was found to be effective against K.pneumoniae and P.aeruginosa.

Keywords: Seftazidim-avibaktam, *K.pneumoniae, P.aeruginosa*

1. Introduction

The increasing occurrence of Enterobacteriaceae and non-fermentative bacteria resistant strains frequently found in intensive care units poses a significant problem for clinicians in treating infections caused by these species. Carbapenems are one of the first-choice antibiotic groups for treating these infections (Taşova 2011). However, the excessive use of carbapenems has led to the emergence of carbapenem-resistant strains, especially in the Enterobacteriaceae family (Nordmann, Naas, and Poirel 2011). Due to the rapid increase in antimicrobial resistance among hospitalized patients in recent years, new drug development efforts have accelerated (Bradford 2001).

Colistin (Polymyxin E), a member of the polymyxin group of antibiotics, has been used as a last-resort antibiotic option for carbapenem-resistant Gram-negative bacterial infections. Despite its limited effectiveness and toxicity issues, there have been reports of increasing resistance to colistin in some regions (Andrade et al. 2020; Bialvaei and Samadi Kafil 2015). Recently, ceftazidime-avibactam, a combination of a beta-lactam/beta-lactamase inhibitor, has

been introduced for clinical use. Avibactam is a novel non-beta-lactam beta-lactamase inhibitor with a broader spectrum of activity than classical beta-lactamases. It exhibits broad Gram-negative activity, including carbapenem-resistant Enterobacteriaceae and Pseudomonas aeruginosa, while also showing minimal activity against Acinetobacter spp., anaerobes, and Gram-positive bacteria (Castanheira et al. 2014; Ehmann et al. 2012). The combination of ceftazidime and avibactam has been approved by the U.S. Food and Drug Administration (FDA) for intra-abdominal infections and complicated urinary tract infections in 2015 and for hospital-acquired and ventilator-associated pneumonia in 2018 (Shirley 2018).

The aim of this study is to evaluate the susceptibility of Klebsiella pneumoniae and Pseudomonas aeruginosa isolates obtained from various samples sent to our hospital's intensive care units to various antibiotics and ceftazidime-avibactam.

2. Materials and Methods

Between May 2021 and May 2023, a total of 2730 cultures were obtained from various samples (blood cultures, sputum cultures, tracheal aspirate cultures, bronchoalveolar lavage cultures, wound cultures, abscess cultures, urine cultures) and were plated on 5% sheep blood agar and Eosin Methylene Blue (EMB) agar, then incubated at 37°C for 24-48 hours. After this period, the colony morphology of the grown microorganisms was examined, and identification and antibiotic susceptibility testing were performed using the Phoenix 100 automated system (Becton-Dickinson, USA) according to the European Committee on Antimicrobial Susceptibility Testing (EUCAST) criteria. Disk diffusion test with CAZ/AV 10/4 mg (Bioanalyse) was used to determine the susceptibility of the isolates to ceftazidime-avibactam, and the zone diameters were evaluated according to EUCAST guidelines.

3. Findings and Discussion

In our study, a total of 576 (21%) isolates were Klebsiella pneumoniae, and 208 (7.6%) were Pseudomonas aeruginosa among the 2730 cultures obtained. Among the K. pneumoniae isolates, 354 (61.4%) were carbapenem-resistant, while 97 (46.6%) of P. aeruginosa isolates showed carbapenem resistance. Out of the K. pneumoniae isolates, 14 (2.4%) and 7 (3.3%) of P. aeruginosa isolates were resistant to ceftazidime-avibactam, respectively. All the isolates resistant to ceftazidime-avibactam were also found to be resistant to carbapenems. Of the K. pneumoniae isolates, 186 (32.2%) were isolated from blood samples, 169 (26.5%) from tracheal aspirates, and 153 (26.5%) from urine samples. Among the P. aeruginosa isolates, 106 (50.9%) were from tracheal aspirates, 47 (22.5%) from urine samples, and 25 (12%) from blood samples. Furthermore, 11 (1.9%) K. pneumoniae isolates and 2 (0.9%) P. aeruginosa isolates were found to be resistant to colistin. The 2 P.aeruginosa isolates resistant to colistin were susceptible to ceftazidime-avibactam. Only 1 of 11 K.pneumoniae strains resistant to colistin was also resistant to ceftazidime-avibactam. When examining the susceptibility rates of carbapenem-resistant strains to colistin and ceftazidime-avibactam, they were found to be 97.1% and 95.3%, respectively. Colistin showed the highest susceptibility rate. After colistin and ceftazidime-avibactam, amikacin (55.8%) and gentamicin (32.9%) were found to be the most effective antibiotics against K. pneumoniae and P. aeruginosa isolates obtained from our intensive care units, respectively.

Carbapenemase-producing Enterobacteriaceae members causing infections in intensive care units represent one of the major challenges in their treatment worldwide. Investigating the resistance mechanisms of these bacteria to antibiotics and finding solutions to combat them

have become a significant concern for microbiology laboratories. Studies have reported that K. pneumoniae is responsible for 85% of infections caused by carbapenem-resistant enteric bacteria, followed by E. coli at 1.7% (Oteo et al. 2013). Zhang et al. investigated Enterobacteriaceae infections reported in 25 hospitals in China in 2015 and emphasized that K. pneumoniae (73.3%), E. coli (16.6%), and E. cloacae (7.1%) were the most prevalent species among these cases (Zhang et al. 2018).

Ceftazidime-avibactam is a combination of the third-generation cephalosporin, ceftazidime, and the beta-lactamase inhibitor, avibactam, administered intravenously in a 4:1 ratio (Shirley 2018). Studies have shown that 99% of K. pneumoniae isolates, including ESBL and AmpC-producing 34,000 Enterobacteriaceae strains, were susceptible to ceftazidime-avibactam in a two-year surveillance study (Karlowsky et al. 2016).

Another study focusing on carbapenemase-producing K. pneumoniae isolates found a 97.5% susceptibility to ceftazidime-avibactam (Kazmierczak et al. 2016). In our study, among the carbapenem-resistant K. pneumoniae isolates, 96% were susceptible to ceftazidime-avibactam, which is in line with the literature.

In a study conducted by Koçak et al. colistin resistance of 81 isolates of carbapenem-resistant K. pneumoniae was found to be 39.51% and in a study conducted by Aygar, colistin resistance in carbapenem-resistant K. pneumoniae was found to be 36.4% (Aygar 2020; Koçak andazırolan n.d.). In our study, colistin resistance in carbapenem-resistant K. pneumoniae was found to be 3%.

In terms of antipseudomonal activity, a study involving 7062 Pseudomonas spp. isolates reported a 92% susceptibility rate to ceftazidime-avibactam (Nichols et al. 2016). In a global surveillance study consisting of 5716 P. aeruginosa isolates, the susceptibility rate to ceftazidime-avibactam was found to be 92.4%, while the susceptibility rate to colistin was 99.6% (Kazmierczak et al. 2018). Another study focusing on carbapenemase-producing Pseudomonas isolates found a 78% susceptibility rate to ceftazidime-avibactam (Aydemir et al. 2019). In our study, the susceptibility rate of carbapenem-resistant P. aeruginosa isolates to ceftazidime-avibactam was 92%, which is consistent with the literature.

4. Conclusion and Recommendations

The susceptibility patterns of bacteria can vary from one region to another, and even from one hospital to another. As a result, our findings indicate that ceftazidime-avibactam is a successful alternative treatment option for carbapenem-resistant P. aeruginosa and K. pneumoniae isolates. Additionally, aminoglycosides may be used in combination therapy for the treatment of colistin-resistant isolates. Studies on ceftazidime-avibactam, which was developed to combat ESBL and carbapenemase-induced bacterial resistance, have shown promising results. However, the development of resistance and unresponsiveness to treatment with this antibiotic have also been reported (Gaibani et al. 2020).

In conclusion, carbapenem resistance has reached a frightening level worldwide. The discovery of new antibiotics and the development of new treatment protocols to combat infections caused by carbapenemases are of great importance in the detection of infections caused by these bacteria and the development of infection control measures. Moreover, preventing the spread of resistant strains is essential. Full compliance with isolation precautions and the rational use

of antibiotics are necessary in all healthcare facilities. It should be remembered that more studies are needed to obtain more accurate information in this regard.

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INVESTIGATION OF GENOTOXIC EFFECT OF HERBICIDE ADENGO AT GOLDFISH (CARASSIUS AURATUS) AFTER 7 DAYS OF TREATMENT

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ABSTRACT

Experimental data notifay that various pesticides have mutational effects such as chromosomal changes, DNA damage, micronuclei formation. This investigation was done to examine the genotoxic effects of herbicide adengo on goldfish Carassius auratus for seven (7) days treatment in different concentration : In the first aquarium the fish were treated with herbicide whose concentration was 0.2 ml herbicide /l water; in the second aquarium the fish were treated with the concentration of 0.3 ml herbicide /l water; in the third aquarium the fish were treated with the concentration of 0.4 ml herbicide /l water; and in the fourth aquarium the fish were treated with the concentration of 0.5 ml herbicide /l water. Fifth aquarium use as control, without herbicide, contain only drinking water.

The herbicide contain active substance such as : izoksaflutol 225 g/l, and tienkarbazon-metil 90 g/l.
The results show significant increase of number of micronuclei in erythrocytes of treated goldfish, compared with control group.

Keywords: herbicide; adengo; mn test; goldfish

INVESTIGATION OF THE EFFECT OF VIRTUAL REALITY ON COMFORT AND SATISFACTION LEVELS IN ONCOLOGY PATIENTS RECEIVING CHEMOTHERAPY TREATMENT

KEMOTERAPİ TEDAVİSİ ALAN ONKOLOJİ HASTALARINDA SANAL GERÇEKLİĞİN KONFOR VE MEMNUNİYET DÜZEYLERİNE ETKİSİNİN İNCELENMESİ

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ABSTRACT

Aim: In this study, the effect of virtual reality videos watched by chemotherapy patients on the comfort and satisfaction levels of patients was investigated.

Materials and Methods: 72 patients aged 18 years and older who received chemotherapy treatment were included in the study. Simple random sampling technique was used for sample selection from the population. The universe of this research; It consists of oncology patients aged 18 and over who are treated in Bitlis State and Tatvan State Hospitals. In the collection of data; Demographic characteristics, General Comfort Scale and Satisfaction Scale (visual comparison scale of satisfaction) were used. The data were collected by the researcher by face-to-face interview method between January 2023 and June 2023. Virtual reality video was watched for 20 minutes. Data; Shapiro-Wilk test, Levene test, t test and Wilcoxon signed rank tests were used.

Results: While the mean score of the patients' satisfaction level before the virtual reality application was 5, it was determined that the mean score increased to 8 after the application, and there was a statistically significant difference ($p < 0.001$). While the mean comfort level score of the patients before the application was 123.50, the mean comfort level score was found to be 125.00 after the application and it was found to be statistically significant ($p < 0.002$).

Conclusion: It was observed that watching virtual reality videos in oncology patients receiving chemotherapy had a positive effect on their comfort and satisfaction levels.

Keywords: Chemotherapy, Comfort, Satisfaction, Oncology, Virtual Reality

ÖZET

Amaç: Bu araştırmada kemoterapi hastalarında izletilen sanal gerçeklik videolarının hastaların konfor ve memnuniyet düzeylerine etkisi incelenmiştir.

Materyal ve Metot: Araştırmaya 18 yaş ve üstü 72 kemoterapi tedavisi alan hasta dahil edildi. Popülasyondan örneklem seçimi için basit tesadüfi örnekleme tekniği kullanıldı. Bu araştırmanın evrenini; Bitlis Devlet ve Tatvan Devlet Hastanelerinde tedavi gören 18 yaş ve üzeri onkoloji hastaları oluşturmaktadır. Verilerin toplanmasında; Demografik özellikler, Genel Konfor Ölçeği ve Memnuniyet Ölçeği (memnuniyetle ilişkin görsel kıyaslama ölçeği) kullanıldı. Veriler araştırmacı tarafından yüz yüze görüşme yöntemi ile Ocak 2023- Haziran 2023 tarihleri arasında toplandı. Sanal gerçeklik video izletilmesi 20 dakika uygulandı. Veriler; Shapiro-Wilk testi, Levene testi, t testi ve Wilcoxon işaretli sıralama testleri kullanılarak değerlendirildi.

Bulgular: Hastaların sanal gerçeklik uygulaması öncesi memnuniyet düzeyi puan ortalamaları 5 iken uygulama sonrası puan ortalamalarının 8'e yükseldiği ve istatistiksel olarak anlamlı bir farklılığın olduğu saptanmıştır (p<0.001). Hastaların uygulama öncesi konfor düzeyi puan ortalamaları 123.50 iken uygulama sonrası konfor düzeyi puan ortalamaları 125.00 olarak saptanmış ve istatistiksel açıdan anlamlı bulunmuştur (p<0.002).

Sonuç: Kemoterapi alan onkoloji hastalarında sanal gerçeklik videolarının izletilmesinin konfor ve memnuniyet düzeyleri üzerinde olumlu etki ettiği görüldü.

Anahtar Kelimeler: Kemoterapi, Konfor, Memnuniyet, Onkoloji, Sanal Gerçeklik

THEMATIC ANALYSIS OF INCLUSION TO CHAMPIONSHIP SPORTS IN GIRLS WITH A Qualitative Approach (Case Study: Girls of Tabriz)

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ABSTRACT

Today, the development of women's championship sports is one of the main issues in the development of sports in countries. The purpose of this research is to study the reasons that why girls turn to championship sports. The research method which is implemented in this research is a qualitative method and the thematic analysis approach was used as the operational method of the research. The female athletes of Tabriz in 1400 include the participants of the research. The sampling method is a purposeful and theoretical method and after conducting 30 interviews, the theoretical saturation was achieved. Semi-structured interviews were used to collect the research data. Validity, portability, reliability and verifiability measurements have been used to test the validity and reliability of the data. Findings indicate that the most important reasons of girls' intention to championship sports in Tabriz are: infrastructural factors (general and specialized facilities, economic and cultural capital of the family, management structure), technical conditions and factors (identification and management of talents, supporting the female sports and athletes and their professional development), social factors (social support, mass and virtual media, leisure time, a proper job in sports, a high social status, increasing the social capital and overcoming the gender stereotypes), agent factors (personal competencies, personal interests, a desire to maintain the health, vitality, and body beauty).

CONSUMING KIWI FRUIT HAS HEALTH BENEFITS, AND USING CARBON DOTS IN CANCER NANOMEDICINE PRESENTS OPPORTUNITIES AND CHALLENGES IN RELATION TO PHARMACOLOGICAL ACTIONS

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ABSTRACT
The natural fruit of China, Actinidia chinensis Planch. (A. chinensis), sometimes known as the Chinese kiwifruit, is becoming more and more well-liked because of its alluring economic, nutritional, and health benefits. The entire A. chinensis plant, including the fruits, leaves, vines, and roots, is used in China mostly as food or an addition in food products as well as a folk remedy. It is an excellent source of minerals, triterpenoids, polyphenols, vitamin C, carbohydrates, and amino acids. These components give the A. chinensis a variety of pharmacological properties, such as antitumor, antioxidant, antiinflammatory, immunoregulatory, hypolipemic, antidiabetic, and cardiovascular protective activities, indicating that it may be useful in the prevention and treatment of pathologies linked to cancer, oxidative stress, and ageing. Unleashing the mysteries of traditional Chinese medicine, the Chinese Actinidia Planch. kiwi has long been revered for its extraordinary healing properties, encompassing a wide spectrum of ailments, including cancer and cardiovascular disease. Despite its acclaimed efficacy, the exact therapeutic mechanisms of kiwi have remained shrouded in obscurity. In this comprehensive article, we delve into the depths of this natural wonder, exploring its biological properties and diverse chemical constituents, such as polysaccharides, triterpenes, phenols, flavonoids, and more. Recently, there has been a lot of interest in the use of natural resources in the synthesis of carbon dots (CDs). Here, discarded kiwi fruit peels were successfully hydrothermally carbonized to produce useful fluorescent carbon dots (KN-CDs). The intricate etiology of cancer involves the interplay between hereditary predispositions and environmental factors. Within this intricate landscape, various immune cells, such as T cells, macrophages, and neutrophils, emerge as integral players in the formation and progression of cancer. Through extensive research, we have uncovered that kiwi possesses a profound ability to modulate immunity. This article serves as a compendium, consolidating our findings on kiwi involvement in cancer immunity and shedding light on the underlying mechanisms that drive its remarkable effects. Consuming kiwis is linked to a number of positive health effects. Thus, the purpose of this article is to present an overview of probable kiwifruit impacts on the onset or advancement of cancer. The current study will discuss the mechanism, production process, ongoing research, and use of carbon dot CDs for cancer treatment and diagnosis.

Keywords: Carbon dot (CDs), Cancer, A. chinensis, Chinese kiwifruit, Flavonoids

THE EFFECT OF RELIGIOUS INTERVENTION ON VITAL FINDINGS IN COMA PATIENTS IN THE SURGICAL INTENSIVE CARE UNIT

CERRAHI YOĞUN BAKIMDA YATAN KOMA HASTALARINDA DINSEL MÜDAHALENIN YAŞAM BULGULARINA ETKISI

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ABSTRACT

Aim: In this study, the effect of the Holy Quran played by coma patients on vital signs (fever, pulse, respiration, systolic-diastolic blood pressure, saturation) was investigated.

Materials and Methods: The type of this research is a descriptive and relation-seeking research within the scope of quantitative research. The population of the study consists of patients aged 18 and over who are treated in the surgical intensive care units of Bitlis and Tatvan state hospitals. 72 patients randomly selected for this study constitute the study sample. Simple random sampling technique was used for sample selection from the population. In the collection of data; demographic characteristics, vital signs follow-up form and Glasgow Coma Scale were used. The data were collected by the researcher by face-to-face interview method between January 2023 and June 2023. The Surah Rahman in the Qur'an was listened to with headphones for 20 minutes. Data; Shapiro-Wilk test, Levene test, T test and Wilcoxon signed rank tests were used.

Results: The mean heart rate of the patients before music therapy (Qur'an) was 88, and the mean heart rate after the intervention was 85, and the difference was statistically significant ($p<0.017$). The mean systolic blood pressure of the patients before music therapy (Quran) was 129.50 mmHg, and the mean systolic blood pressure was 125 mmHg after the intervention, and the difference was statistically significant ($p<0.021$). No significant difference was found in other findings.

Conclusion: It was observed that listening to the Quran with headphones had a positive effect on vital signs in coma patients hospitalized in the surgical intensive care unit.

Keywords: Nursing, Vital Signs, Intensive Care, Quran

ÖZET

Amaç: Bu araştırmada koma hastalarına dinletilen Kur'an-ı Kerim'in yaşam bulguları (ateş, nabız, solunum, sistolik-diyastolik kan basıncı, satürasyon) üzerine etkisi incelenmiştir.

Materyal Ve Metot: Bu araştırmanın türü nicel araştırma kapsamında tanımlayıcı ve ilişki arayıcı bir araştırmadır. Araştırmanın evrenini Bitlis ve Tatvan devlet hastanesi cerrahi yoğun bakım ünitelerinde tedavi gören 18 yaş ve üzeri hastalar oluşturmaktadır. Bu araştırmaya random olarak seçilen 72 hasta çalışma örneklemini oluşturmaktadır. Popülasyondan örneklem seçimi için basit tesadüfi örnekleme tekniği kullanıldı. Verilerin toplanmasında; demografik özellikler, yaşam bulguları takip formu ve Glaskow Koma Skalası kullanıldı. Veriler araştırmacı tarafından yüz yüze görüşme yöntemiyle Ocak 2023-Haziran 2023 tarihleri arasında toplandı. Kur'an-ı Kerim'de bulunan Rahman suresi 20 dakika boyunca kulaklık ile dinletildi. Veriler; Shapiro-Wilk testi, Levene testi, T testi ve Wilcoxon işaretli sıralama testleri kullanılarak değerlendirildi.

Bulgular: Hastaların müzik terapi (Kur'an-ı Kerim) öncesi nabız ortalaması 88, girişim sonrası nabız ortalaması 85 olarak belirlenmiş ve aradaki fark istatistiksel açıdan anlamlı bulunmuştur ($p < 0.017$). Hastaların müzik terapi (Kur'an-ı Kerim) öncesi, sistolik kan basıncı ortalaması 129.50 mmHg, girişim sonrası sistolik kan basıncı ortalaması 125 mmHg olarak belirlenmiş ve aradaki fark istatistiksel açıdan anlamlı bulunmuştur ($p < 0.021$). Diğer bulgularda anlamlı bir farklılık saptanmamıştır.

Sonuç: Cerrahi yoğun bakımda yatan koma hastalarında kulaklık ile Kur'an-ı Kerim dinletmenin yaşam bulguları üzerine olumlu yönde etki ettiği görüldü.

Anahtar Kelimeler: Hemşirelik, Yaşam Bulguları, Yoğun Bakım, Kur'an-ı Kerim

HEMŞİRELERİN KAN BASINCI ÖLÇÜMÜ SIRASINDAKİ ERGONOMİK RİSKLERİNE YÖNELİK EĞİTİM ETKİNLİĞİNİN DEĞERLENDİRİLMESİ

EVALUATING THE TRAINING EFFECTIVENESS FOR THE ERGONOMIC RISKS EXPOSED BY NURSES WHILE MEASURING BLOOD PRESSURE

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ÖZET

Hastanelerde sağlık işgücü içinde sayısal olarak büyük çoğunluğu oluşturan ve hizmet sunumunun sürekliliği açısından önemli bir grup olan hemşireler kas iskelet sistemi rahatsızlıkları açısından riskli gruptadır. Bu çalışma hemşirelerin gün içinde defalarca yaptığı tekrarlı hareket olan kan basıncı ölçümü işlemi sırasındaki ergonomik risk analizine yönelik verilen eğitimin etkinliğini değerlendirmek amacıyla Eylül 2019- Mayıs 2020 tarihleri arasında 64 hemşireyle Gaziantep Üniversitesi Şahinbey Araştırma ve Uygulama Hastanesi'nde yürütülmüş, deney grubunun kontrol grubu ile aynı olduğu ön test/ son test yarı deneysel planlanmış bir araştırmadır. Çalışmada Hemşire Tanıtıcı Özellikler Formu, Hızlı Tüm Vücut Değerlendirmesi Formu (REBA), Genişletilmiş Nordic Kas-İskelet Sistemi Ağrı Sorgusu kullanılmıştır. Veriler SPSS programının 21.0 sürümü (IBM SPSS Inc Canada) kullanılarak yapılmıştır. Çalışmaya katılan hemşirelerin %82.4' ü kadın, %84.4'ü lisans mezunu olup yaş ortalamaları 35.79±5.04'tür. Hemşirelerin %64.1' inin fiziksel egzersiz yapmadığı ve tüm anatomik bölgelerinde farklı oranlarda ağrıları olduğu; fakat en sık bel ağrısı (%71.9) yaşadıkları saptanmıştır. Hemşirelere verilen eğitim öncesi REBA puan ortalamalarının 5.79±1.08 olduğu, eğitimden sonraki (1. ve 3. ay) gözlemlerinde bu ortalamanın düştüğü, eğitimin etkin olduğu bulunmuştur. REBA puan ortalamaları ile eğitim durumu arasında anlamlı bir ilişki bulunmuş, lisansüstü eğitim mezunlarının daha yüksek REBA puanı aldıkları görülmüştür (p=0.049). Hemşirelere verilecek eğitimler ile; uygun olmayan postürde çalıştıklarında, yaptıkları işe bağlı olarak kas iskelet sistemi rahatsızlıkları yaşayabilecekleri farkındalığı oluşturulmalı ve kas iskelet sistemini destekleyecek egzersiz programlarına yönlendirilmelidirler.

Anahtar Kelimeler: Hemşirelik, Ergonomi, Kas İskelet Sistemi Rahatsızlıkları, Ergonomik Risk Analizi, REBA

ABSTRACT

Nurses, who account for the majority of the healthcare workforce in hospitals and constitute an important group in terms of continuity of service delivery, are in the risk group for musculoskeletal disorders. The purpose of this study was to evaluate the effectiveness of the training given on the ergonomic risk analysis during blood pressure measurement, which is a repetitive movement performed by nurses several times throughout the day. The study was carried out with the participation of 64 nurses between September 2019 and May 2020 at Gaziantep University Şahinbey Research and Application Hospital. A pretest/posttest quasi-experimental was used in this study in which the experimental group and the control group were the same. The Nurse Descriptive Characteristics Form, Rapid Entire Body Assessment (REBA) Form, and Extended Nordic Musculoskeletal Questionnaire were used in the study. The data analysis was carried out using SPSS software package (21.0 version, IBM SPSS Inc. Canada). Of the nurses who participated in the study, 82.4% were women and 84.4% had a bachelor's degree. Their mean age was 35.79±5.04 years. It was found that 64.1% of the nurses did not do physical exercise and they had pain at different severities in all their anatomical regions, but the most common pain they experienced was the low back pain (71.9%). It was found that the nurses' mean REBA score was 5.79±1.08 before the training and this mean score decreased in (first- and third-month) observations after the training; so, the training was effective. A significant relationship was found to exist between the mean REBA score and the educational status, and it was observed that those who had a master's degree got higher REBA scores (p=0.049). It is recommended that nurses be given trainings on the awareness that they may experience musculoskeletal disorders depending on their job if they work in an improper posture, and they should be guided to follow exercise programs that will support their musculoskeletal system.

Keywords: Nursing, Ergonomics, Musculoskeletal Disorders, Ergonomic Risk Analysis, REBA

THE RELATIONSHIP BETWEEN INTERCULTURAL TOLERANCE AND EMPATHIC TENDENCY LEVELS OF SENIRO NURSING STUDENTS

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Abstract

This study was conducted to determine the relationship between intercultural tolerance and empathic tendency levels of senior nursing students.

The descriptive study was conducted with 75 senior nursing students attending the spring semester of the 2022-2023 academic year. Data were collected with the Sociodemographic Characteristics Form, the Descriptive Characteristics Form, the Intercultural Tolerance Scale (ITS), and the Empathic Tendency Scale (ETS). The research was carried out between 26 May 16 June 2023. In the evaluation of the data obtained, Kruskal-Wallis, Mann-Whitney U tests and Spearman correlation tests were used.

A statistically significant difference was found between the satisfaction with the nursing profession, caring for patients from different cultures and beliefs, liking to care for individuals from different cultures, and the mean score of ITS and ETS of the senior nursing students included in the study ($p<0.05$). The mean score of ITS of the senior nursing students was calculated as 49.60±9.52, and the mean score of ETS was calculated as 66.68±9.28. A positive moderate correlation was determined between cultural tolerance and empathic tendency in the nursing profession (r=0.499, p=0.009).

It was determined that the cultural tolerance and empathic tendency level of nursing senior students were above the medium level. In the study, as the cultural tolerance of nursing students increases, their empathic tendencies also increase.

Keywords: Nursing students, cultural tolerance, empathetic tendency.

1. Introduction

Culture, as a part of people's needs and lifestyles, refers to racial, religious, social, ethnic groups that include individuals' beliefs, arts, traditions, customs, attitudes, behaviors, values and habits. Cultures differ from each other, at this point they are diverse and relative. Intercultural tolerance, on the other hand, is defined as recognizing the right to life without prejudice in the process of accepting different cultures (Şahin and Bakioğlu, 2014). In this respect, culture also affects many situations such as knowledge, perception, expectations, beliefs and practices about the health of individuals (Bayık, 2008). Nurses, who are health care providers, need to have the necessary skills and knowledge in line with the cultural needs of the society and individuals they serve. In order for different communities to live together, nurses should be sensitive to cultural differences and have cultural tolerance in order to increase the quality of care and to provide more effective care. (Williamson and Harrison, 2010).

It is stated that one of the basic elements of intercultural sensitivity and tolerance is empathy. The concept of empathy is important because the nursing profession is a professional group with intense human relations, and it is among the most basic components of care. Empathy

levels play an important role in the cultural tolerance of nurses and nurse candidates. It is important that nurses and nurse candidates respect the cultures of the patients they will care for, show an approach without any prejudice and empathize (Çetişli et al., 2016). In a study, it was determined that the intercultural education given to nursing students is effective in increasing intercultural sensitivity (Can Gür and Yılmaz, 2021). In another study, it was determined that as the intercultural sensitivity of nursing students increased, their empathy levels increased, and their intercultural sensitivity and empathy levels were positively affected by high income (Yurttaş and Aras, 2021).

In our society, where different cultures live together, the level of intercultural tolerance and empathic tendency level of nursing senior students, who will especially dedicate themselves to nursing, is important in increasing the quality and effectiveness of the care given. In this direction, this study aims to determine the relationship between intercultural tolerance and empathic tendency levels of senior nursing students.

2. Method

The research is of descriptive type. The population of the research consists of the final year students of the Faculty of Health Sciences, Nursing Department of Kilis 7 Aralik University, continuing the spring semester of the 2022-2023 academic year (89 students). The study was completed with 75 students who agreed to participate in the study without choosing a sample.

Data were collected with the Sociodemographic Characteristics Form, the Descriptive Characteristics Form, the Intercultural Tolerance Scale, and the Empathic Tendency Scale. The research was carried out between 26 May 16 June 2023. The data were collected by the researchers by face-to-face interview method and it took 10-15 minutes to fill out the questionnaire. Sociodemographic Characteristics Form: It contains 14 questions in total about students' socio-demographic characteristics and culture.

The Intercultural Tolerance Scale (ITS): It was developed by Mendleson et al. in 1997 (Mendleson et al., 1997). Turkish validity and reliability were done by Bakioğlu and Balcı in 2014. The scale is 5-point Likert type, with 7 items positive (1, 8, 9, 11, 12, 14 and 16), 11 items negative (2, 3, 4, 5, 6, 7, 10, 13, 15, 17). and 18) consists of 18 items. The higher the score obtained from the scale, the higher the intercultural tolerance. The Cronbach's alpha value of the scale was 0.69 (Bakioğlu and Balcı 2014). In this study, the Cronbach's alpha value was calculated as 0.71.

Empathic Tendency Scale (ETS): The scale developed by Dökmen (1987) was developed to determine the empathy potential of individuals in daily life. The scale is in 5-point Likert type and consists of 20 items. The 3rd, 6th, 7th, 8th, 11th, 12th, 13th, 15th items are reverse scored in the scale. A minimum of 20 and a maximum of 100 points are obtained from the scale. As the score obtained from the scale increases, the level of empathic tendency increases. The Cronbach alpha value of the scale was specified as 0.70 (Dökmen, 1987). In this study, the Cronbach's alpha value was calculated as 0.69.

The data obtained were evaluated in the SPSS 25.0 (Statistical Package for the Social Sciences) package program. The descriptive tests for demographic data, number, percentage and mean score of the scale were calculated. Compliance of the data with normal distribution was determined by Kolmogorov-Smirnov test and it was determined that they were not suitable for normal distribution. Kruskal-Wallis and Mann-Whitney U tests from non-parametric analyzes in comparison of independent variables; Dunn's test, one of the post hoc analyzes, was used to determine from which group the significance of three or more variables originated. Spearman correlation test was used for the relationship between ITS and ETS. The significance level was taken as 0.05.

Ethics committee approval, institutional permission, and written informed consent were obtained from the participants in order to conduct the study.

3. Results

Of the senior nursing students, 37.3% were 22 years old, 62.7% were female, 66.7% had a family income equal to expenditure, 58.7% had a mother and 48.0% had a father's education in primary education, 49.3% had a successful perception of school success, % 40.0% chose the nursing profession because of job opportunities, 89.3% were satisfied with the nursing profession, 90.7% had relatives/friends in different cultures with whom they were in contact, 100% were curious about different cultures, religions and lifestyles, 73.3% It was determined that 81.3% of them wanted to live in a place with a different culture, 81.3% of them cared for patients from different cultures and beliefs, 85.3% of them liked to care for individuals from different cultures, 64.0% of them did not receive training to develop their cultural competence (Table 1).

Table 1. Distribution of students' sociodemographic characteristics

		n	%
Age **(22.61±1.25 Min.=21, Max.=28)**	21 age	10	13.3
	22 age	28	37.3
	23 age	26	34.7
	≥ 24 age	11	14.7
Gender	Women	47	62.7
	Male	28	37.3
Family income status	Income less than expenses	15	20.0
	Income equals expense	50	66.7
	Income more than expenses	10	13.3
Mother education status	Illiterate	14	18.7
	Primary Education	44	58.7
	High School	12	16.0
	≥ license	5	6.7
Father's education status	Primary Education	36	48.0
	High School	25	33.3
	≥ license	14	18.7
Perception of school success	Successful	37	49.3
	Medium	28	37.3
	Failed	10	13.4
Reason for choosing the nursing profession	Because my family wanted it	8	10.7
	Because I love	12	16.0
	Because my score is enough	25	33.3
	Because there are job opportunities	30	40.0
Satisfaction with the nursing department	Yes	67	89.3
	No	8	10.7
Relative/friend status in a different culture that you are in contact with	Yes	68	90.7
	No	7	9.3
The state of wanting to live in a place with a different culture	Yes	75	100
	No		
The state of caring for patients from different cultures and beliefs	Yes	55	73.3
	No	20	26.7
The state of being fond of caring for individuals from different cultures	Yes	61	81.3
	No	14	18.7
Status of receiving training to develop cultural competence	Yes	64	85.3
	No	11	14.7
	Total	**75**	**100.0**

Age, gender, mother and father education, school success perception, why they chose the nursing profession, job satisfaction, presence of relatives/friends in different cultures with which they are in communication, desire to live in a place with a different culture, people from different cultures and beliefs. A statistically significant difference was found between caring for patients, liking to care for individuals from different cultures and the mean score of ITS (p<0.05). For the Cultural Tolerance Scale; Between 21 years and ≥ 24 years (p≥0.001), between 22 years and ≥ 24 years (p=0.013); mother's education level was illiterate and ≥ undergraduate (p≥ 0.001), primary school graduates and ≥ undergraduate (p= 0.028), illiterate versus high school (p=0.023); Those with father's education level of primary school and those with ≥ undergraduate (p≥ 0.001), those with high school and those with ≥ undergraduate (p≥ 0.001); those with successful and unsuccessful perceptions of school success (p≥ 0.001), those with moderate and successful (p≥ 0.001); Significance was determined between those who chose the nursing profession because they liked it and those who chose it because the score was sufficient (p=0.007) (Table 2).

A statistical difference was determined between the nursing senior students' family income, maternal education, perception of school success, job satisfaction, caring for patients from different cultures and beliefs, liking to care for individuals from different cultures, and the mean score of ETS (p<0.05). For the Empathic Tendency Scale; those whose mothers were illiterate and ≥ undergraduate (p=0.001), primary school graduates and ≥ undergraduate graduates (p= 0.022); Significance was determined between those with successful and unsuccessful perceptions of school achievement (p≥ 0.001), and those with moderate and successful perceptions (p=0.005) (Table 2).

Table 2. Comparison of the sociodemographic characteristics of the students and the total scores of ITS and ETS

		ITS		ETS	
		$\overline{X}\pm SD$	Statistics	$\overline{X}\pm SD$	Statistics
Age	21 age (A1)	45.07±9.52	KW=16.771 **p=0.001** A1-A4/≤0.001 A2-A4/0.013	61.80±5.55	KW=5.284 p=0.152
	22 age (A2)	49.57±5.94		68.53±8.55	
	23 age (A3)	52.70±5.79		66.84±7.66	
	≥ 24 age (A4)	58.36±6.51		66.00±9.23	
Gender	Women	53.93±6.34	Z=-4.480 **p≤0.001**	66.23±8.00	Z=-1.054 p=0.292
	Male	42.32±9.59		67.42±9.32	
Family income status	Income less than expenses	49.33±8.04	KW=0.511 p=0.775	59.73±9.66	KW=8.709 **p=0.0.13**
	Income equals expense	49.26±9.37		67.84±8.14	
	Income more than expenses	51.70±9.59		71.30±8.59	
Mother education status	Illiterate (A1)	42.83±9.59	KW=23.361 **p≤0.001** A1-A4/≤0.001 A2-A4/0.028 A1-A3/0.023	63.77±9.18	KW=17.427 **p=0.001** A1-A4/0.001 A2-A4/0.022
	Primary Education (A2)	48.35±7.92		67.64±7.37	
	High School (A3)	51.42±7.89		70.00±9.88	
	≥ license (A4)	53.95±6.36		74.83±8.58	
Father's education status	Primary Education (A1)	42.21±7.74	KW=26.569 **p≤0.001** A1-A4/≤0.001 A2-A4/≤0.001	65.52±8.49	KW=4.036 p=0.133
	High School (A2)	51.44±7.67		65.68±9.20	
	≥ license (A3)	53.52±6.24		72.14±9.06	
Perception of school success	Successful (A1)	54.27±6.64	KW=29.738 **p≤0.001** A1-A3/≤0.001 A2-A3/≤0.001	77.00±7.37	KW=16.197 **p≤0.001** A1-A3/≤0.001 A2-A3/0.005
	Medium (A2)	49.89±6.18		66.97±8.01	
	Failed (A3)	31.50±6.52		62.60±8.71	
Reason for choosing the nursing profession	Because my family wanted it (A1)	53.41±6.70	KW=10.900 **p=0.004** A2-A3/0.007	63.75±8.32	KW=1.262 p=0.532
	Because I love (A2)	56.75±9.31		71.25±7.24	
	Because my score is enough (A3)	45.52±9.19		70.00±10.09	
	Because there are job opportunities (A4)	49.56±10.03		63.86±8.36	

Satisfaction with the nursing department	Yes	57.00±6.77	Z=-3.028	67.80±7.57	Z=-2.443
	No	48.71±9.62	**p=0.002**	57.25±10.02	**p=0.015**
Relative/friend status in a different culture that you are in contact with	Yes	54.28±6.48	Z=-1.972	67.13±9.40	Z=-1.059
	No	49.11±9.87	**p=0.049**	62.28±7.25	p=0.290
The state of wanting to live in a place with a different culture	Yes	54.25±6.97	Z=-2.198	67.69±8.56	Z=-1.585
	No	47.90±9.80	**p=0.028**	63.90±9.79	p=0.113
The state of caring for patients from different cultures and beliefs	Yes	53.42±8.29	Z=-2.222	68.67±8.27	Z=-3.277
	No	48.72±10.25	**p=0.026**	58.00±8.67	**p=0.001**
The state of being fond of caring for individuals from different cultures	Yes	54.90±8.63	Z=-2.500	68.67±8.11	Z=-4.488
	No	48.68±9.86	**p=0.012**	55.09±7.09	**p≤0.001**
Status of receiving training to develop cultural competence	Yes	51.58±6.35	Z=-1.848	68.33±10.13	Z=-0.979
	No	46.07±9.83	p=0.065	65.75±8.75	p=0.328

ITS=Intercultural Tolerance Scale, ETS= Empathic Tendency Scale. Z=Mann-Whitney U testi. KW=Kruskal-Wallis testi.

The mean score of ITS of senior nursing students was 49.60±9.52, and the mean of ETS score was 66.68±9.28 (Table 3).

Table 3. Distribution of mean scores of ITS and ETS

	$\bar{x}$	SD	Received Min.—Max. Points	Retrievable Min.—Max. Points
1 ITS	49.60	9.52	31 — 68	18 — 90
2 ETS	66.68	9.28	47 — 84	20 — 100

ITS=Intercultural Tolerance Scale, ETS= Empathic Tendency Scale.

A positive moderate correlation was determined between cultural tolerance and empathic tendency in the nursing profession (r=0.499, p=0.009). In other words, as the cultural tolerance increases, the empathic tendency increases.

Table 4. Correlation results between ITS and ETS

		1	2
1 ITS	r*	1	
	p		
2 ETS	r	0.499	1
	p	**0.009**	

ITS=Intercultural Tolerance Scale, ETS= Empathic Tendency Scale. *Spearman Korelasyon test.

4. Discussion

Many people from different cultures live in our country. In this respect, intercultural tolerance forms the basis of nursing care to provide holistic care in societies like our country. One of the basic elements of intercultural tolerance is empathy. Therefore, nursing education needs to be able to empathize in order to provide culture-tolerant care and to apply care. This study was conducted to examine the relationship between intercultural tolerance and empathic tendency levels of senior nursing students.

It was found that the ITS scores of the senior nursing students were moderate (49.60±9.52). Providing intercultural education to nursing students during their education is one of the

important factors in the positive development of cultural tolerance and communication skills in coping with the problems encountered in patient care in their professional lives (Ceylantekin and Öcalan, 2016).

It was determined that the intercultural tolerance scale mean scores of the students who chose the nursing profession because they liked it and were satisfied with the nursing department were significantly higher. In the study conducted by Aktaş et al. (2015) (using an intercultural sensitivity scale), it was determined that students who voluntarily chose the nursing profession had higher levels of intercultural sensitivity. Nursing students are expected to love the profession and be satisfied with their profession, and to provide high and quality care with cultural sensitivity while giving the necessary nursing care to the patient.

It was determined that the intercultural tolerance score averages of the students who were in contact with relatives/friends from different cultures were higher. In the study conducted by Özsezer and Tanrıverdi (2022), with working nurses and student nurses, it was determined that the mean scores of ITS were higher in those who did not have relatives/friends from different cultures. In the study of Yurttaş and Aras (2020) (using the intercultural sensitivity scale) with the first and fourth grade nursing students, it was found that the intercultural sensitivity scale scores of the fourth grade students who met people from other cultures were significantly higher than the first grade students. Although the results of the research differ, it should be considered that many factors such as curiosity and interest in culture, time spent with relatives/friends may be effective. It was determined that students who care for patients from different cultures and beliefs have higher intercultural tolerance scores. In the study conducted by Özsezer and Tanrıverdi (2022), with working nurses and student nurses, no significant difference was found between the mean scores of ITS of caring for patients from different cultures and beliefs. It was found that the average of intercultural tolerance scores of senior nursing students who like to care for individuals from different cultures is significantly higher. The two studies carried out show similarity. The fact that nursing students are satisfied with caring for patients from different cultures shows that they act in line with professional values.

It was found that the mean ETS score of the senior nursing students was at a moderate level (66.68±9.28). Özdelikara and Babur (2020) found the mean scores of nursing students to be 68.34±8.21, while Yurttaş and Aras (2020) found it to be 65.59±9.87. The results of the research show parallelism with the literature.

It was found that the empathic tendency mean scores of the students who were satisfied with the nursing department were significantly higher. In the study conducted by Arpacı and Özmen (2014) and İster and Altınbaş (2016) with nursing students, they found that those who are satisfied with their profession have higher levels of empathic tendency. The findings of the study are similar to the results of the literature.

It was found that the mean scores of Empathic Tendency Scale of the students who care for patients from different cultures and beliefs and who enjoy giving care are significantly higher. Nursing is a profession that requires empathy due to its role in planning and implementing personalized care by determining the needs of the patient/healthy individual. The ability to develop empathy is one of the important elements in solving communication problems.

It has been determined that there is a moderately positive relationship between cultural tolerance and empathic tendency in the nursing profession, and empathic tendency increases as cultural tolerance increases. In the study of Çetişli et al. (2016) and, Yurttaş and Aras (2020) (using the intercultural sensitivity scale), it was determined that as the intercultural sensitivity of nursing students increased, their empathic tendencies also increased. A culturally tolerant empathetic approach will increase patient satisfaction by increasing the quality of holistic nursing care.

5. Conclusion and Recommendations

In the study, it was determined that the cultural tolerance and empathic tendencies of the senior nursing students were moderate. In the study, it was determined that the intercultural tolerance and empathic tendency scale mean scores of the students who are satisfied with their department, who care for patients from different cultures and beliefs and who enjoy giving care are significantly higher. It has been determined that there is a relationship between cultural tolerance and empathic tendency in the nursing profession, and empathic tendency increases as cultural tolerance increases. The development of intercultural tolerance and empathy in nursing students is critical in the delivery of health services. In this respect, it is recommended to regulate the tendencies from the first step to the profession in order to ensure effective interaction, intercultural tolerance and empathic disposition between the patient/healthy individual.

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HIPERTANSIF HASTALARDA ÖZETKILILIK VE ÖZ YÖNETIM DÜZEYLERININ BELIRLENMESI

DETERMINING SELF-EFFICACY AND SELF-MANAGEMENT LEVELS IN HYPERTENSIVE PATIENTS

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ÖZET

Amaç: Hipertansif hastalarda özetkililik ve öz yönetim düzeylerinin belirlenmesi ve aralarındaki ilişkinin incelenmesidir.

Yöntem: Tanımlayıcı, kesitsel tipte yapılan araştırma Eylül 2022- Haziran 2023 tarihleri arasında 120 hipertansif hasta ile gerçekleştirildi. Veriler Hasta Tanıtım Formu, Hipertansiyon Özetkililik Ölçeği, Kronik Hastalık Öz Yönetim Ölçeği kullanılarak toplandı. Veriler SPSS V23 paket programı ile analiz edildi. Verilerin değerlendirilmesinde; Mann Whitney U testi, Kruskal Wallis testi ve Dunn testi kullanıldı.

Bulgular: Yaş ortalamaları 66,76 olan katılımcıların %51,7'sinin erkek, %48,3'ünün 10-15 yıl önce hipertansiyon tanısı aldığı, %53.3'ünün ailesinde hipertansiyon olduğu, %62,5'inin en az bir kez hipertansiyon nedeniyle hastaneye yattığı, %65'inin hipertansiyon ile ilgili eğitim almadığı, %58,3'ünün gün içinde yeterli hareket etmediği belirlendi. Damgalamayla Baş Etme, Sağlık Bakım Etkinliği, Tedavi Uyumu Ölçeği ile Hipertansiyon Özetkililik Ölçeği puanları arasında istatistiksel olarak anlamlı pozitif yönlü bir ilişki elde edildi. Hastalık sürecinde ilaçlarını düzenli kullanan, sosyal destek alan, tansiyonunu ölçen ya da ölçtüren, tansiyonundaki değişimi fark eden hastaların kronik hastalık öz yönetim ölçeği puanı ortalama değeri arasında istatistiksel olarak farklılık bulundu. Beslenme alışkanlıkları ile ölçek puanları karşılaştırıldığında; tuzsuz-yağsız diyet uygulayanların, günlük 1 çay kaşından az tuz tüketenlerin, özetkililik ve kronik hastalık özyönetim ölçek puanı ve sağlık bakım etkinliği, tedaviye uyum alt boyut puanları istatistiksel anlamlılıkla yüksekti.

Sonuç: Çalışmamızda, hastaların hipertansiyon özetkililik düzeyleri arttıkça öz yönetim düzeylerinin arttığı görülmüştür. Hipertansiyon hastalığının neden olduğu yaşam değişikliği ve diyet önerilerine uyum sağlayan hastaların kendi sağlıklarını yönetebildikleri ve uyumlarının daha yüksek olduğu saptanmıştır.

Öneri: Hipertansiyonun kontrol altına alınması için hastaların diyet ve yaşam değişikliğine uyum sağlayabilmesi için farkındalıklarının ve bilgi düzeylerinin arttırılması, sosyal destek sistemlerinin güçlendirilmesi önerilmektedir.

Anahtar Kelimeler: Öz yönetim, özetkililik, hipertansiyon

ABSTRACT

Objective: The aim of this study is to determine the self-efficacy and self-management levels in hypertensive patients and examine the relationship between them.

Methods: A descriptive, cross-sectional study was conducted with 120 hypertensive patients between September 2022 and June 2023. Data were collected using a Patient Identification Form, Hypertension Self-efficacy Scale, and Chronic Disease Self-Management Scale. The data were analyzed using the SPSS V23 software package. The Mann-Whitney U test, Kruskal-Wallis test, and Dunn test were used for data evaluation.

Results: The participants had a mean age of 66.76, with 51.7% being male. It was found that 48.3% were diagnosed with hypertension 10-15 years ago, 53.3% had a family history of hypertension, 62.5% had been hospitalized at least once due to hypertension, 65% did not receive any education about hypertension, and 58.3% did not engage in sufficient physical activity during the day. A statistically significant positive correlation was obtained between Coping with Stigma, Health Maintenance Efficacy, Treatment Adherence Scale, and Hypertension Self-efficacy Scale scores. There was a statistically significant difference between the average scores of the Chronic Disease Self-Management Scale and the patients who regularly took their medications, received social support, measured or had their blood pressure measured, and noticed changes in their blood pressure. When comparing the dietary habits with the scale scores, statistically significant differences were found in self-efficacy and chronic disease self-management scale scores, as well as health maintenance efficacy and treatment adherence subscale scores, for those who followed a low-salt, low-fat diet and consumed less than 1 teaspoon of salt daily.

Conclusion: In our study, it was observed that as the self-efficacy levels of patients with hypertension increased, their self-management levels also increased. Patients who adapted to the lifestyle changes and dietary recommendations caused by hypertension were found to be able to manage their own health and had higher adherence.

Recommendation: To control hypertension, it is recommended to increase patients awareness and knowledge levels to enable them to comply with dietary and lifestyle changes, as well as strengthen social support systems.

Keywords: Self-management, self-efficacy, hypertension

MEDICINAL PLANTS USED IN THE TREATMENT OF DIABETES-A SHORT REVIEW

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ABSTRACT

Diabetes mellitus is a chronic metabolic disorder affecting millions of individuals worldwide. The management of diabetes often involves a combination of lifestyle modifications, conventional medications, and complementary and alternative therapies. Medicinal plants have long been used in various traditional systems of medicine for the treatment of diabetes. This study aims to explore the diverse range of medicinal plants employed in the management of diabetes and their potential therapeutic benefits. A comprehensive review of the literature was conducted to identify medicinal plants commonly used in the treatment of diabetes. The search encompassed various databases, including PubMed, Scopus, and Google Scholar, using relevant keywords related to diabetes and medicinal plants. The selected studies included both experimental and clinical trials that evaluated the efficacy and safety of medicinal plants in diabetes management. The findings revealed a plethora of medicinal plants with documented antidiabetic properties. These plants belong to different botanical families and exhibit various mechanisms of action, such as enhancing insulin secretion, improving insulin sensitivity, inhibiting carbohydrate digestion and absorption, and exerting antioxidant and anti-inflammatory effects. Some of the commonly studied medicinal plants for diabetes management include Gymnema Sylvestre, Momordica charantia, Trigonella foenum-graecum, Allium cepa, and Aloe vera.

Keywords: Medicinal plants, Diabetes**,** Diabetes mellitus**,** Antidiabetic properties**,** Traditional medicine, Herbal medicine, Natural remedies, Insulin secretion**,** Insulin sensitivity**,** Carbohydrate metabolism

THE EFFECT OF MOOD CHANGES ON FOOD PREFERENCES

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Abstract

Purpose: Eating behavior, which is influenced by many environmental and psychological factors, affects the decision to start and stop eating, the types and amounts of foods selected according to our emotions. It was aimed to determine the effect of mood changes on the food preferences. **Materials and Methods:** The study was conducted with volunteers aged 18-30 studying at a state university between February 2023 and April 2023. A data collection form was formed by the researchers to determine food preferences of individuals in mood changes. Data were collected via a free online platform. The obtained data were analyzed and evaluated in the SPSS 25 package program. **Results:** A total of 511 people, 211 (41.3%) male and 300 (58.7%) female, participated in the study. The changes in the mood of the majority of the participants affected their food preferences, and this rate was found to be significantly higher in women than in men (p=0.00). The food craving (fatty, salty, sugary foods) that cause excessive eating was found to be higher in women than in men (p=0.00). In mood changes, women preferred sweets more than men, while men preferred fast foods more (p=0.00). The most preferred foods for mood changes are; fast food such as pizza, hamburger (34.8%) when they are happy, junk/packaged foods (biscuits/chocolate/wafers) when they feel sad, anxious and stressed (27%; 28.4%; 30,1%), and home meals when they felt safe (41.1%). **Conclusion:** It has been found that mood changes can affect food preferences in different ways.

Keywords: Food Preference, Mood, Nutrition

1. Introduction

Emotion has been determined as a complex response model that includes experiential, behavioral and physiological, in which the individual tries to cope with an important issue or event personally, according to the American Psychological Association (APA, 2023). Nutrition, on the other hand, to take the nutrients needed by the body in adequate and sufficient quantities in order to protect and improve health and improve the quality of life (TUBER, 2015). There is a complex relationship between mood and nutrition. The emotional state, sociodemographic, socioeconomic factors, body image and appetite are the factors thar affect eating attitudes and behaviors (Karakus et al., 2016). Eating behaviors influence energy intake, the types and amounts of foods, and the decision to start and stop eating according to mood changes (French et al., 2012). It is stated that some emotions such as happy, sad, angry, depressed, lonely could

be exhibited in individuals, eating too much or too little (AlAmmar et al., 2020). It is emphasized that foods high in salt, fat, sugar, which are called palatable foods, are more pronounced because foods have a reward in people who tend to eat too much (Oyekcin & Deveci, 2012). In some studies, it has been observed that people consume different amounts and varieties of food in positive and negative emotional states (French et al., 2012; AlAmmar et al., 2020).This study aims to determine the effect of mood changes on the food preferences.

2. Materials and Methods

This cross-sectional, descriptive study was conducted in the province of Istanbul with the general questionnaire method.

This study was carried out with a total of 511 participants, 311 women and 200 men, aged between 18-30, who were studying at a state university in the Usküdar district of Istanbul. Following the approval of the Scientific Research Ethics Committee (decision no 23/3), data were collected from adult volunteers on the online platform between February 2023 and April 2023, and the findings were evaluated in April 2023.

Data collection form

The data collection form was created by the researchers by examining the literature. In the form, the general information of the participants (gender, age, marital status, smoking/alcohol use, physical activity status) and food preferences in mood changes were questioned. There are a total of 14 positive and negative emotions such as happy, relaxed, sad, angry, stressful, depressive (Demirel et. al., 2014).

In the study, the participants' height (cm) and body weight (kg) were questioned and their body mass index (BMI) (kg/m2) was calculated by the researchers.

Statistical analysis

The obtained data was analyzed using the Statistical Package for Social Sciences (SPSS) version 25.0. In the context of descriptive statistics, the answers to the appropriate questions in the data collection form were calculated with frequency (n), percentage (%); the minimum and maximum values, mean values and standard deviations of the individuals' age, height, body weight and BMI were determined. Chi-square test based on frequency distribution was used to determine for a systematic relationship of the two variables. The level of significance was accepted as $p<0.05$.

3. Findings and Discussion

A total of 511 participants, 211 (41.3%) male and 300 (58.7%) female, participated in the study. The mean age was 21±2.05 years, mean weight was 65±13.93 kg, and mean height was 169±9.58 cm of students. The general characteristics of the participants are shown in Table 1.

Table 1. General characteristics of participants

		n	%
Gender	Female	300	58.7
	Male	211	41.3
Marital Status	Married	9	1.8
	Single	494	96.7
	Other	8	1.6
Living Place	Dormitory	213	41.7
	With Family	209	40.9
	With Friends	37	7.2
	Alone	35	6.8
	Other	17	3.3
Smoking	Yes	140	27.4

	No	315	61.6
	Quit	56	11.0
Alcohol	Yes	63	12.3
	No	324	63.4
	Sometimes	124	24.3
Regular Physical Activity	Yes	154	30.1
	No	357	69.9

Table 2 shows the effect of mood changes in food preferences and the feeling that foods control them.

Table 2. The effect of mood changes in food preferences and the feeling that foods control them by gender

		Male		Female		
		n	**%**	**n**	**%**	
The feeling that foods control them	**Never**	73	34.6	49	16.3	
	Rarely	63	29.8	79	26.3	
	Sometimes	45	21.3	112	37.3	**p=0.00**
	Often	23	10.9	47	15.7	
	Always	7	3.3	13	4.3	
The effect of mood changes in food preferences	**Never**	19	3.7	4	1.3	
	Rarely	39	7.6	20	6.7	
	Sometimes	83	16.2	85	28.3	**p=0.00**
	Often	44	8.6	127	42.3	
	Always	26	5.1	64	21.3	

Chi-square test. $p<0.05$

The food craving (salty, sugary, fatty foods) is given in Table 3. Compared to men, women prefer to consume foods that can cause food addiction more frequently ($p=0.00$).

Table 3. Food craving by gender

		Male		Female		
		n	**%**	**n**	**%**	
Food craving (salty, sugary, fatty foods)	**Never**	9	4.3	4	1.3	
	Rarely	51	24.2	33	11.0	**p=0.00**
	Sometimes	95	45.0	129	43.0	
	Often	49	23.2	116	38.7	
	Always	7	3.3	18	6.0	

Chi-square test. $p<0.05$

It was determined that 59.3% of women and 35.5% of men preferred sweets as the most in mood changes. But, women preferred sweets more than men ($p=0.00$). Men preferred fast foods more than women, and it is significant ($p=0.00$) (Table 4). There are many studies proving the effects of psychological states such as happiness, sadness, anger, and depression on eating behavior (Özgen et al., 2012, Özsaçmacı et al., 2019). In Brazil, De Medeiros et al. (2017), showed that men prefer more high-fat and traditional foods, while women prefer more sugary foods (De Medeiros et al., 2017).

Table 4. Preferred food types according to mood changes

		Male		Female		
		n	**%**	**n**	**%**	
Preferred food type in mood changes	**Sweets**	75	35.5	178	59.3	**p=0.00**
	Salty foods	9	4.3	25	8.3	
	Fast foods	58	27.5	55	18.4	
	Beverages	16	7.6	6	2.0	
	Bread, rice and pasta	11	5.2	9	3.0	
	Bitter-spicy foods	12	5.7	16	5.3	
	Vegatables	3	1.4	7	2.3	
	Meat,chicken etc.	24	11.4	4	1.4	
	Dairy	3	1.4	0	0	

Chi-square test. p<0.05

The preferred food types in mood changes by individuals are given in Table 5.

Table 5. The preferred food types in mood changes

	Fast-food n (%)	**Junk/ packaged foods** n (%)	**Soft drinks** n (%)	**Home meals** n (%)	**Pastries** n (%)	**Chips, crackers** n (%)	**Desserts** n (%)
Happy	178(34.8)	43(8.4)	22(4.3)	123(24.1)	10(2)	22(4.3)	113(22.1)
Sad	93(18.2)	138(27)	29(5.7)	81(15.9)	26(5.1)	39(7.6)	105(20.5)
Anxious	77(15.1)	145(28.4)	43(8.4)	109(21.3)	25(4.9)	58(11.4)	54(10.6)
Stressful	76(14.9)	154(30.1)	32(6.3)	97(19)	31(6.1)	62(12.1)	59(11.5)
Angery	98(19.2)	116(22.7)	40(7.8)	106(20.7)	35(6.8)	57(11.2)	59(11.5)
Tired	105(20.5)	113(22.1)	33(6.5)	151(29.5)	37(7.2)	36(7)	36(7)
Depressive	88(17.2)	137(26.8)	32(6.3)	97(19)	22(4.3)	46(9)	89(17.4)
Pessimistic	92(18)	124(24.3)	45(8.8)	101(19.8)	30(5.9)	49(9.6)	70(13.7)
Lonely	131(25.6)	97(19)	30(5.9)	114(22.3)	32(6.3)	47(9.2)	60(11.7)
Bored	113(22.1)	112(21.9)	39(7.6)	95(18.6)	21(4.1)	65(12.7)	66(12.9)
Comfortable	124(24.3)	45(8.8)	34(6.7)	189(37)	32(6.3)	24(4.7)	63(12.3)
Safe	115(22.5)	44(8.6)	40(7.8)	210(41.1)	33(6.5)	19(3.7)	50(9.8)
Concerned	96(18.8)	133(26)	45(8.8)	101(19.8)	32(6.3)	45(8.8)	59(11.5)
Daunted	108(21.1)	118(23.1)	43(8,4)	112(21.9)	35(6.8)	37(7.2)	58(11.4)

In a study, the effect of being happy on eating behavior was found to be stronger than other emotions (Özgen et al., 2012). However, it has been observed that positive emotions can increase pleasure and healthy food consumption, while negative emotions (anger, fear, and sadness) can increase impulsive eating (Lazarevich et al., 2015). In our study, which supports

this, individuals tend to have a high rate of home cooking when they feel happy, comfortable and safe.

Obesity is a health problem that can develop as a result of negative emotional states such as depression and anxiety, as well as emotional eating. Although depressive mood is accompanied by loss of appetite and related decrease in eating attitude, atypical depression can also lead to weight gain by causing an increase in appetite (WHO, 2017). Lazarevic et al. (2016), examined the relationship between depression symptoms, emotional eating, and BMI in Mexican university students. Emotional eating was found associated with an increased BMI due to depressive symptoms (Lazarevic et al., 2016). In our study, it was observed that individuals tended to consume fast food and junk/packaged foods in many negative moods such as depressive, anger or stressful. In another study on eating attitudes and behaviors, it was found that positive emotions such as happiness increase healthy food consumption. It is stated that negative emotions (anger, fear, and sadness) increase impulsive, fast and irregular eating and consumption of junk food (Macht et all., 1999). High intake of such a highly processed foods can bring along a number of negative health problems along with obesity (Elizabeth et all., 2020). In our study, it was determined that the preferred foods (junk foods) in stress, sad or anxious mood could trigger weight gain.

Stress and negative mood can adversely affect appetite, forcing some people to eat more and others to eat less. In cases where stress causes a tendency to eat, it has been revealed that this preference is mostly energy-intensive, nutrient-poor, but delicious foods. It has been reported that this situation actually functions as a mechanism for coping with negative emotions (Dakanalis et all., 2023). Incompatible behaviors in managing stress and emotions can also lead to weight gain (Lazarevich et al., 2015). Hootman et al. (2018) evaluated the effect of psycho-behavioral structures between just before and after beginning university according to eating attitude and gender. The relationship between stress and weight gain was associated with greater stress and increased food intake in men than in women (Hootman et al., 2018). Grammatikopoulou et al. (2018) conducted a study about eating disorders, including diet-related stress, food addiction, and orthorexia among nutrition and dietetics students. Food addiction was found in 4.5% of the participating students. Emotional and stress-related eating was found to be significantly more common in food addicts than non-addicted students, and lower BMI was inversely associated with emotional and stress-related eating (Grammatikopoulou et al., 2018).

5. Conclusion

Nutrition is not only consisted of body's need for energy and nutrients but also, it can be affected by mood changes. Understanding why certain emotions trigger the urge to eat and food preference in different ways in men and women, and finding different strategies to break the link between these changing moods and eating is important. Researchers and clinicians should also examine deeply relationship between mood changes and food preferences.

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INVESTIGATION OF PAIN ACTIVITY PATTERNS, FUNCTIONAL STATUS, PSYCHOLOGICAL STATU NS, SLEEP AND PHYSICAL ACTIVITY IN PEOPLE WITH MIGRAINE: PILOT STUDY

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Abstract

Objective: The aim of this study was investigate pain-related activity patterns, functional status, psychological status, sleep and physical activity in individuals with migraine.

Methods: Eighty-six individuals with migraine were included in the study. The descriptive characteristics of the patients were questioned. The pain-related activity patterns of the participants were assessed with The Pattern of Activity Measure (POAM-P), migraine-related disability status with Migraine Disability Assessment Scale (MIDAS), psychological status with Depression Anxiety Stress Scale-21 (DASS-21), sleep quality with Pittsburgh Sleep Quality Index (PSQI), physical activity levels with International Physical Activity Questionnaire-Short Form (IPAQ-SF).

Results: The pain intensity, number and duration of attacks of individuals were found 7.26±2.11, 3.68±2.68, 29.79±28.92, respectively. According to POAM-P, they used 45.3% avoidance, 25.6% overdoing, 29.1% pacing patterns. According to MIDAS, severe disability in 45 (52.3%). According to DASS-21, severe depression in 16 (18.6%), severe anxiety in 21 (24.4%) and severe stress in 10 (11.6%). According to PSQI, sleep quality was found good in 24.4% (n:21) and bad in 75.6% (n:65). According to IPAQ-SF of the physical activity levels were found as low in 46.5% (n:40), moderate in 43.9% (n:37), high in 10.5% (n: 9).

Conclusion: As a result of the study, it was observed that individuals experienced severe pain during migraine attacks, severe disability in migraine-related disability, psychological status and sleep quality were adversely affected. It was determined that the majority of individuals used avoidance pattern and had low level of physical activity.

Key words: Activity patterns, Physical activity, Migraine, Sleep, Psychological status

1. Introduction

Migraine is a primary headache disorder characterized by moderate to severe headache attacks, usually unilateral, throbbing, lasting 4-72 hours. Pain may increase with physical activity and may be accompanied by symptoms such as nausea, vomiting, photophobia and phonophobia (Arnold et al., 2018). The World Health Organization (WHO) reports that migraine ranks 3rd among the diseases that cause disability in the world, and it is 2-3 times more common in women than in men (Feigin et al., 2015). The World Health Organization (WHO) reports that migraine disability 3rd among the diseases that cause disability in the world and is 2-3 times more common in women than in men (Feigin et al., 2015). Although many studies have been conducted on the pathophysiology of migraine, the exact cause is not yet known (Dodick et al., 2018). It is generally believed that migraine headache is due to the activation and sensitivity of the trigeminovascular pathway (Dodick et al., 2018; Levy et al., 2010; Zhang et al., 2011). Migraine attacks can be triggered by various reasons. In the studies sleep disorders, long-term fasting periods, exercise, fatigue, stress, menstruation, pregnancy and hormone treatments have been reported as triggering factors (Marmura et al., 2018; Kelman et al., 2007). Migraine, which is very common in the community, reduces the quality of life of individuals because it causes loss of workforce, restricts social life, and limits physical and emotional functions (Arnold et al., 2018; Rasmussen et al., 1991).

People with chronic pain develop different the activity patterns to reduce their pain and increase their physical activity level. The most common the activity patterns are known as avoidance, pacing, and overdoing (Cane et al., 2013). Avoidance is characterized by avoiding or not doing activities associated with pain and results in a low activity level. Overdoing is defined as continuing to do the activity despite pain occurs during the activity. Pacing is defined as the regulation of patients' activities according to their pain levels (Cane et al., 2013; Esteve et al., 2016; Luthi et al., 2018). While avoidance or overdoing is thought to be dysfunctional, pacing is assumed to be a potential strategy for chronic pain modality (Cane et al., 2013). As a result of our researches, although the activity patterns in various musculoskeletal system diseases have been examined, there is no study examining the activity patterns in individuals with migraine.

In this study, it was aimed to examine the pain activity patterns, functional status, psychological status, sleep status and physical activity levels of individuals with migraine.

2. Materials and Methods

The study was designed as a cross-sectional study and conducted as a web-based study through an online form. In the study, who were diagnosed with migraine by a neurologist in accordance with the criteria of the International Headache Society, who were literate and who all individuals between the ages of 18-65 who volunteered to participate in the study were included. The individuals who have primary/secondary headaches other than migraine, have any concomitant

neurological disease, are pregnant, have a malignant disease, have a malignant disease, have mental and communication problems, have a physical disability, have problems communicating through online connections (whatsapp, instagram, etc.). excluded from the study.

Outcome

Within the scope of the study of the participants, demographic and physical characteristics (age, gender, body mass index, marital status) and characteristics of migraine pain (pain severity, number of attacks, duration of attacks) were questioned.

The pain intensity of the individuals was evaluated by the Numerical Pain Rating Scale (NPRS). The individual was asked to rate their pain on a scale of 0-10. According to this scale, 0: no pain at all, 10: very severe pain.

The pain activity patterns was evaluated with the Pattern of Activity Measure-Pain (POAM-P). It is a scale that measures activity change patterns (avoidance, overdoing, pacing) in individuals with chronic pain and divides it into 3 subgroups. The total score range varies from 0 to 40 points for each subgroup. For each subgroup, the answers to the questions of the groups are collected, 3 different subgroup scores of the people are obtained and it is determined which group the person belongs to according to the highest score (Suygu et al., 2022).

The migraine-related disability level was evaluated with the Migraine Disability Assessment Scale (MIDAS). The total MIDAS score is obtained by calculating the days when the performance of the individuals decreases due to headaches or when they can not perform fully. the score ranges are calculated as follows: 0-5 days: grade 1 (no or minor disability), 6-10 days: grade 2 (mild disability), 11-20 days: grade 3 (moderate disability), 21 days or more: grade 4 (severe disability) (Ertas et al., 2004).

The psychological aspects was evaluated with the Depression Anxiety Stress Scale-21 (DASS-21). The scale consists of 3 subheadings as depression, anxiety and stress, and each subheading consists of seven questions. Each question is evaluated as a score with a number between 0-3. The total score for each heading varies between 0-21. High scores indicate that individuals have higher levels of depression, anxiety and stress (Saricam et al., 2018).

The sleep quality was eveluated with the Pittsburgh Sleep Quality Index (PSQI). The total score range varies between 0-21, and a high total score indicates poor sleep quality. The total PSQI score of ≤5 classifies sleep quality as good, and a score of >5 classifies sleep quality as poor (Agargun et al., 1996).

The physical activity level was evaluated with the International Physical Activity Questionnaire-Short Form (IPAQ-SF). Weekly MET-min/week scores are found by multiplying walking, moderate intensity activities, vigorous intensity activity and the duration (minutes), frequency (days) and metabolic equivalent (MET) of these activities. Physical activity levels are classified as physically inactive (<600 MET-min/week), minimally active (600-3000 MET-min/week) and high active (>3000 MET-min/week) (Saglam et al., 2010).

Statistical analysis

SPSS 22.0 Windows version package program was used to evaluate the data obtained as a result of the research. Descriptive statistics for continuous variables in the study, as mean, standard deviation, minimum and maximum values; expressed as numbers and percentages for categorical variables.

3. Findings

The study included 86 individuals (81.4% female, 18.6% male) with migraine. The demographic and clinical characteristics of the participants are shown in Table 1. The mean age of the individuals was 34.40±6.43 years and the mean body mass index was 26.12±3.45 kg/m2. The pain severity was 7.26±2.11, the attacks frequency per month was 3.68±2.68, and the attack duration was 29.79±28.92 hours of the individuals.

The scale scores of the participants are shown in Table 2. According to the POAM-P, 39 (45.3%) individuals used avoidance, 22 (25.6%) individuals used overdoing and 25 (29.1%) individuals used pacing pattern. According to the MIDAS, of individuals 8 (9.3%) had no disability, 11 (12.8%) had mild disability, 22 (25.6%) moderate disability, and 45 (52.3%) had severe disability. Psychological states of individuals; According to the DASS-21-Depression scale, 16 individuals (18.6%) were normal, 13 (15.1%) were mild, 27 (31.4%) were moderate, 14 (16.3%) were severe, and 16 (18.6%) were extremely severe, According to the DASS-21 Anxiety scale, 16 (18.6%) individuals were normal, 18 (20.9%) were mild, 18 (20.9%) were moderate, 13 (15.1%) were severe and 21 (24.4%) were extremely severe, According to the DASS-21-Stress scale, 30 (34.9%) individuals were normal, 10 (11.6%) were mild, 15 (17.4%) were moderate, 21 (24.4%) were severe and 10 (11.6%) were extremely severe were determined. According to the PSQI, sleep quality was found 21 (24.4%) individuals were good and 65 (75.6%) individuals were bad. According to IPAQ-SF, physical activity levels were found 40 (46.5%) individuals were inactive, 37 (43.0%) individuals were minimally active and 9 (10.5%) individuals were high active.

Table 1: Demographic and clinical characteristics of individuals with migraine

Characteristics	Individuals with migraine (n=86)
Age (yr), X±SD	34.40 ± 6.43
Sex, n (%) 　Female 　Male	 70 (81.4) 16 (18.6)
Body mass index (kg/m^2), X±SD	26.12 ± 3.45
Marriage status, n (%) 　Single 　Married	 53 (61.6) 33 (38.4)
Pain characteristic, X ± SD 　Pain severity (NPRS) 　Attack frequency 　Attack duration (hour)	 7.26 ± 2.11 3.68 ± 2.68 29.79 ± 28.92

yr: years, X: Mean, SD: standard deviation, n: number of individuals, NPRS: Numeric Pain Rating Scale

Table 2: Clinical parameters of individuals with migraine

Characteristics (n=86)	n (%)
Pain activity patterns 　Avodance 　Overdoing	 39 (45.3) 22 (25.6)

Pacing	25 (29.1)
Migraine-related disability level	
No or minor disability (Grade-1)	8 (9.3)
Mild disability (Grade-2)	11 (12.8)
Moderate disability (Grade-3)	22 (25.6)
Severe disability (Grade-4)	45 (52.3)
Psychological state (DASS-21)	
DASS-21-Depression	
Normal	16 (18.6)
Mild	13 (15.1)
Moderate	27 (31.4)
Severe	14 (16.3)
Extremely severe	16 (18.6)
DASS-21-Anxiety	
Normal	16 (18.6)
Mild	18 (20.9)
Moderate	18 (20.9)
Severe	13 (15.1)
Extremely severe	21 (24.4)
DASS-21-Stress	
Normal	30 (34.9)
Mild	10 (11.6)
Moderate	15 (17.4)
Severe	21 (24.4)
Extremely severe	10 (11.6)
Sleep quality (PSQI)	
Good	21 (24.4)
Poor	65 (75.6)
Physical activity level	
Inactive	40 (46.5)
Minimally active	37 (43.0)
High active	9 (10.5)

n: number of individuals, DASS-21: Depression Anxiety Stress Scale-21, PSQI: Pittsburgh Sleep Quality Index PSQI

4. **Discussion**

As a result of this study, it was observed that individuals experienced severe pain during migraine attacks and had severe disability due to migraine. In addition, it was determined that the majority of individuals used the avoidance pattern and their psychological states were negatively affected. It was found that individuals had poor sleep quality and low physical activity level.

In a study conducted in 2016, it was reported that migraine disabilities second among the causes of disability in the world and is one of the ten diseases that cause the most disabling disorders (Rohmann et al., 2020). Lipton et al. found that 91% of individuals with migraine experienced functional disability due to headache. (Lipton et al., 2001). Demirkirkan et al. found that 41.4% of individuals had severe disability and 26.6% had moderate disability (Demirkirkan et al., 2006). In this study, in accordance with the literature, it was found that 52.3% of individuals with migraine had severe disability and 25.6% had moderate disability.

In the literature, there are studies examining pain activity patterns in various musculoskeletal system diseases. Gong et al. reported in their study in the elderly with chronic pain that the majority used the pattern of avoidance of pain activity patterns (Gong et al., 2023). Racine et al. found in a study of individuals with fibromyalgia that he majority of individuals used the avoidance pattern of pain activity patterns (Racine et al., 2020). In this study, similar to the literature, it was observed that individuals with migraine mostly used the avoidance pattern.

It has been reported that psychological disorders are very common in individuals with migraine (Al-Hayani et al., 2021). The studies have reported that depression, anxiety, and stress trigger migraine, increase the frequency of attacks, and cause the disease to become chronic (Al-Hayani et al., 2021; Oh et al., 2014; Sauro et al., 2009). The studies in the literature report that depression and anxiety are 2-5 times more common in individuals with migraine (Minen et al., 2016; Baskin et al., 2006). For these reasons, it is very important to evaluate the psychological states of individuals in detail in terms of providing the right treatment to the patients (Oh et al., 2014). Similar to the literature, it was observed in this study that individuals with migraine had high levels of depression, anxiety and stress.

The studies in the literature report that sleep disorders are common in individuals with migraine (Kim et al., 2018; Stanyer et al., 2021). Sleep disorders worsen migraine and make it chronic, and migraine attacks may occur as a result of sleep disorders (Cho et al., 2015). Individuals consider sleep disturbance as one of the most common triggers of migraine and report that they experience lower sleep quality before and during migraine attacks. It has also been stated that quality sleep plays a therapeutic role in ending headaches (Pellegrino et al., 2018; Tiseo et al., 2020). For this reason, it is very important to determine sleep disorders in individuals with migraine. In our study, it was observed that the majority of individuals with migraine had poor sleep quality.

Physical activity; It has been reported that it is beneficial in increasing the physical activity level, strength, endurance and flexibility of individuals. In addition, it has been reported that it has positive effects in the prevention of chronic pain and in reducing pain (Landmark et al., 2011; Ferguson et al., 2014). The correlation between migraine and physical activity is controversial in the literature. There are studies stating that individuals with migraine have low physical activity levels and this causes higher pain intensity (Varkey et al., 2008; Krøll et al., 2017). On the other hand, there are also studies indicating that vigorous physical activity triggers migraine attacks (Kelman et al., 2007; Varkey et al., 2017). Samantha et al. found that individuals with migraine who avoided physical activity experienced two times more migraine attacks than those who did not avoid physical activity (Samantha et al., 2018). In this study, only 10.5% of individuals with migraine found to be active.

5. Conclusion and Recommendations

As a result of the study, it was observed that individuals with migraine experienced severe pain during migraine attacks, had severe disability due to migraine, and had a negative impact on their psychological state and sleep quality. It was determined that the majority of the individuals used the avoidance pattern and had low physical activity levels. For these reasons, it is very important to comprehensively evaluate and determine the treatment plan when planning treatment to reduce headaches for individuals with migraine.

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DETERMINATION OF FACTORS AFFECTING PAIN ACTIVITY PATTERNS IN INDIVIDUALS WITH MIGRAINE: A PILOT STUDY

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ABSTRACT

Purpose: Migraine, which ranks 3rd among the causes of disability in the world, is one of the primary headache disorders. The aim of this study was to determine the factors affecting pain activity patterns in individuals with migraine.

Method: A total of 100 patients (age=32.67 ± 9.71 years) with migraine, 80 women and 20 men, were included in the study. Migraine frequency, duration and pain severity of the patients were questioned. Patterns of activity change were evaluated with the patterns of activity measure-pain (POAM-P), and their psychological status was evaluated with the Depression Anxiety Stress Scale (DASS 21). Factors affecting pain activity patterns were tested by linear regression analysis.

Results: In individuals with migraine, respectively, POAM-P avoidance, POAM-P overdoing and POAM-P pacing scores were 26.49 ± 7.35; 22.27 ± 6.64; 22.18 ± 6.79. Age (p=0.001) and migraine pain severity (p=0.012) for POAM-P avoidance, age (p=0.019) for POAM-P overdoing, DASS 21 anxiety (p=0.005) and DASS 21 stress (p=0,037) for POAM-P pacing factors were found to be effective.

Conclusion: It is thought that determining the factors affecting the pain activity patterns in individuals with migraine may be important in establishing a chronic pain management and migraine treatment protocol.

Keywords: Migraine, Pain activity patterns, Psychological status

1.Introduction

Migraine is a headache disorder that is mostly characterized by unilateral and throbbing moderate/severe headache attacks (Arnold et al., 2018). The severity of the experienced headache increases with physical activity. In addition, symptoms such as photophobia, phonophobia, nausea and vomiting can be seen along with headache (Arnold et al., 2018). Migraine ranks second among the causes of disability in the world, and first in young women (Steiner et al., 2020). In a study conducted on migraine in Turkey, the prevalence of migraine was found to be 24.6% in women and 8.5% in men (Ertaş et al., 2012). Migraine affects the individual negatively in terms of social, physical and psychological aspects and impairs the quality of life (Arnold et al., 2018; Rasmussen et al., 1991). It is important to investigate this social and universal disease with socioeconomic effects.

Headache is one of the main symptoms commonly seen in the clinical picture of migraine. Experienced headache attacks may differ from person to person or even in the same person (Villar & Goadsby, 2022). Therefore, detailed questioning of clinical features such as migraine frequency, duration and pain severity will guide the management of migraine treatment. Individuals with chronic pain develop various activity patterns to reduce their pain. Frequently preferred pain activity patterns are avoidance, overdoing and pacing (Esteve et al.,2016; Cane et al.,2013). Avoidance; not doing activities that will cause pain, overdoing it; maintaining activity despite pain, pacing; it is defined as the regulation of activities according to the level of pain (Esteve et al.,2016; Cane et al.,2013). The relationship between pain activity patterns and pain, function, physical and psychological parameters in various diseases with chronic pain has been investigated (Cane et al.,2013; Racine et al., 2018; Gong et al.,2023). Results of the study were found to be similar, and it was reported that as the avoidance score increased, the physical and psychological effects worsened and the pain interaction increased. Pacing has been reported that it is associated with better physical and psychological function. To the best of our knowledge, no study examining pain activity patterns in individuals with migraine has been found. With the pain activity analysis and determination of the factors affecting these patterns, the changes in the behavior pattern of the patients can be followed, which will play an important role in the chronic pain management and the planned individual treatment program
Therefore, the aim of this study was to determine the factors affecting pain activity patterns in individuals with migraine.

2.Materials and Methods

A total of 100 patients (age=32.67 ± 9.71 years) with 80 women and 20 men with migraine were included in this electronic online questionnaire study. All individuals between the ages of 18-65 who were literate, diagnosed with migraine by a neurologist according to the criteria of the International Headache Society and volunteered to participate in the study were included in the study. Exclusion criteria from the study; Having primary/secondary headache other than migraine, presence of a concomitant neurological disease, pregnancy, presence of malignant disease, presence of mental and communication problems, inability to communicate with online connections (whatsapp, instagram, etc.). Individuals were reached by snowball sampling method.

The physical characteristics of the patients, age and gender were recorded. Migraine pain frequency, duration and pain severity were questioned within the scope of the clinical characteristics of the patients. For the frequency of migraine to the patients, "How often do you have migraine pain in a month?" the question is, for the duration of migraine, the question "How long does your migraine pain usually last?" was asked. For migraine pain severity, patients were asked to rate the mean pain severity of migraine attacks in the last 1 month (0: no pain; 10: excruciating pain) on the Numerical Pain Scale (0-10).

The pain activity change patterns of the patients were evaluated with the Turkish version of the patterns of activity measure-pain (POAM-P) (13). POAM-P is a questionnaire with 30 questions in total, divided into 3 subtitles: avoidance, overdoing and pacing, all of which are used to analyze chronic pain patients. Scoring for each sub-title varies between 0-40. Using the calculated subheading scores, the activity change pattern of the patient is determined by the caption with the highest score (Suygun & Celenay, 2022).

The Depression Anxiety Stress Scale (DASS 21), whose validity and reliability were established by Sarıçam et al., was used to determine Psychological status of patients. This scale consists of 21 questions in total, 7 of which are under the sub-headings of depression, anxiety and stress. High scores obtained from the sub-headings indicate that the psychological impact is high (Sarıcam, 2018).

The conformity of the numerical variables to the normal distribution was tested with the Shaphiro Wilk test. Linear regression analysis was performed to investigate the effect of variables on pain activity patteN Brns. SPSS 22.0 Winows version package program was used in the analysis. P<0.05 was considered significant.

3.Findings and Discussion

A total of 100 patients (age=32.67 ± 9.71 years) with migraine, 80 women and 20 men, were included in the study. The mean and median values of age, migraine pain frequency, duration and severity of migraine pain, avoidance of POAM-P, overdoing POAM-P and regulating POAM-P, DASS 21 depression, DASS 21 anxiety and DASS 21 stress scores of individuals with migraine are shown in Table 1. Accordingly, the frequency of migraine attacks per month was 3.99, the duration was 28.49 hours, and the pain severity was 7.6. According to Table 1, the mean POAM-P avoidance score of individuals with migraine was found to be 26.49, POAM-P overdoing 22.27, and POAM-P pacing 22.18. The mean DASS 21 depression score was 10.39, the DASS 21 anxiety score was 8.17, and the DASS 21 stress score was 12.67.

According to the linear regression analysis for POAM-P avoidance, age and migraine pain severity explain 25% of the change in POAM-P avoidance score (R2=0.250). Age (t= -3.39, p<0.05) and migraine pain severity (t=2.57, p<0.05) factors were found to be significant predictors of POAM-P avoidance scores. It was determined that a one-unit increase in age caused a 0.24-unit decrease in the avoidance score, and a one-unit increase in migraine pain severity caused an 0.94-unit increase in the avoidance score. It was observed that gender, migraine pain frequency and duration of migraine pain, DASS 21 depression, DASS 21 anxiety and DASS 21 stress factors did not create a statistically significant difference on POAM-P avoidance score (Table 2) (p<0.05).

According to the linear regression analysis for POAM-P overdoing, age explains 15% of the change in POAM-P overdoing score (R2=0.152). It was determined that the age (t= 2.382,

p<0.05) factor was a significant predictor of the POAM-P overdoing score. It was determined that a one-unit increase in age caused an increase of 0.16 units in the overdoing score (p<0.05). It was observed that gender, migraine pain frequency, migraine pain duration, migraine pain severity, DASS 21 depression, DASS 21 anxiety and DASS 21 stress factors did not create a statistically significant difference on POAM-P overdoing score (Table 3) (p<0.05).

According to the linear regression analysis for POAM-P pacing, DASS 21 anxiety and DASS 21 stress factors explain 20% of the change in POAM-P pacing score (R2=0.205). DASS 21 anxiety (t= 2.911, p<0.05) DASS 21 stress (t= -2.121, p<0.05) factors were found to be significant predictors of POAM-P pacing score. It was determined that a one-unit increase in the DASS 21 anxiety score caused a 0.60-unit increase in the pacing score, and a one-unit increase in the DASS 21 stress score caused a 0.47-unit decrease in the pacing score (p<0.05). Age, gender, frequency of migraine attacks, duration of pain, severity of pain, and DASS 21 depression factors did not show a statistically significant difference on the POAM-P pacing score (Table 4) (p<0.05).

Table 1: Physical and clinical characteristics of individuals with migraine, and POAM-P (Avoiding, Overdoing, Pacing), DASS 21 (Depression, Anxiety, Stress) scores

	n	X±SD	Median (Min-Max)
Age (yr)	100	32,67 ± 9,71	31 (19 -64)
Pain frequency (day/month)	100	3,99 ± 2,72	3 (1 -10)
Pain duration (hour)	100	28,49 ± 27,2	21 (4 -96)
Pain severity (NPRS,0-10)	100	7,6 ± 1,94	8 (0 -10)
POAM-P-Avoidance	100	26,49 ± 7,35	26 (4 -40)
POAM-P -Overdoing	100	22,27 ± 6,64	22 (8 -36)
POAM-P -Pacing	100	22,18 ± 6,79	22 (6 -40)
DASS 21- Depression	100	10,39 ± 5,49	11 (0 -21)
DASS 21-Anxiety	100	8,17 ± 4,54	8 (0 -20)
DASS 21-Stress	100	12,67 ± 5,05	13 (1 -21)

n: number, X: min: minimum, max: maximum, SD:Standard deviation POAM-P: The patterns of activity measure-pain, DASS 21: The depression anxiety stress scale, NPRS: Numeric pain rating scale

Table 2: Regression analysis for POAM-P avoidance

	b	SE	β	t	p
Model constant	26,86	4,81	-	5,58	0,001*
Age (yr)	-0,24	0,07	-0,31	-3,39	0,001*
Gender	-1,98	01,9	-0,10	-1,02	0,308
Pain frequency(day/month)	0,06	0,25	0,02	0,25	0,797
Pain duration (hour)	-0,01	0,02	-0,07	-0,75	0,452
Pain severity (NPRS,0-10)	0,94	0,36	0,24	2,57	0,012*
DASS 21- Depression	-0,23	0,2	-0,17	-1,10	0,272
DASS 21-Anxiety	0,21	0,21	0,13	0,98	0,327
DASS 21-Stress	0,28	0,23	0,19	1,21	0,229

POAM-P: The patterns of activity measure-pain, b: Non-standardized b, S: Standard error, β : Standardized beta, *p<0,05, DASS 21: The depression anxiety stress scale NPRS: Numeric pain rating scale R^2=0,250

Table 3: Regression analysis for POAM-P overdoing

	b	SH	β	t	p
Model constant	19,72	4,6	-	4,26	0,001*
Age (yr)	0,16	0,06	0,23	2,38	0,019*
Gender	-2,72	1,86	-0,16	-1,46	0,14
Pain frequency(day/month)	-0,13	0,24	-0,05	-0,53	0,59
Pain duration (hour)	0,005	0,02	0,02	0,20	0,84
Pain severity (NPRS,0-10)	-0,28	0,35	-0,08	-0,82	0,41
DASS 21- Depression	-0,28	0,20	-0,23	-1,42	0,156
DASS 21-Anxiety	0,30	0,20	0,20	1,45	0,149
DASS 21-Stress	0,28	0,22	0,21	1,25	0,212

POAM-P: The patterns of activity measure-pain, : Non-standardized b, S: Standard error, β : Standardized beta, *p<0,05, DASS 21: The depression anxiety stress scale NPRS: Numeric pain rating scale R2=0,152

Table 4: Regression analysis for POAM-P pacing

	b	SH	β	t	p
Model constant	20,05	4,58	-	4,37	0,001*
Age (yr)	-0,06	0,06	-0,08	-0,90	0,36
Gender	1,83	1,84	0,10	0,99	0,32
Pain frequency(day/month)	0,09	0,24	0,03	0,40	0,68
Pain duration (hour)	-0,01	0,02	-0,07	-0,79	0,42
Pain severity (NPRS,0-10)	-0,07	0,34	-0,02	-0,22	0,82
DASS 21- Depression	0,36	0,19	0,29	1,82	0,07
DASS 21-Anxiety	0,60	0,20	0,40	2,91	0,005*
DASS 21-Stress	-0,47	0,22	-0,35	-2,12	0,037*

POAM-P: The patterns of activity measure-pain, : Non-standardized b, S: Standard error, β : Standardized Beta, *p<0,05, DASS 21: The depression anxiety stress scale NPRS: Numeric pain rating scale R^2=0,205

4.Conclusion and Recommendations

In this study, it was found that the number of people using the avoidance pattern from migraineurs was high and their stress levels were high. It was determined that avoidance pattern was affected by age and migraine pain severity, overdoing pattern was affected by age factor, and pacing pattern was affected by anxiety and stress factors.

In the literature, there are studies investigating pain activity patterns in various diseases with chronic pain (Cane et al.,2013; Racine et al., 2018; Gong et al.,2023). Cane et al. investigated the relationship between pain activity patterns and psychosocial function in 393 patients with chronic pain. As a result of the study, avoidance and overdoing were associated with negative

psychosocial outcomes, while the pacing pattern was associated with positive outcomes (Cane et al., 2013). Racine et al. investigated the relationship between pain-related activity patterns and the interaction of pain, physical and psychological function in patients with fibromyalgia. The avoidance pattern was associated with increased pain interaction and worse psychological and physical functioning. The pacing pattern was found to be significantly associated with reduced pain interaction and better psychological function (Racine et al., 2018). Gong et al. studied the relationship between pain (intensity, catastrophizing) and pain activity patterns in the elderly with chronic musculoskeletal pain. In the elderly, POAM-P scores were found to be avoidance (27.39 ± 8.10), regulation (24.25 ± 9.48), and overdoing (16.65 ± 10.95) respectively. In conclusion, it was found that pain intensity and catastrophizing pain mediated the relationship between pain severity and pain-related activity patterns (Gong et al., 2023). In our study, we found the avoidance pattern score to be high in individuals with migraine. There was a negative relationship between avoidance and age, and a positive relationship between avoidance and migraine pain severity. In addition, a positive correlation was found between the overdoing pattern and age. There was a positive relationship between the pacing pattern and anxiety, and a negative relationship between pacing and stress. According to the results of this pilot study, it was observed that the avoidance pattern was higher in individuals with migraine and it was determined that the factors affecting pain activity patterns were age, pain severity, anxiety and stress level. In clinics, these factors that affect pain activity patterns in individuals with migraine should be considered in terms of monitoring the changes in the behavior pattern of the patients and an individual treatment program to be created.

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INTEGRATIVE *IN SILICO* ANALYSIS OF *PINUS ROXBURGHII* PHYTOCHEMICALS FOR DRUG DISCOVERY

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ABSTRACT

The aim of present study is to investigate in silico analysis of *Pinus Roxburghii* plant's phytocomponent for the disease of non-small-cell lung cancer (NSCLC). We observe that many peoples have problems like lung cancer, and they were treated by the synthetic medicine which are already made from the chemical compounds and so for this study we are targeted the plant which is in indian tropical forests. That plant's bark is containing various chemicals that has been used to prevent a disease like lung cancer. In this work we use various *In Silico* tool for many testing like we use PubChem Database to obtain the details of the chemical components of the plants like chemical structures, properties, and other relevant data for small molecules etc. with the help of PubChem we download the ligand and protein of The Disease. After that we use, I gem Dock for the docking of the ligand and protein interaction. Then we use VEGA QSAR for mutagenicity, carcinogenicity, Toxicity etc. Then we ADMET/ADME tools are used to predict the absorption, distribution, metabolism, excretion, and toxicity of compounds. After then we use the Lipinski rule of Five. After performing all these methods, I found that the plants Bark compound are highly able to interact with the Disease protein it is shown the inhibition as same as Drugs that are available in market.

Keywords: *Pinus Roxburghii,* In Silico, QSAR, ADMET, docking

ANALYSIS OF INFORMATIVE CONTENT OF VIDEOS PRESENT IN TURKISH ABOUT OBESITY ON YOUTUBE

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ABSTRACT
Obesity is one of the most important health problems of our age, and those with a body mass index of 30 and above are called. In recent years, information about obesity has been made in many environments, and one of them is YouTube. The aim of our research is to analyze who made the most accessed YouTube videos about obesity in Turkish and the contents of informative videos on this subject.

This is a cross-sectional study, and videos scanned on the YouTube website using the keywords "obesity, obesity, and obese" were evaluated by two independent research internists ranked by relevance.

Video channels that do not have obesity-related content were not included in this study. To reach the quality and reliability of the informative videos, it has been evaluated with the Modified Discern score (MDS) and Global Quality Score (GKP).

A total of 55 videos, listed according to their relevance on YouTube, have been reviewed by researchers, and the majority of video owners are physicians. The mean of the videos on obesity was 2.3 ± 1.4 in the first researcher and 2.5 ± 1.5 in the second researcher (p:0.000*), while the MDS was 1.5 ± 0.7 and 1.9 ± 1 respectively. It was found to be statistically significant in both scorings, which were determined as 1 (p:0.000*).

There are various videos in Turkish about obesity and treatment methods on the YouTube platform. These informative videos may be beneficial for patients, physicians and students, but the content presented in the videos must be based on scientific evidence in order to convey information correctly.

Key words; Youtube, obesity, video

EVALUATION OF THE ANTIOXIDANT, ANTI-INFLAMMATORY AND HEMOLYTIC ACTIVITIES OF *OCIMUM BASILICUM* L.

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ABSTRACT

Nowadays, a large number of aromatic and medicinal plants have been shown to possess very important biological properties that find numerous applications in various fields, namely medicine, pharmacy, cosmetology and agriculture. In this study, we evaluated some phytochemical content (phenolic compounds, flavonoids and condensed tannins) and biological activities (antioxidant, anti-inflammatory and hemolytic activities) of aqueous extract of the aerial part (leaves and stems) of *Ocimum basilicum*.

Results show that generally the yield of leaves' extract was higher than that of stems. Moreover, the same result was observed regarding total phenolic and flavonoid content. However, the condensed tannins content was almost the same in all extracts. The aqueous extract of leaves showed a low inhibitory concentration of DPPH free radicals (0.22 mg/ml) compared to stems aqueous extract (0.38 mg/ml) demonstrating a better antioxidant effect. The hemolysis test indicates that the recorded hemolysis rates remain below toxicity. Besides, aqueous extracts of leaves and stems demonstrated high anti-inflammatory potential.

Keywords: *Ocimum basilicum* L., biological activities, phenolic compounds, flavonoids, condensed tannins, aqueous extracts.

THE USE OF HOSPITAL STATISTICS IN THE HOSPITAL MANAGEMENT

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ABSTRACT

This study examined the significance of hospital Statistics in measuring effectiveness of hospital resources in CHC Arakale Akure. This Research made use of secondary sources of data where the basic hospital Statistics such as daily admissions, discharges, deaths, and daily attendance. The study showed that major hindrances for effective Statistics in the hospital lack of understanding of the fundamental usefulness of statistics in planning, research, training and budgeting for national sustainable development. This study identified low level of understanding of the significance of statistics. Based on the findings of this study, the following recommendations are suggested for policy implementation: This study identified low level of understanding of the significance of statistics, hence, there is need for more awareness creation on the importance of statistics among members of the hospital that are involved in the completion and submission of the various forms where hospital statistics are generated through seminars, conferences and workshops Health information officers and other units such as the laboratories and the nursing departments need to be re-educated on the need for timely submission of statistics generated in the various units and sections. The hospital management needs to formulate policies that will support accurate and complete statistics from the various units that can be used for effective planning and informed decision making. The hospital management should endeavor to motivate the units and department that submit their reports promptly for collation in the form of training and other

incentive that will encourage the same spirit among the concerned units and department respectively.

keywords: Promptly, incentive, Endeavours, Collation, Timely.

1.   INTRODUCTION

The Nigerian Health service delivery is characterized by inequitable distribution of resources, decaying infrastructure, poor management of human resources for health, negative attitude of health care providers, weak referral systems; poor coverage with high impact cost-effective interventions, lack of integration and poor supportive supervision. Besides, healthcare quality and safety require that the right information through accurate statistics be available at the right time to support patient care and health system management decisions. Gaining consensus on essential data content and documentation standards is a necessary prerequisite for high-quality data in the interconnected healthcare system of Nigeria. Continuous quality management of data standards and content is key to ensuring that information is usable and actionable . From time immemorial, Health Information Professionals are evaluated on the timeliness, completeness, and accuracy of the statistical reports they are responsible for preparing. It is therefore important to have policies and procedures that help ensure that reports meet these criteria. The collection of meaningful statistics is an important function of a hospital or clinic. Health records are the primary source of data used in compiling health care statistics. The health record department staff, therefore, may be responsible for the collection, analysis, interpretation and presentation of statistical data wherever possible. Today, computerized systems automatically collect and calculate many of the statistics that were once previously done manually. However, statistics are only as accurate as the original sources from which they are taken. The health information

management/health record professional should see that health records and other source documents are complete and readily available to meet the requirements for the production of useful statistics. From policy point of view, health service statistics are used for comparison of present and past performance of the hospital or clinic, guide for planning future development of the hospital or clinic, appraisal of work performed by the medical, nursing and other staff and hospital or clinic funding if government funded research. Research has shown that definitions used for the collection of statistical data on hospital utilization vary from country to country. However, the operational definition of terms has a comprehensive list of the terms used in hospital statistics and their meanings. The concept of measurement is central to the concept of hospital quality improvement; measurement provides a means to define what hospitals actually do, and to compare that with the original targets in order to identify opportunities for improvement. The principal methods of measuring hospital performance are regulatory inspection, public satisfaction surveys, third-party assessment, and statistical indicators, most of which have never been tested rigorously.

The relevant environment for this study is the CHC Arakale Akure, fully funded by the State Government of Nigeria. Primary Health Care Authority Akure South(PHCA) is a health care facility at Akure here in Nigeria. With more than a decade of experience, it is a government own facility that started operating in the year 1970 till date with the employment size of 469 (350 professional and 119 nonprofessionals. The objectives of the study are to investigate the role of hospital Statistics in measuring effectiveness of hospital resources in CHC Arakale Akure, to find out common health Statistics commonly generated in CHC Arakale Akure , to determine the scope of health Statistics generated in CHC Arakale Akure ,to find out the common use(s) of daily, monthly, quarterly and annual Statistics generated in the Department of Health Information Management in CHC Arakale Akure , to examine hindrances and challenges of effective statistical

management in CHC Arakale Akure and to find the relationship between the dependent variable and the independent variable. This research was conducted in CHC Arakale Akure, Akure south local government area purposely to assess the use of hospital Statistics in hospital management Akure. Data were collected at CHC Arakale Akure for 5yrs(2016-2020) on the total attendance, total admission, total discharge, and total death and Data were collected at CHC Arakale Akure for 5yrs (2016-2020). The data collected was analyzed by SPSS using Chi-square test, Regression and Excel.

2.0   Literature Review

At the end of the fifteenth century, mathematics was at a rather primitive stage and the threshold of the "scientific revolution" was still two generations away. The mathematics of the Greeks had only reentered European thinking in the twelfth century, and although some progress had been made in practical applications in navigation and commercial arithmetic, the burgeoning of numeracy was only beginning. Mathematicians still did not recognize the number zero or know how to deal with negative numbers. Except for a few examples of probabilistic thinking such as that in the Talmudic literature, there was scant evidence of the use of a mathematical approach to probabilities to estimate **risks** or assess the reliability of measurements until the mid-seventeenth century.

Most historians of statistics trace the origins of modern probability theory to the efforts to solve certain gambling problems . These efforts gave rise to the mathematical basis of probability theory, statistical distribution functions (*see* **Sampling Distributions**), and statistical **inference**.

The analysis of uncertainty and errors of measurement had its foundations in the field of astronomy which, from antiquity until the eighteenth century, was the dominant area for use of numerical information based on the most precise measurements that the technologies of the times permitted.

The fallibility of their observations was evident to early astronomers, who took the "best" observation when several were taken, the "best" being assessed by such criteria as the quality of observational conditions, the fame of the observer, etc. But, gradually an appreciation for averaging observations developed and various techniques for fitting the observational data to **parametric models** evolved. Many of the founders of modern statistics contributed to the early development of the theory of measurement errors including (24), (26), and (10).

A systematic approach to the collection of data and tabulating observations in a rational manner began with the teachings of (18). In his influential treatise (22), he attacked the scholastic philosophy which had developed in the Middle Ages on the basis of the methods of Aristotle. One of the first areas influenced by Bacon's approach was **demography** and **vital statistics** and the social utility of systematic observations is clearly reflected in these early efforts. The utilitarian nature of statistics is evident in the origins of the word from the Italian *stato* (state), and the original meaning of statistics was a collection of facts of interest to a statesman. Initially such facts were not primarily numerical, but included information on geography, politics, and customs of a region. The compilers of such facts were called statists, a term which survived into the nineteenth century, when the word statistics came to be used for numerical data only, replacing the term "political arithmetic", and the word "statistician" came into vogue.

2.1 Hospital Performance Using Statistics

The hospital Statistics is used as a tool for measuring the effectiveness of hospital services. The term "Measurement" implies objective assessment but does not itself include judgment of values or quality; these may be added by those who later present and interpret the data. At the system level, improvement in such areas as health priority setting, system planning, financing and

resource allocation, professional recognition and overall quality management often become important aims of health reforms. At the national level, many countries, such as Ireland (16), Denmark (22*),* the United Kingdom (http://www.doh.gov.uk/newnhs/quality.htm) and Germany (23), have developed frameworks for performance assessment and improvement. At the European level much work has been done to summarize data on hospital performance and quality assurance policies in the European Union (15) and other WHO Member States. General recommendations on the development and implementation of quality improvement systems in health care were made to health ministers by the Council of Europe in 1(997) and best practices in the efficient and effective delivery of services were published by the European Commission in (1999). At the global level, findings concerning health systems performance measurement in 192 Member States were summarized in the (25),This document sets out a framework for evaluating and improving performance of health systems in four key functions: providing services, creating resources, financing and oversight. Hospital performance may be defined according to the achievement of specified targets, either clinical or administrative (*23),*. Ultimately, the goal of health care is better health, but there are many intermediate measures of both process and outcome. Targets may relate to traditional hospital functions, such as diagnosis, treatment, care and rehabilitation as well as to teaching and research. However, both the definition and the functions of hospitals are changing, as emphasis shifts from inpatient care to ambulatory care, community outreach programmes and health care networks (16). Hospital performance may thus be expected to include elements of community care and public health, as well as social and employment functions. These dimensions of hospital performance have been analyzed in the European context (25).Measurement is central to the concept of quality improvement; it provides a means to define what hospitals actually do,

and to compare that with the original targets or expectations in order to identify opportunities for improvement.

3. CHI-SQUARE TEST

The Chi-Square test is used to determine if there is a significant relationship between two nominal (categorical) variables. The frequency of each category for one nominal variable is compared across the categories of the second nominal variable. The null hypothesis for this test is that there is no relationship between the total attendance, total admission, total discharge, and total death. The alternative hypothesis is that there is a relationship between total attendance, total admission, total discharge, and total death.

The formula is given as

$$\chi^2 = \sum_{i=1}^{r} \sum_{i=1}^{c} \frac{\left(o_{ij} - E_{ij}\right)^2}{E_{ij}}$$

Where , χ^2 = Chi-Square test of Independence, O_{ij} = Observed value of two nominal variables

E_{ij} = Expected value of two nominal variables, DF = (r-1)(c-1)

Where: DF = Degree of freedom

r = number of rows, c = number of columns, **Decision criterion:** P-value ≤ 0.05 reject H_0

3.1 REGRESSION TEST (LEAST SQUARE METHOD)

Regression analysis is one of the most frequently used tools in market research. In its simplest form, regression analysis allows researchers to analyze relationships between one independent and one dependent variable.

General regression model

$$Y = \beta_0 + \beta_1 X + \varepsilon$$

β_0, and β_1 are parameters, X is a known constant, ε is the random error

Decision criterion: P-value ≤ 0.05 reject H_0

3.1   DATA PRESENTATION

Table 1: This shows the five years data for the total attendance, total admission, total discharge, and total death.

YEAR	TOTAL ATTENDANCE	TOTAL ADMISSION	TOTAL DISCHARGE	TOTAL DEATH
2016	40,602	6,208	5,519	672
2017	36,201	5,892	4,969	658
2018	32,803	5,247	4,827	400
2019	27,702	2,402	2,076	325
2020	48,404	8,724	7,809	981

Research Questions

What are the common and scope of health Statistics generated in CHC Arakale Akure?

Figure 1

FIVE YEARS ANALYSIS ON TOTAL ATTENDANCE

TOTAL DEATH; 2020; 981

TOTAL DEATH; 2016; 672

TOTAL DEATH; 2017; 658

TOTAL DEATH; 2018; 400

TOTAL DEATH; 2019; 325

Figure 2

FIVE YEARS ANALYSIS OF TOTAL ADMISSION

Figure 3

FIVE YEARS ANALYSIS ON TOTAL DISCHARGE

Figure 4

TOTAL DEATH
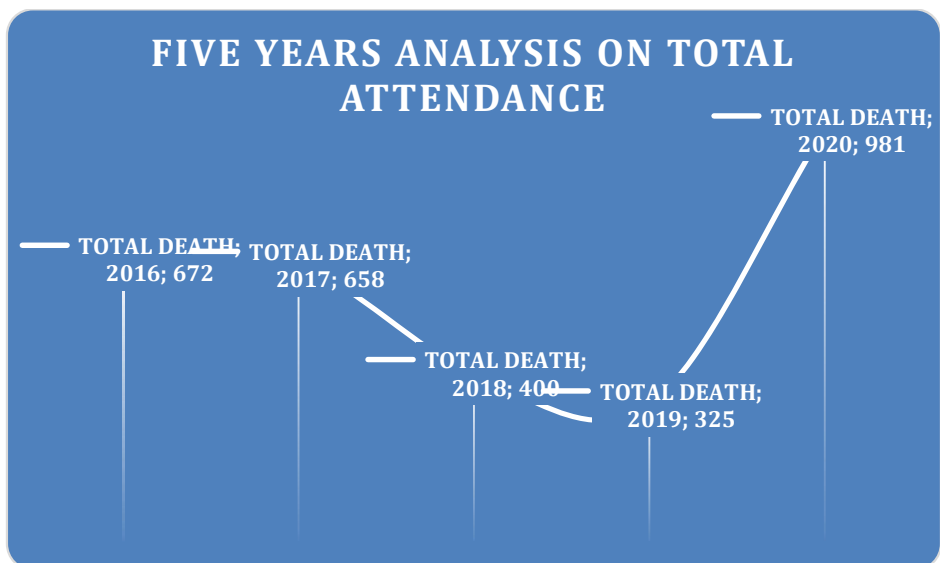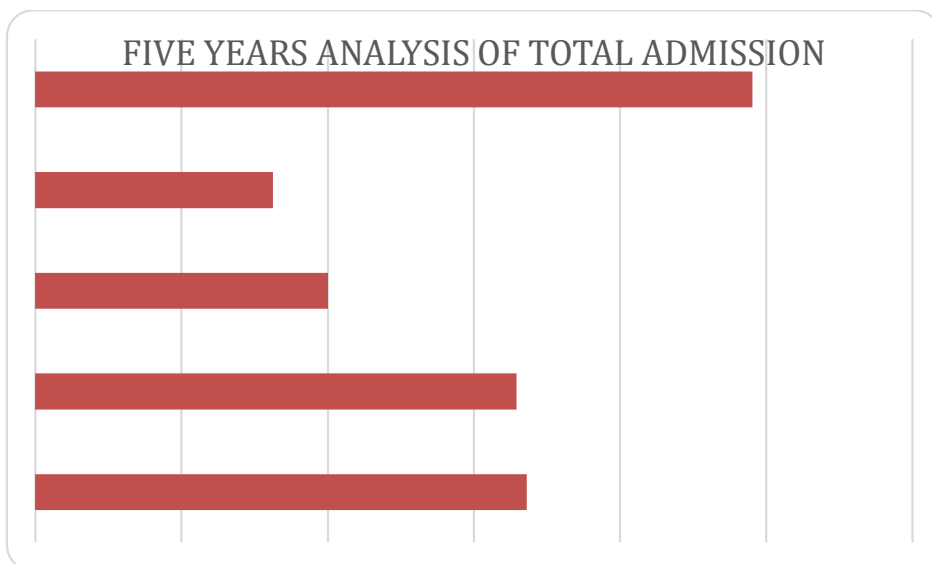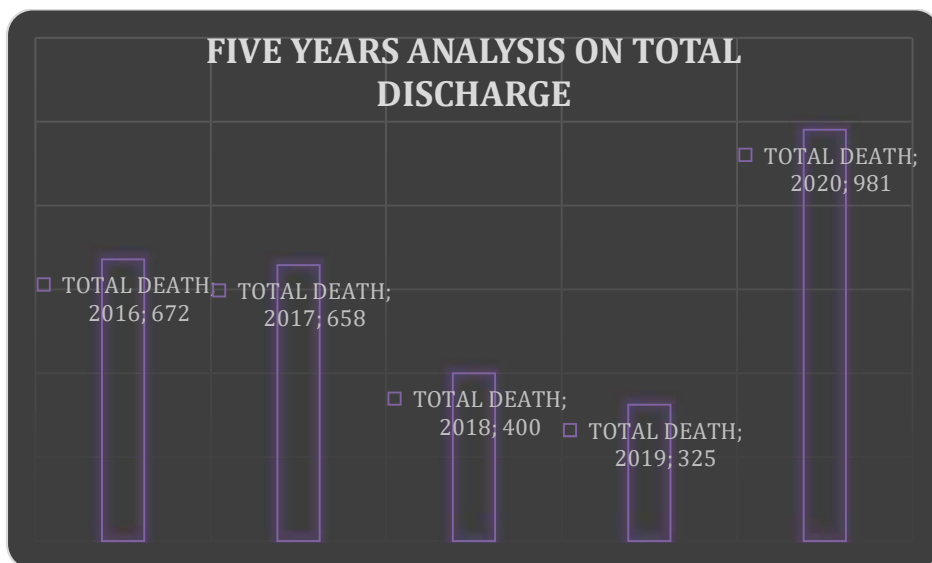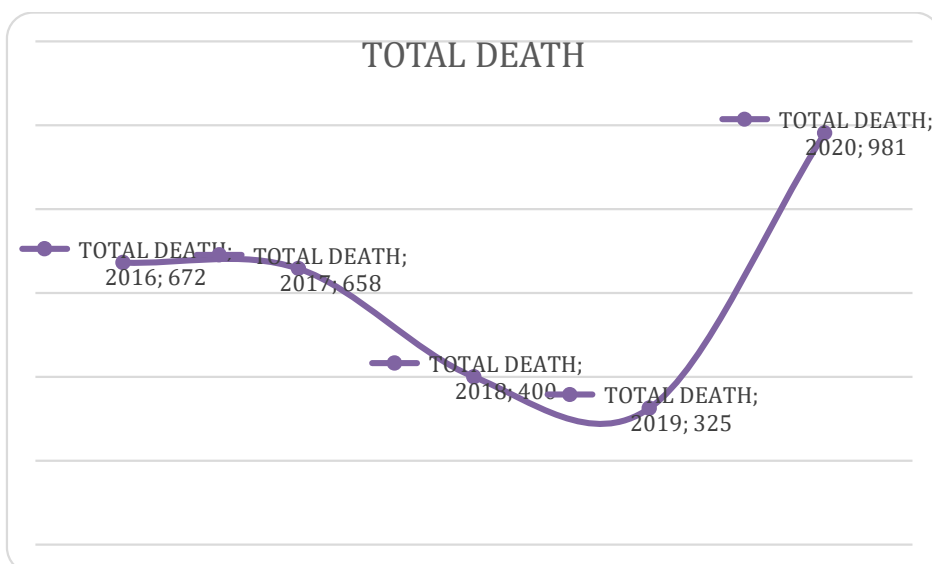
From the analysis in figures 1- 4 above, it is obvious that the health statistics generated in (PHCA) includes yearly admissions, discharges, deaths, and yearly attendance. Each of these statistics is significant in the formulation and implementation of health policy at the tree levels of health care in Nigeria. Beyond those presented in the table and figures, there are other statistics such as children's statistics and other statistics that also serve as impute into health planning for sustainable national development.

Research Questions

 How are the daily, monthly, quarterly and annual statistics generated in the Department of health information management in CHC Arakale Akure being utilized?

Common use(s) of daily, monthly, quarterly and annual statistics generated in the Department of Health Information Management in the PHCA

Research Questions

What hindrances and challenges of effective statistical management in (OAUTHC), Ile Ife?

Descriptive

Descriptive Statistics

	N	Minimum	Maximum	Sum	Mean	Std. Deviation
Total Attendance	5	27702	48404	185712	37142.40	7868.136
Total Admission	5	2402	8724	28473	5694.60	2265.026
Total Discharge	5	2076	7809	25200	5040.00	2045.269
Total Death	5	325	981	3036	607.20	259.362
Valid N (listwise)	5					

Crosstabs

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Row * colum	242421	100.0%	0	0.0%	242421	100.0%

Total attendance, total admission, total discharge, and total death *** year Cross tabulation**

			year 1	2	3	4	Total
total attendance, total admission, total discharge, and total death.	1	Count	40602	6208	5519	672	53001
		Expected Count	40602.6	6225.1	5509.5	663.8	53001.0
	2	Count	36201	5892	4969	658	47720
		Expected Count	36557.0	5604.8	4960.6	597.6	47720.0
	3	Count	32803	5247	4827	400	43277
		Expected Count	33153.3	5083.0	4498.7	542.0	43277.0
	4	Count	27702	2402	2076	325	32505
		Expected Count	24901.2	3817.8	3378.9	407.1	32505.0
	5	Count	48404	8724	7809	981	65918
		Expected Count	50498.0	7742.2	6852.3	825.5	65918.0
Total		Count	185712	28473	25200	3036	242421
		Expected Count	185712.0	28473.0	25200.0	3036.0	242421.0

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	1827.821[a]	12	.000
Likelihood Ratio	1970.828	12	.000
Linear-by-Linear Association	12.867	1	.000
N of Valid Cases	242421		

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 407.08.

Hypothesis statement

H_0: Assumes that there is no association between year and total attendance, total admission, total discharge, and total death.

H_1: Assumes that there is association in between year and total attendance, total admission, total discharge, and total death.

level of significance:0.5

Decision: Since P-value (0.000) < level of significance (0.05), We reject Ho and conclude that there is association in between year and total attendance, total admission, total discharge, and total death.

Regression
Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.995a	.991	.963	1513.483

a. Predictors: (Constant), Total Death, Total Discharge, Total Admission

ANOVAª

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	245339613.479	3	81779871.160	35.702	.122b
	Residual	2290631.721	1	2290631.721		
	Total	247630245.200	4			

a. Dependent Variable: Total Attendance
b. Predictors: (Constant), Total Death, Total Discharge, Total Admission

Coefficientsª

Model	Unstandardized Coefficients B	Std. Error	Standardized Coefficients Beta	t	Sig.	95.0% Confidence Interval for B Lower Bound	Upper Bound
(Constant)	18902.335	2090.479		9.042	.070	-7659.720	45464.391
Total Admission	-7.426	6.186	-2.138	-1.201	.442	-86.026	71.173
Total Discharge	8.796	6.037	2.286	1.457	.383	-67.916	85.508
Total Death	26.678	10.393	.879	2.567	.236	-105.372	158.727

a. Dependent Variable: Total Attendance

The regression equation is
Use of hospital statistics = 18902.33 -7.426X1+8.796X2+26.678X3

4.   Summary

This study examined the significance of hospital Statistics in the hospital management at CHC Arakale Akure Ondo state. The study made use of secondary sources of data where the basic hospital Statistics such as yearly admissions, discharges, deaths, and yearly attendance. The study showed that major hindrances for effective statistics in the hospital were lack of understanding of the fundamental usefulness of statistics in planning, research, training and budgeting for national sustainable development.

5.   CONCLUSION

This study concluded that Statistics remain the bedrock for an informed decision making among policy makers in the health sector. The study also concluded that the major ingredient of effective statistical collation is the collective efforts of all concerned units and department within the hospital such as nursing, laboratories and the medical and surgical departments.

6.   RECOMMENDATIONS

Based on the findings of this study, the following recommendations are suggested for policy implementation:

1. This study identified low level of understanding of the significance of statistics, hence, there is need for more awareness creation on the importance of statistics among members
of the hospital that are involved in the completion and submission of the various forms where hospital statistics are generated through seminars, conferences and workshops

2. Health information officers and other units such as the laboratories and the nursing departments need to be re-educated on the need for timely submission of statistics generated in the various units and sections

3. The hospital management needs to formulate policies that will support accurate and complete statistics from the various units that can be used for effective planning and informed decision making

4. The hospital management should endeavor to motivate the units and department that submit their reports promptly for collation in the form of training and other incentive that will encourage the same spirit among the concerned units and department respectively.

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ON THE FREQUENCY OF THE MASTOID FORAMEN ACCORDING TO CRANIOLOGY

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ABSTRACT

Background. In the study of emissary veins, special attention is paid to craniological material. Among emissary foramina, the mastoid foramen is distinguished by a variety of frequencies and localizations.

Purpose. The study aimed to investigate the localization of the mastoid foramina.

Methodology. The study material was 100 skulls of adults of both sexes. In the study of the frequency of mastoid foramina, the cranioscopy method was used. The localization of foramina was identified according to Jane E. Buikstra and Douglas H. Ubelaker (1994).

Results. The results of the study showed that the mastoid foramen is absent on 23 skulls on the left side (23%). On this side, in 47 skulls (47%), the foramen is located on the temporal bone, and in 29 cases (29%), the mastoid foramen is located on the suture located between the temporal and occipital bones. Only on one skull was the left mastoid foramen located on the occipital bone (1%). On the right side, the mastoid foramen was absent in 27 skulls (27%). In 45

skulls, the foramen was located on the temporal bone (45%); in 24 cases, the mastoid foramen was found on the occipitomastoid suture (24%). On 4 skulls, the mastoid foramen was found on the occipital bone (4%).

Conclusion. Craniological material is of great importance for determining the frequency and localization of the mastoid foramen. The data obtained by the cranioscopic method are also important for clinical practice.

Key words: mastoid foramen, frequency, temporal bone.

WORK SAMPLING IN A PRIVATE HOSPITAL

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ABSTRACT

As a result of technologic developments occured in the last century, new smart machines were developed in order to accomplish labor intensive jobs. So the labour intensive jobs were transferred to the new smart machines. However, this kind of transformation is quite hard for some sectors such as health sector as the jobs in health sector require high quality expertise. Analysis of labour intensive jobs is an important task. This analysis can be carried out by several methods and work sampling is one of them. The work sampling method is used for estimating the proportion of time that a worker or machine spends on various activities and the idle time. The method used in several industries both in manufacturing and service sector. However, the usage of the method in service sector is limited. Research regarding the healthcare officers other than nurses is more limited.

This research was made in order to analyse a specific job performed in a hospital by work sampling method. The job description includes several activities from checking the appointments of the out-patients to taking the payments of out-patients. The job is performed by three employees and work sampling method is applied for the three employee. The rate of time spent with work related activities are compared for three employees.

Keywords: Hospital, job analysis, work sampling, healthcare sector.

Introduction

In the beginnings of 20th century huge production facilities are constructed. The importance of productivity and work measurement raised. Work sampling which was developed by Tippet is one of the methods of work measurement (1). The aim of the work sampling method is to estimate the proportion of time that a worker or a machine spends on the activities related with the job. Besides this idle time for the worker or the machine is estimated. It is not aimed to measure the standard time of a repetitive job in the work sampling technique, instead observations are made at random intervals in

order to collect information about what is done for a non-repetitive job. In non-repetitive jobs the worker performs several tasks and work sampling aims to estimate the time spent on each task The worker may be idle or may be doing some activity regarding the job. All information during the observation performed by a random schedule is recorded (2).

The results of the work sampling largely used to estimate how employees spend their time among various activities. According to the results some decisions such as; estimates of activity cost, reassignment of duties, staffing changes can be made. Besides this delay allowances or unavoidable delays and idle times can be estimated (3).

There are various research regarding work sampling in the literature however the research in health sector especially in Turkish hospitals is limited (4). The research in work sampling in healthcare in Turkey is focused on the nurses and research in healthcare officers is limited. According to this fact this research was made in order to analyze a spesific job performed by healthcare officers in a hospital by work sampling method.

Literature

The number of research regarding work sampling in health sector has been rising in the last decades. (5) mentioned that usage of the works sampling methodology in the department can be beneficial. (6) reviewed 23 studies regarding job analysis in healthcare and found that nearly one third of the research were conducted using work sampling. So it can be seen that research regarding work sampling in healthcare has been gaining importance. Here some of the research in the literature is mentioned. (7) conducted a study in a training hospital in Toronto. They wanted to determine how much time intrapartum nurses spend on average supportive care throughout the day. The results of the research showed that nurses allocated % 9.9 to this entire process. (8) conducted a research by measuring the activities of medical assistants in a university hospital. The results obtained by random work sampling concluded that assistants spend most of working day in patient care. (9) analysed how long intrapartum unit nurses were able to provide supportive care during their shifts. As a result of the research, it was observed that intrapartum unit nurses provided little supportive care time to women during the birth process. (10) analyzed the activities of nurses and doctors working in the intensive care unit using the work sampling method. (11) conducted work sampling on surgents in a surgery hospital. (12) conducted a job analysis study on nurses in a healthcare institution using the job sampling method.(13)

determined the working hours of rehabilitation personnel using the job sampling method. (14) used the job sampling method to determine how pharmacists allocate their time to various activities. (15) performed a job analysis for care coordinator and care worker positions in the pediatric clinic using the job sampling method. (16) conducted a job analysis using the job sampling method to place students in the internship program in the healthcare sector. (17) conducted a job analysis on the activities of pharmacists in Malaysia using the job sampling method. (18) analyzed the activities of nurses working in different positions in a healthcare institution using the job sampling method.

Research regarding work sampling in Turkey is limited. Some examples of are as follows. (19) used work sampling method in order to estimate the work loading of nurses in a private hospital in Turkey. (20) used the job analysis method on clinical nurses. (4) conducted a job analysis on the utilization of time by nurses in the psychology department using the job sampling method. (21) determined how surgical nurses in a public hospital in Istanbul spend their time using the job sampling method.

Methodology

Work Sampling

Work sampling can be performed using the following steps (Stevenson, 2015: 313):

Step 1: Clearly identify the worker(s) or machine(s) to be studied.

Step 2: Notify the workers and supervisors of the purpose of the study to avoid arousing suspicions.

Step 3: Compute an initial estimate of sample size using a preliminary estimate of p, if available (e.g., from analyst experience or past data). Otherwise, use $p\hat{}$ .50.

Step 4: Develop a random observation schedule.

Step 5: Begin taking observations. Recompute the required sample size several times during the study.

Step 6: Determine the estimated proportion of time spent on the specified activity.

In work sampling methodology the formula (1) is used to determine if the required sample size is achieved (3).

$$n = \frac{z^2 p(1-p)}{h^2} \qquad (1)$$

where

n = required sample size
z = number of standard deviations for the desired confidence level
p = estimated value of sample proportion (of time worker is observed busy or idle)
h = acceptable error level, in percent (as a decimal)

Application of Work Sampling in Hospital

The purpose of the research is to estimate the idle time for three officers works in a private hospital. The hospital is a private hospital settled in Edirne, Turkey. The three officers work in the registration desk of the hospital. However hospital management wonders if three person is required or not. The management assumes that the idle time of the officers is %20-%50 which includes personal time as well. In order to analyse this problem it is decide that a work sampling is required. The research is conducted in April and May of 2022.

Work sampling methodology is performed according to the steps recommended by (2) In the first step of work sampling the job is described. The job elements consist of:

- making appointments for outpatients,
- making registrations of outpatients for examination, medical imaging and laboratory analysis,
- answering the phones,
- taking the payments of inpatients and outpatients.

In the second step The officers to be observed and the supervisors of the hospital are informed about the study. As all the observations made on the cameras of the hospital the officers were not uncofortable about the analysis.

In the third step an initial sample size (n_i) is determined using formula 1. In the formula p=0,4, h=0,5 and Z is taken as %95. According to the formula n_i is obtained as 245 for p=0,2 and 384 for p=0,5.

In the fourth step a random observation schedule is developed. The observation were made randomly on the weekdays in the regular working hours. Each of three officers observed. In the study the important thing is finding the working time and the idle time of each officer.

In the fifth step observations were taken according to the schedule. This is used to estimate the sample size as the management do not have an exact idea and aim regarding the idle times. Initially 100 observations were made for each of the officers to determine the proportion of idle time. Proportion of

idle time for three officers (p_1, p_2, p_3) is obtained as p_1= %33, p_2= %37 and p_3.= %41. According to this proportions required sample size for officer 1 (n_1) is computed as (p_1= %33, h=0,5 and Z is taken as %95) n_1= 358. Similarly the required sample size for officer 2 (n_2) is computed as (p_2= %37, h=0,5 and Z is taken as %95) n_2= 340, and required sample size for officer 1 (n_3) is computed as (p_3= %41, h=0,5 and Z is taken as %95) n_3= 372.

For the first officer after taking total 358 observations new p_1 is found as %31,56 and required sample size for officer 1 is computed again (for new p_1= %31,56, h=0,5 and Z=%95) and found as 332 which is below the achieved sample size of 358.

For officer 2, after making 340 total observations new p_2 is computed as %28,82 and required sample size (for new p_2= %28,82, h=0,5 and Z=%95) is found as 315 which is below the achieved sample size of 340.

For officer 3, after making 372 total observations new p_3 is computed as %37,09 and new required sample size (for new p_3= %37,09, h=0,5 and Z=%95) as 358 which is below the achieved sample size of 372.

In the last step the proportions are obtained as p_1= %31,5, p_2= %28,8 and p_3= %37,09. In order to check the results 50 more observations were taken for the each officer. The proportions for 455 observations were p_1= %31,61, p_2= %29,00 and p_3= %37,20. As expected the result were very similar.

Conclusions

The literature in work sampling in healthcare in Turkey is limited. The research in work sampling in healthcare in Turkey is focused on the nurses and research in healthcare officers is limited (4, 19, 20, 21). So it is assumed that this research will contribute to the literature.

Three officers in a hospital desk are analysed using work sampling. The results showed that the idle times for three officers were p_1= %31,5, p_2= %28,8 and p_3= %37,09 respectively. This results will be beneficial for the management in order to make new decisions. This research has some limitations such as making the observations from the camera. Besides this only the officers works for a specific position are analysed. Future research can analyse healthcare officers in other positions.

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CERRAHİ HEMŞİRELERİN MESLEKTAŞ DAYANIŞMASININ İŞ YAŞAM KALİTESİ ÜZERİNE ETKİSİ

COLLEAGUE SOLIDARITY OF SURGICAL NURSES IMPACT ON QUALITY OF WORK LIFE

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ÖZET

Bu çalışmada cerrahi hemşirelerin meslektaş dayanışmasının iş-yaşam kalitesi üzerine etkisi incelemek amacıyla Nisan 2023-Mayıs 2023 tarihleri arasında İstanbul ili bir özel hastanede çalışan toplam 209 cerrahi hemşiresi ile gerçekleştirildi. Araştırma verileri ''Tanıtıcı Bilgi Formu'', ''Hemşirelerde Meslektaş Dayanışması Ölçeği'', ''Hemşirelik İş Yaşam Kalitesi Ölçeği'' ile toplandı.

Veriler, SPSS (Statistical Package Program for Social Science) 21.0 programı kullanılarak analiz edildi. Ölçek puanlarının normallik sınamasında çarpıklık (skewness) ve basıklık (kurtosis) katsayıları kullanıldı. Normal dağılım göstermeyen puanların logaritmik dönüşümleri yapılarak hemşirelerde meslektaş dayanışması ile iş yaşamı kalitesi arasındaki ilişkinin analizinde Pearson korelasyon testi, hemşirelerde meslektaş dayanışmasının iş yaşamı kalitesi üzerindeki etkisini belirlemek amacıyla çoklu regresyon analizi kullanıldı. Analizlerde güven aralığı %95 ($p<0,05$) olarak belirlendi.

Hemşirelerde mesleki dayanışma ölçek toplam puanı 97,01±8,33 olarak tespit edildi. Alt boyutlar düzeyinde incelendiğinde en yüksek mesleki dayanışmanın akademik dayanışma (27,73±9,56) olduğu, mesleki dayanışmaya ilişkin olumsuz düşünce puanlarının ise, (13,02±5,46) düşük düzeyde olduğu belirlendi. Hemşirelik iş yaşamı kalitesi ölçek toplam puanı 142,61±14,41 olarak tespit edildi. Alt boyutlar düzeyinde incelendiğinde en yüksek iş yaşamı kalitesinin iş/çalışma ortamı (37,77±4,16) olduğu, en düşük iş yaşamı kalitesinin ise yöneticilerle ilişkiler (18,96±2,42) olduğu belirlendi. Hemşirelerde meslektaş dayanışmasının iş yaşamı kalitesi üzerinde anlamlı düzeyde olumlu etkisinin olduğu görüldü. Duygusal dayanışma ($r=0,49$; $p<0,05$), akademik dayanışma ($r=0,58$; $p<0,05$) ve mesleki dayanışma ($r=0,51$; $p<0,05$) puanları ile iş yaşamı kalitesi puanı arasında pozitif yönde anlamlı ilişki olduğu belirlendi. Dayanışma ile ilgili olumsuz düşünceler puanı ile iş yaşamı kalitesi puanı arasında negatif yönde ve anlamlı bir ilişki olduğu saptandı ($r=-0,20$; $p<0,05$).

Araştırma bulgularına bakıldığında cerrahi hemşireleri arasında meslektaş dayanışmasının iş yaşam kalitesi üzerine anlamlı düzeyde olumlu bir etkisi ve pozitif yönde anlamlı bir ilişkisi

olduğu görüldü. Sonuçlar doğrultusunda meslektaş dayanışması arttıkça iş yaşam kalitesinin arttığını söyleyebiliriz.

Anahtar Sözcükler: Cerrahi Hemşire, İş-Yaşam Kalitesi, Meslektaş Dayanışması

ABSRACT

This study was conducted between April 2023 and May 2023 with a total of 209 surgical nurses working in a private hospital in Istanbul, Turkey, in order to examine the impact of professional collegiality among surgical nurses on work-life quality. Research data were collected using the "Demographic Information Form," the "Nurses' Professional Collegiality Scale," and the "Nursing Work-Life Quality Scale."

The data were analyzed using the SPSS (Statistical Package Program for Social Science) 21.0 software. Skewness and kurtosis coefficients were used to test the normality of the scale scores. For scores that did not follow a normal distribution, logarithmic transformations were applied. Pearson correlation test was used to analyze the relationship between professional collegiality among nurses and work-life quality, while multiple regression analysis was conducted to determine the impact of professional collegiality on work-life quality. A confidence interval of 95% ($p < 0.05$) was set for the analyses.

The total score for professional collegiality among nurses was found to be 97.01 ± 8.33. When examined at the subscale level, the highest level of collegiality was observed in academic consultation (27.73 ± 9.56), while negative thoughts regarding professional collegiality were found to be at a low level (13.02 ± 5.46). The total score for nursing work-life quality was determined as 142.61 ± 14.41. When analyzed at the subscale level, the highest work-life quality was related to job/work environment (37.77 ± 4.16), while the lowest work-life quality was associated with relationships with supervisors (18.96 ± 2.42). Colleague solidarity among nurses was found to have a significant positive effect on the quality of work life. Emotional solidarity ($r=0.49$; $p<0.05$), academic solidarity ($r=0.58$; $p<0.05$) and professional solidarity ($r=0.51$; $p<0.05$) scores and work It was determined that there was a positive and significant relationship between the quality of life score. It was found that there was a negative and significant relationship between the score of negative thoughts about solidarity and the quality of work life score ($r=-0.20$; $p<0.05$).

Looking at the research findings, it was seen that colleague solidarity among surgical nurses had a positive effect on the quality of work life and a significant positive relationship. In line with the results, we can say that as colleague solidarity increases, the quality of work life increases.

Keywords: Surgical Nurse, Quality of Work Life, Colleague Solidarity

STUDY THE EFFECT OF SMOKING ON SOME HEMATOLOGICAL PARAMETERS IN MALES AT AL-NAJAF GOVERNORATE, IRAQ

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Abstract

In this work, it was studying the effect of cigarette smoking on some blood parameters such as WBC ("LYM" Lymphocyte Percent, "MID" Monocyte Percent, and "GRAN" Granulocyte Percent), RBC ("MCV" Mean Corpuscular Volume, "MCH" Mean Corpuscular Hemoglobin, and "MCHC" Mean Corpuscular Hemoglobin concentration), and PLT ("MPV" Mean Platelet Volume, "PDW" Platelet Distribution Width, and "PCT" Plateletcrit) on 125 males from Al-Najaf governorate; (75) smokers and (50) nonsmokers at five ages gropes from 20 to 70 years old. The results showed that the results of LYM, MID, GRAN, MCH, MCHC, MPV, and PDW were non-significant changes in all age groups ($p>0.05$) in smokers compared with nonsmokers. While, the results MCV and PCT were increasing significant changes in all age groups ($p<0.05$) for smokers compared with nonsmokers. Also, it is found that there are non-significant changes in MID and MCV comparison between different ages in smokers groups, but other parameters were significant. While in nonsmokers, it is found there are non-significant changes in LYM, GRAN, MPV, and PCT comparison between different ages groups, but other parameters were significant. Therefore, it can be concluded that the cigarette smoking effect to increases for MCV and PCT while no effect on their parameters in the present study such as LYM, MID, GRAN, MCH, MCHC, MPV, and PDW for smokers compared with the same ages of nonsmokers.

Keywords: cigarette smoking, hematological parameters, Males, Al-Najaf Governorate, and Iraq.

Introduction

The evaluation of a complete blood count (CBC) is of utmost importance, as it serves not only as a diagnostic and therapeutic tool for hematologic disorders but also as a means to evaluate an individual's general health status [1]. When establishing a medical diagnosis, choosing a course of treatment, or doing any kind of physiological evaluation, a person's CBC is compared to a reference interval (RI) [2]. Numerous external stimuli, including radiation and smoking, have been identified as contributors to the generation of free radicals, leading to a disruption in the equilibrium between free radicals and the protective mechanisms provided by antioxidants [3]. Cigarette smoking is a serious health problem and most important avoidable causes of death in world [4]. There is substantial evidence linking smoking to several health conditions, including chronic obstructive pulmonary disease, cancer, and atherosclerosis [5-7]. Smoking causes 1.69 million deaths annually due to heart disease, 0.97 million deaths annually due to (COPD), and 0.85 million deaths annually due to lung cancer. [8]. Cigarette smoke has a diverse array of chemical compounds, consisting of around 4000 distinct components. Over the last three to four decades, a substantial amount of

information has been gathered, elucidating the precise chemical makeup of cigarette smoke in terms of both qualitative and quantitative aspects. Several compounds have been identified, including various pyridine alkaloids like nicotine, ammonia, acrolein, phenols, acetaldehyde, and N-nitrosamine. Additionally, polycyclic aromatic hydrocarbons such as benzopyrine, combustion gases like carbon monoxide, nitrogen oxides, and hydrogen cyanide, as well as trace metals and α-emitter radioactive elements such as polonium, radium, and thorium have been detected [8,9]. The act of smoking cigarettes results in the introduction of several harmful substances into the body. These chemicals or their metabolites have the potential to exhibit electrophilic properties, allowing them to interact with biological macromolecules. Alternatively, they may induce oxidative stress by the generation of reactive species or the activation of radical chain reactions [10]. Cigarette smoke contains a significant amount of Reactive Oxygen and Nitrogen Species (ROS and RNS), including nitrogen, alkoxyl, and peroxyl radicals. These factors may induce the generation of additional free radicals, which subsequently trigger lipid peroxidation on the low-density lipoprotein (LDL) particle and result in dysfunction of endothelial cells [11]. Numerous highly oxidative and carcinogenic compounds, including polynuclear aromatic hydrocarbons, tobacco-specific N-nitrosamines, and aromatic amines, are present in cigarette smoke [12]. Last but not least, several studies have shown that smoking negatively affects white cell count, differential leukocyte percentages, and indicators of platelet activity [13]. Based on statistics provided by the World Health Organization (WHO), it is estimated that the annual worldwide mortality rate resulting from smoking-related illnesses now stands at around 5 million individuals. Projections indicate that if this prevailing pattern persists, the number of deaths attributable to smoking-related ailments is anticipated to double, reaching 10 million by the year 2025 [14]. Multiple studies have demonstrated that smoking has detrimental effects on human health and serves as a contributing factor for the onset of various pathological conditions and diseases, including chronic obstructive pulmonary disease, cancer, pancreatitis, gastrointestinal disorders, periodontal disease, metabolic syndrome, and certain autoimmune diseases [14,15]. Extensive research has been conducted on the impact of smoking on changes in the hemostatic and fibrinolytic system, antioxidant status, and hematological parameters. However, the findings of these studies have been conflicting. The objective of the current investigation was to assess the influence of secondhand smoke exposure on indicators of complete blood count. Consequently, the current investigation was undertaken to assess the impact of cigarette smoking on some hematological parameters in individuals who smoke compared to a control group of non-smokers of similar age.

Methology

A case-control study with an analytical approach was undertaken to assess the levels of various white blood cells (specifically Lymphocyte Percent, Monocyte Percent, and Granulocyte Percent), red blood cells (including Mean Corpuscular Volume, Mean Corpuscular Hemoglobin, and Mean Corpuscular Hemoglobin concentration), and platelets (such as Mean Platelet Volume, Platelet Distribution Width, and Plateletcrit) among individuals who smoke cigarettes and hookahs in the Najaf governorate of Iraq. A study was undertaken throughout the first half of the year 2023. The present research used a cross-sectional design and included a sample of 125 male participants who were between the age range of 21 to 70 years and exhibited good health. For the aim of this research, a total of 75 individuals who smoke cigarettes and hookah were

selected as the study group, whereas 50 individuals who do not smoke were chosen as the control group.

Method of data collection: A pre-designed and pre-tested questionnaire was used to gather biosocial data from participants, including information on age, smoking dosage, duration of smoking, and any associated illnesses. The present research aimed to examine the impact of cigarette smoking on haematological markers in a cohort of individuals who were in good health. The research consisted of a cohort of 125 participants, with 75 individuals classified as smokers and 50 individuals classified as non-smokers. The age range of the participants spanned from 21 to 70 years.Informed permission was obtained from each participant in the research, and the study methodology received approval from the Ethical Review Committee. The collection of data pertaining to smoking behaviors and tobacco consumption was facilitated by the use of a self-administered questionnaire, which was completed by the study participants. The participants included in this trial exhibited no signs of current liver and renal illness, chronic pancreatitis, gastrointestinal disease, inflammatory bowel disease, history of ischemic heart disease or diastolic blood pressure, endocrine problems, infection, or hormonal medication.

Sample processing: Participants who identified as smokers and non-smokers were recruited for the laboratory study. A 5 ml syringe was used to extract a blood sample from the participants' veins, which was then transferred into EDTA tubes. Each participant was assigned a unique code, which was then recorded on the respective tubes for both smokers and non-smokers. Subsequently, a manual preparation process was conducted for each tube, followed by their placement on a device known as a (shaker) for a duration of 3-5 minutes. This (shaker) facilitates the movement and rotation of the tubes, ensuring the thorough mixing of the blood samples with the anticoagulant substance, specifically EDTA, contained within the tubes. The purpose of this step is to prevent the coagulation of the samples, thereby preparing them for analysis using the CBC device.

CBC: (complete blood count): The blood cell count evaluations were conducted using the Sysmex automated hematological analyzer, a highly accurate and precise instrument capable of measuring 18 hematological parameters. The Sysmex analyzer primarily utilizes the electronic resistance (impedance) detection technology to accurately count and size the leukocytes, erythrocytes, and platelets. By using three initial hydraulic systems for white blood cells (WBCs), red blood cells (RBCs), and platelets (PLTs), this study aims to demonstrate the method of determining the blood count results of these cells. The findings will be shown on a liquid crystal display (LCD) in the form of a histogram and will also be printed on thermal paper [16].

The parameters examined in the complete blood count (CBC) assay encompassed Lymphocyte Percent (LYM), Monocyte Percent (MID), and Granulocyte Percent (GRAN), as well as Mean Corpuscular Volume (MCV), Mean Corpuscular Hemoglobin (MCH), Mean Corpuscular Hemoglobin concentration (MCHC), Mean Platelet Volume (MPV), Platelet Distribution Width (PDW), and Plateletcrit (PCT).

Data analysis: The current research aimed to investigate the disparities in blood parameters between individuals who smoke and those who do not.The Mann-Whitney U test, independent t-test, ANOVA, and Kruskal-Wallis tests were used to assess both

quantitative and qualitative data. The analysis of the association between quantitative variables was conducted by using the Pearson correlation coefficient. A p-value below 0.05 was deemed to be statistically significant. . The statistical analysis was performed using IBM SPSS Statistics (version 27 for Windows, USA).

Results

The results were divided into two groups for non-smokers and smokers. Criteria related to white blood cells were found: (LYM, MID, and GRAN), as well as criteria for red blood cells: (MCV, MCH, and MCHC), in addition to platelet parameters: (MPV, PDW, and PCT), where the results are tabulated in table (1), and table (2). Table 1 showed a significant increase (p<0.05) in MCV and PCT in smokers compared with non- smoker for all age groups. The values of LYM, MID, GRAN, MCH, MCHC, MPV, and PDW were non-significantly decreased (p>0.05) in smoker compared with non- smoker in all age groups. Table2 showed a significant (p<0.05) in MCH, MCHC, and PDW in smokers and non- smoker with all age group in the present study. Significant changes were observed in LYM, GRAN, MPV, and PCT for smoker with all age group, while no significant changes were observed in MID and MCV for smoker with all age group. But, for non- smoker, it was noted MID, MCV, MCH, MCHC, and PDW significant with all age groups, while non- significant in LYM, GRAN, MPV, and PCT in all age groups. Figures from (1) to (9) show the relation between smokers and non-smokers for five age groups (21-30y, 31-40y, 41-50 y, 51-60y, and 61-70y) for eight parameters that studied in the present study. .

Table 1. Comparison between smokers and non-smokers groups for all the parameters.

Parameters	Groups	N	Mean ± SD	P value
LYM	Smoker	75	31.304±7.094	0.903
	Non-smoker	50	31.460±6.793	NS
MID	Smoker	75	5.872± 1.355	0.185
	Non-smoker	50	6.220± 1.533	NS
GRAN	Smoker	75	62.824± 7.744	0.718
	Non-smoker	50	62.320± 7.412	NS
MCV	Smoker	75	83.417± 4.346	0.036
	Non-smoker	50	81.480± 5.844	S
MCH	Smoker	75	28.277± 1.816	0.143
	Non-smoker	50	27.712± 2.469	NS
MCHC	Smoker	75	34.145±1.92187	0.713
	Non-smoker	50	34.032±1.92187	NS
MPV	Smoker	75	7.252±0.688	0.270
	Non-smoker	50	7.124±0.535	NS
PDW	Smoker	75	9.796±1.297	0.254
	Non-smoker	50	9.558±0.839	NS
PCT	Smoker	75	0.1936±0.158	0.023
	Non-smoker	50	0.1412±0.027	S

HS: High significant difference between groups (p value <0.01)
S: Significant difference between groups (p value <0.05)
NS: Non-significant difference between groups.

Table 2. Comparison between different ages for all parameters in both smokers and non-smokers groups

Parameters	Age (years)	Smokers			Non-smokers		
		N	Mean	LSD$_{0.05}$ P value	N	Mean	LSD$_{0.05}$ P value
LYM	(21-30)	15	32.160 b		10	35.900 a	
	(31-40)	15	33.380 a		10	30.100 b	
	(41-50)	15	33.400 a	0.001 HS	10	29.720 c	0.161 NS
	(51-60)	15	33.460 a		10	32.300 b	
	(61-70)	15	24.120 c		10	29.280 c	
MID	(21-30)	15	5.700 a		10	4.920 d	
	(31-40)	15	5.980 a		10	6.100 b	
	(41-50)	15	5.380 a	0.235 NS	10	6.800 b	0.001 HS
	(51-60)	15	6.500 a		10	7.540 a	
	(61-70)	15	5.800 a		10	5.740 c	
GRAN	(21-30)	15	62.140 b		10	59.180 a	
	(31-40)	15	60.640 c		10	63.800 a	
	(41-50)	15	61.220 c	0.001 HS	10	63.480 a	0.342 NS
	(51-60)	15	60.040 c		10	60.160 a	
	(61-70)	15	70.080 a		10	64.980 a	
MCV	(21-30)	15	82.460 a		10	82.360 b	
	(31-40)	15	83.387 a		10	81.240 c	
	(41-50)	15	82.800 a	0.073 NS	10	82.620 b	0.0001 HS
	(51-60)	15	86.220 a		10	75.020 d	
	(61-70)	15	82.220 a		10	86.160 a	
MCH	(21-30)	15	28.093 b		10	28.700 a	
	(31-40)	15	28.480 b		10	27.680 b	
	(41-50)	15	28.833 b	0.009 HS	10	28.420 a	0.001 HS
	(51-60)	15	29.060 a		10	25.020 c	
	(61-70)	15	26.920 c		10	28.740 a	
MCHC	(21-30)	15	35.120 a		10	34.820 a	
	(31-40)	15	34.187 b		10	34.120 a	
	(41-50)	15	34.860 b	0.006 HS	10	34.440 a	0.025 S
	(51-60)	15	33.740 b		10	33.360 b	
	(61-70)	15	32.820 c		10	33.420 b	
MPV	(21-30)	15	6.593 b		10	6.920 a	
	(31-40)	15	7.413 a		10	6.900 a	
	(41-50)	15	7.333 a	0.001 HS	10	7.500 a	0.060 NS
	(51-60)	15	7.440 a		10	7.240 a	
	(61-70)	15	7.480 a		10	7.060 a	
PDW	(21-30)	15	8.627 b		10	9.320 a	
	(31-40)	15	10.247 a		10	9.060 b	
	(41-50)	15	9.927 a	0.001 HS	10	9.870 a	0.038 S
	(51-60)	15	9.740 a		10	10.080 a	
	(61-70)	15	10.440 a		10	9.460 b	
PCT	(21-30)	15	0.182 b		10	0.151 a	
	(31-40)	15	0.169 b	0.005 HS	10	0.144 a	0.405 NS
	(41-50)	15	0.154 b		10	0.144 a	

	(51-60)	15	0.135 b		10	0.140 a	
	(61-70)	15	0.328 a		10	0.127 a	

HS: High significant difference between groups (p value <0.01)
S: Significant difference between groups (p value <0.05)
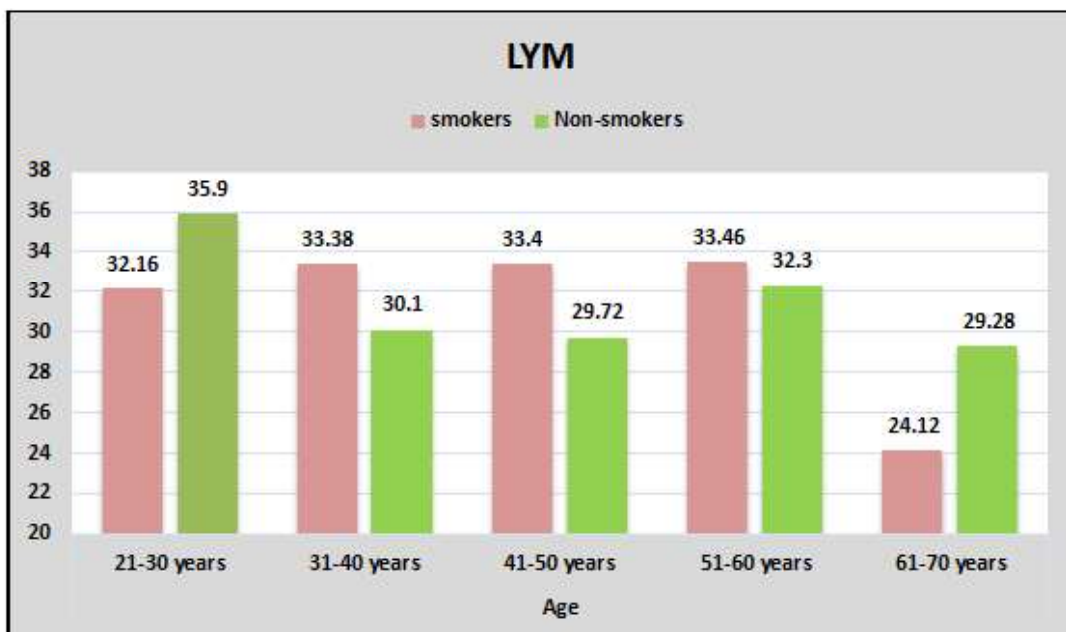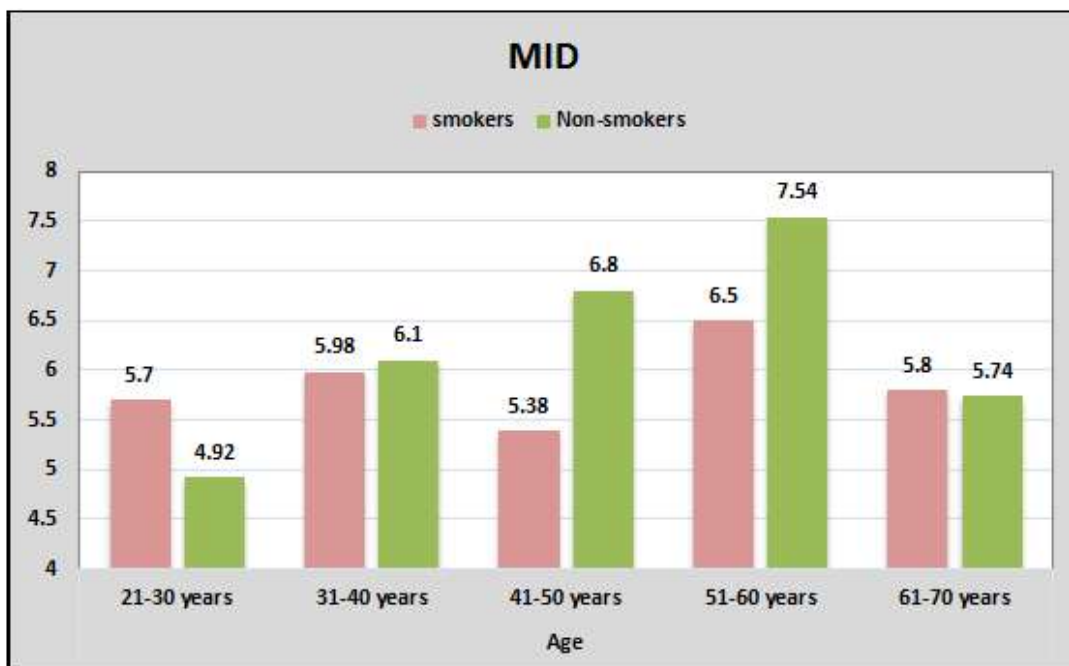.groups with different letters are significant difference.

Figure (1): Relation between smokers and non-smokers for five age groups (21-30y, 31-40y, 41-50y, 51-60y, and 61-70y) on LYM.

Figure (2): Relation between smokers and non-smokers for five age groups (21-30y, 31-40y, 41-50y, 51-60y, and 61-70y) on MID.
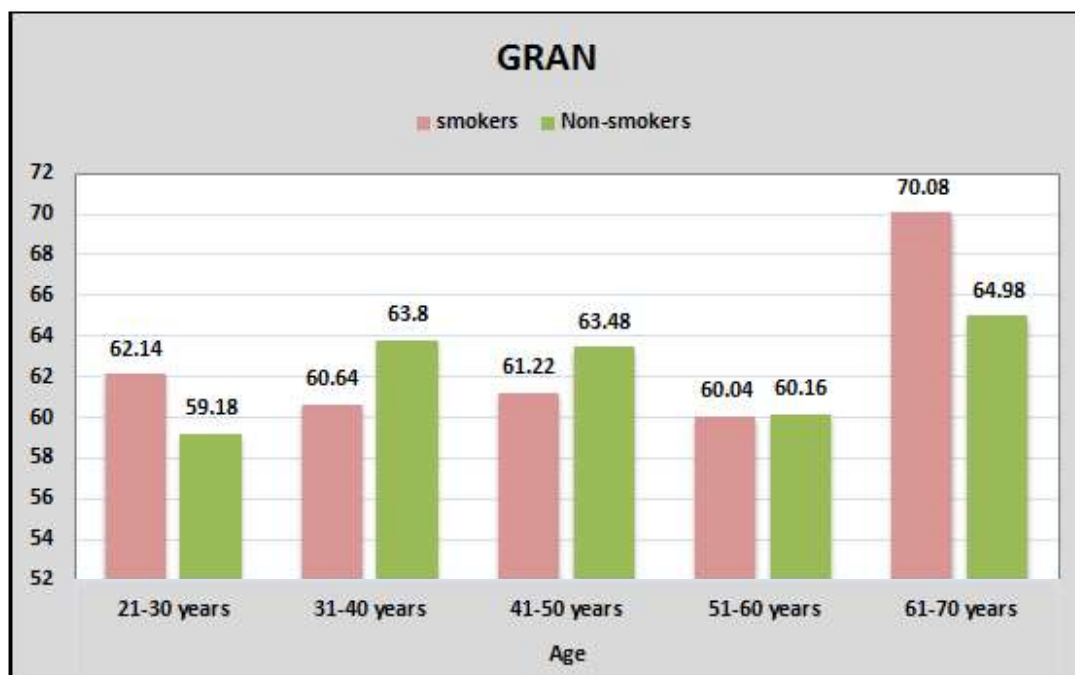
Figure (3): Relation between smokers and non-smokers for five age groups (21-30y, 31-40y, 41-50y, 51-60y, and 61-70y) on GRAN.
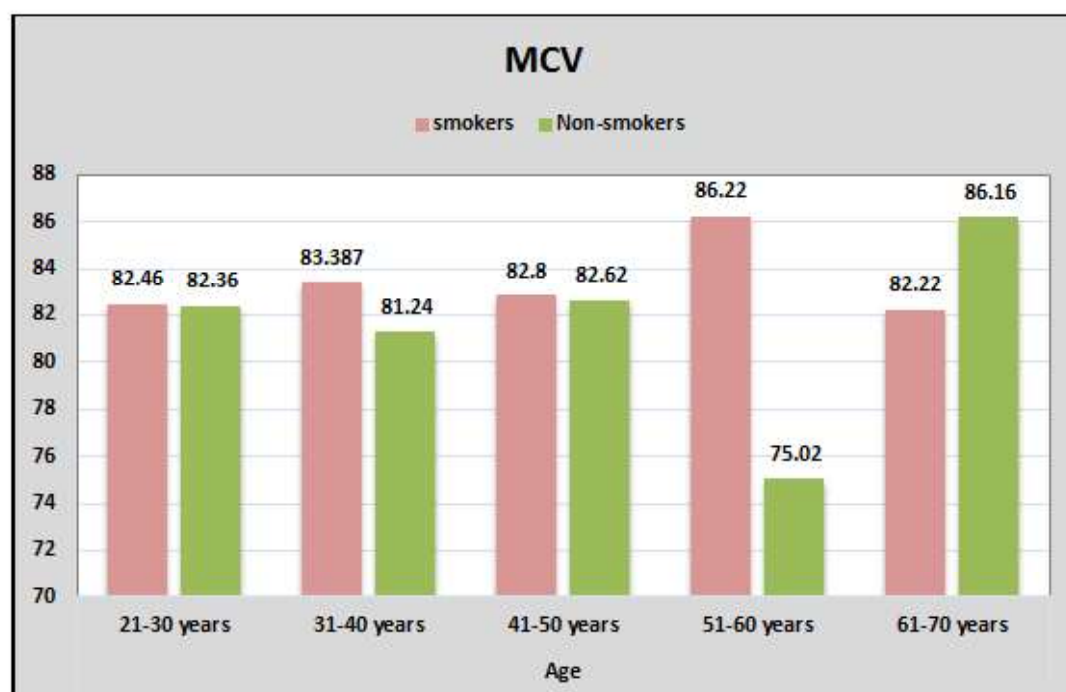

Figure (4): Relation between smokers and non-smokers for five age groups (21-30y, 31-40y, 41-50y, 51-60y, and 61-70y) on MCV.
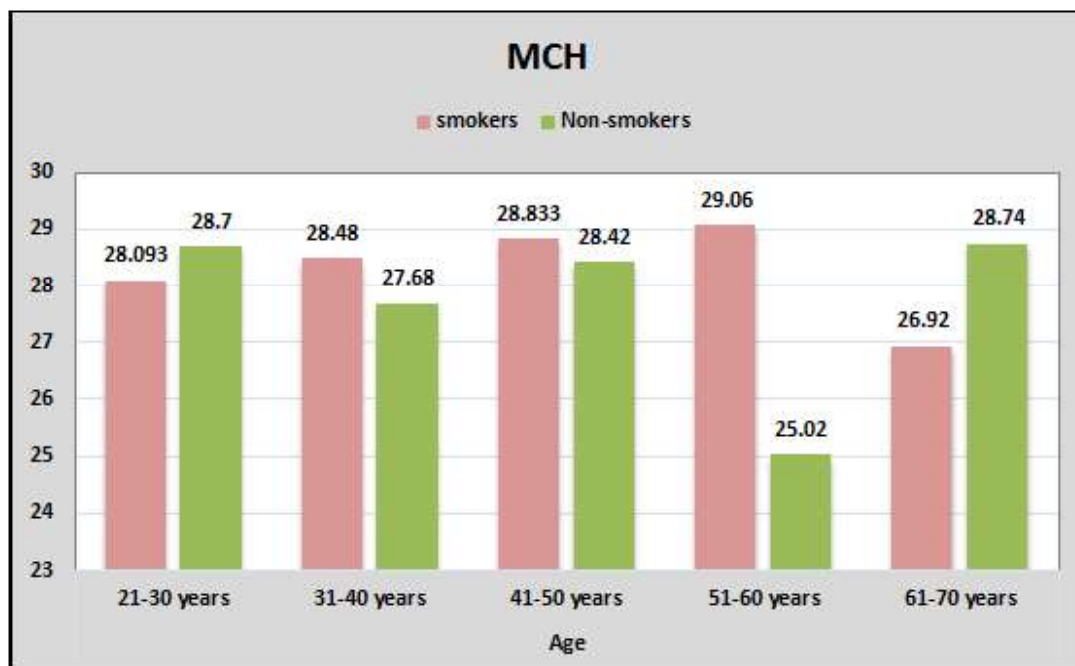
Figure (5): Relation between smokers and non-smokers for five age groups (21-30y, 31-40y, 41-50y, 51-60y, and 61-70y) on MCH.

Figure (6): Relation between smokers and non-smokers for five age groups (21-30y, 31-40y, 41-50y, 51-60y, and 61-70y) on MCHC.
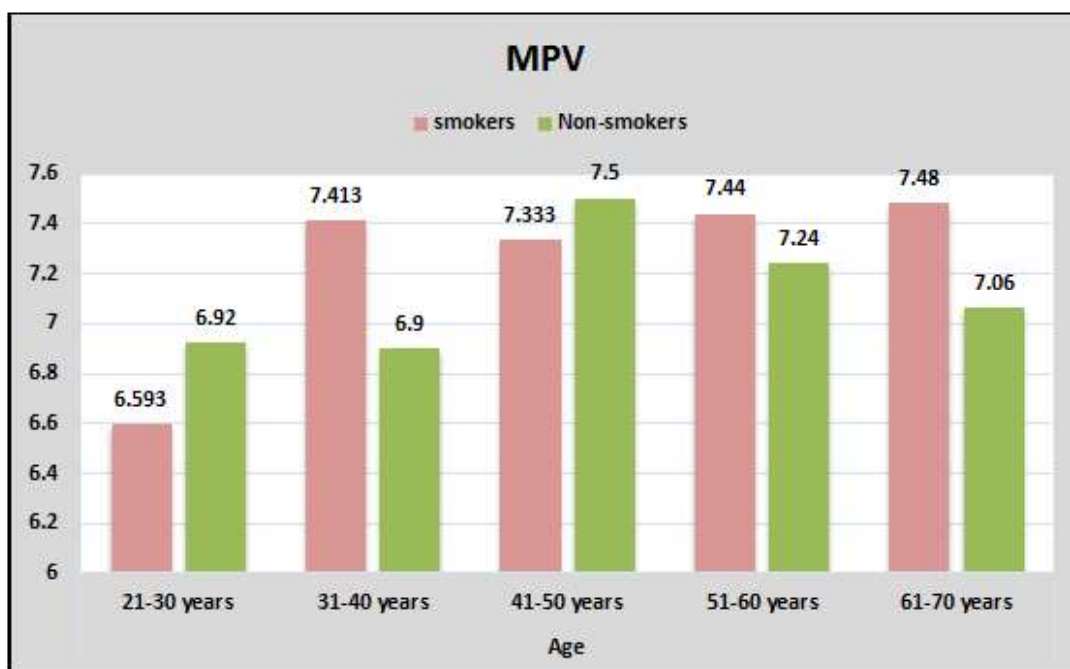
Figure (7): Relation between smokers and non-smokers for five age groups (21-30y, 31-40y, 41-50y, 51-60y, and 61-70y) on MPV.
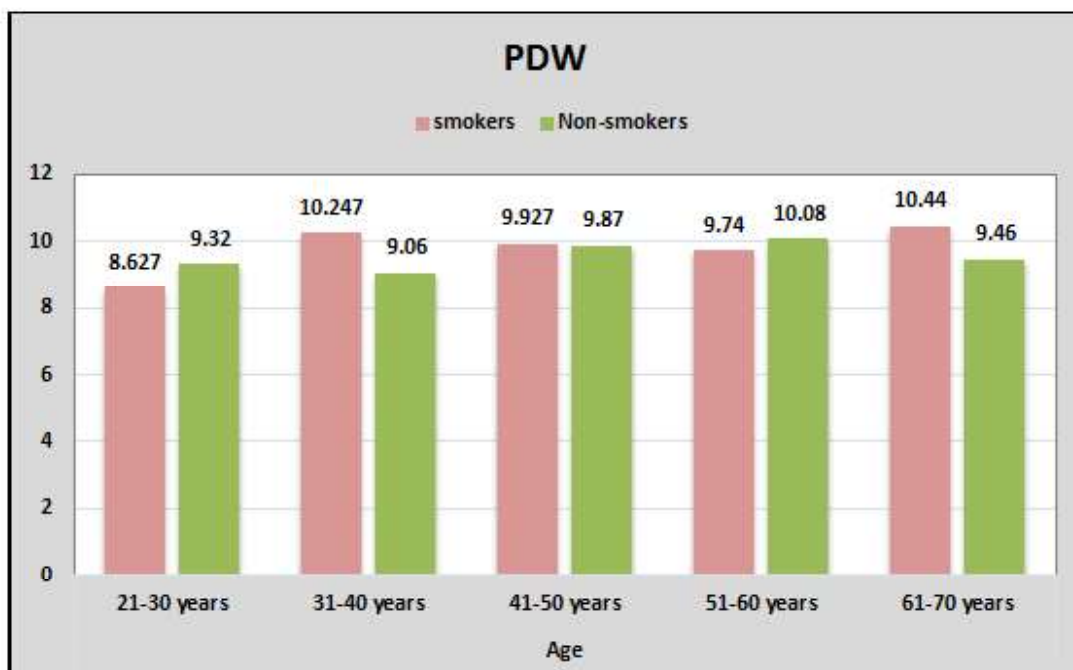

Figure (8): Relation between smokers and non-smokers for five age groups (21-30y, 31-40y, 41-50y, 51-60y, and 61-70y) on PDW.
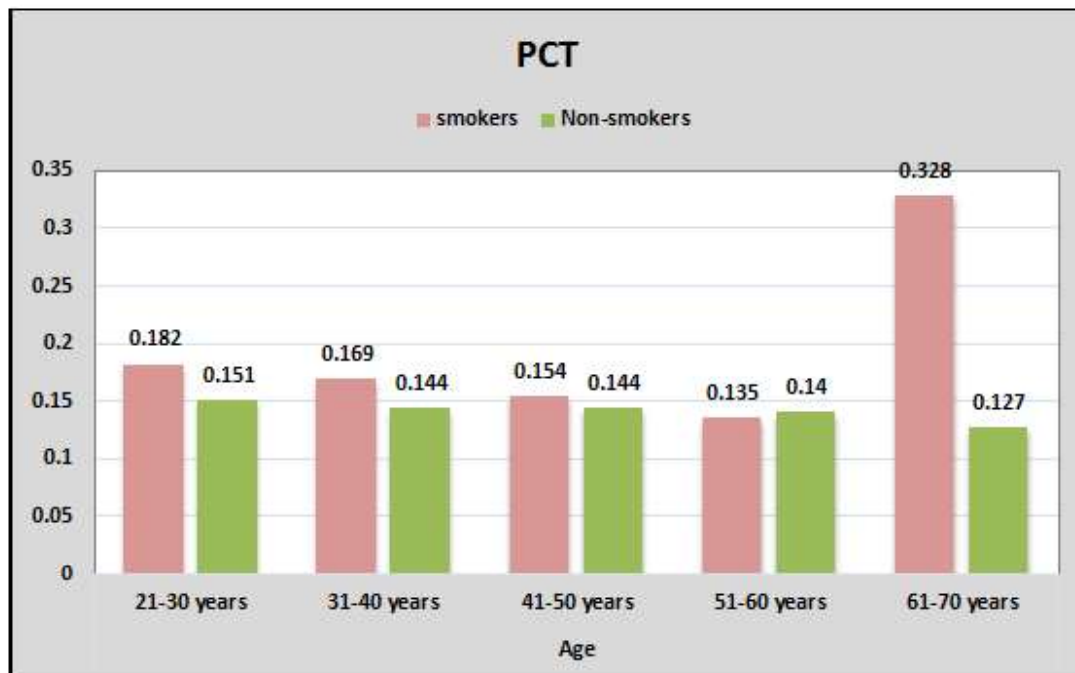
Figure (9): Relation between smokers and non-smokers for five age groups (21-30y, 31-40y, 41-50y, 51-60y, and 61-70y) on PCT.

Discussion:

The present investigation revealed notable disparities in hematological parameters between individuals who smoke and those who do not smoke. Specifically, the mean corpuscular volume (MCV) and plateletcrit (PCT) were found to be considerably elevated in smokers compared to non-smokers (p<0.05). Additionally, the analysis reveals that there is no discernible statistically significant difference in the levels of LYM, MID, GRAN, MCH, MCHC, MPV, and PDW. MCV, MCH, and MCHC are three primary hematological parameters used to assess the mean cellular volume and hemoglobin content of erythrocytes. An elevation in mean corpuscular volume (MCV) levels was seen among those who smoke compared to those who do not smoke (p<0.05). This finding aligns with prior research conducted in this area [17,18]. The mean corpuscular volume (MCV) serves as an indicator of red blood cell size. Deviations from the normal size can suggest the presence of anemia, with smaller or larger red cells indicating such a condition. Elevated MCV levels may be indicative of megaloblastic, hemolytic, pernicious, or macrocytic anemia, typically associated with deficiencies in iron and folic acid [19]. According to our data, smoking has a serious negative impact on haematological variables including hemoglobin and hematocrit, particularly the mcv parameter. The overall erythrocyte count was almost the same in smokers and non-smokers. There was a statistically significant difference in erythrocyte values between male smokers and female smokers, with the former group exhibiting greater values. In the present research, it was observed that the levels of hemoglobin were found to be substantially higher in those who smoke compared to those who do not smoke, irrespective of gender. However, no statistically significant variation was seen in the levels of hematocrit between these two groups of participants. In contrast, it was shown that male smokers had considerably higher hematocrit levels compared to female smokers. The observed

rise in hemoglobin (Hb) levels within the group of smokers is consistent with earlier research findings, which have shown considerably higher hematocrit and Hb levels among smokers. Furthermore, among smokers, there is a notable increase in red blood cell (RBC) count as the intensity of smoking escalates. In their investigation, Whitehead et al. (year) noticed a substantial rise in hemoglobin concentration and hematocrit among those who smoked more than 10 cigarettes per day [20]. The rise in hemoglobin concentration is thought to be facilitated by the presence of carbon monoxide, and several researchers have proposed that the elevation in hemoglobin levels seen in the blood of smokers may serve as a compensatory mechanism [21]. The binding of carbon monoxide to hemoglobin results in the formation of carboxyhemoglobin, which is an inert variant of hemoglobin that lacks the ability to transport oxygen. Carboxyhemoglobin furthermore induces a leftward shift in the dissociation curve of hemoglobin, leading to a diminished capacity of hemoglobin to transport oxygen to the tissue [22]. In order to counterbalance the reduced capacity for oxygen delivery, those who smoke have an elevated amount of hemoglobin compared to those who do not engage in smoking behavior. The elevated quantities of red blood cells and hematocrit levels seen in male individuals who smoke may be attributed to the occurrence of tissue hypoxia resulting from heightened production of carboxyhemoglobin. This, in turn, triggers an augmented release of erythropoietin, so promoting erythropoiesis [15]. The presence of carbon monoxide in tobacco smoke contributes to an elevation in capillary permeability, resulting in a reduction in plasma volume. This effect resembles the characteristics of polycythemia, a condition marked by a higher proportion of erythrocytes in the total blood volume. Consequently, elevated hematocrit values are observed as well. MCV, MCH, and MCHC are three primary hematological parameters used to assess the mean cellular volume and hemoglobin content of erythrocytes. The present research found that smokers exhibited considerably higher mean corpuscular volume (MCV) and mean corpuscular hemoglobin (MCH) values compared to non-smokers. However, there were no significant differences seen in mean corpuscular hemoglobin concentration (MCHC) and red cell distribution width (RDW) values between smokers and non-smokers. Other studies have also confirmed that smokers tend to have higher values of mean corpuscular volume (MCV) and mean corpuscular hemoglobin (MCH) compared to non-smokers. These values surpass the reference interval and are indicative of certain diseases such as kidney dysfunction, hyperuricemia, hypertension, and hypercholesterolemia. The findings of this research are in opposition to those of a previous study that failed to observe any statistically significant alterations in mean corpuscular volume (MCV) between smokers and non-smokers. A considerably low value was seen among those who smoke. In contrast to our findings, Salamzadeh conducted a study in which the mean corpuscular volume (MCV) was used to assess the size of red blood cells. The presence of red cells that are smaller or larger than the normal size in Salamzadeh's study indicated the presence of anemia. In our study, elevated levels of MCV were observed, suggesting that the subjects may be experiencing megaloblastic, haemolytic, pernicious, or macrocytic anemia. These types of anemia are typically caused by deficiencies in iron and folic acid. The mean corpuscular hemoglobin (MCH) refers to the average weight of hemoglobin contained inside an individual red blood cell. On the other hand, the mean corpuscular hemoglobin concentration (MCHC) represents the quantity of hemoglobin in a given volume of densely packed red blood cells. Our research found a statistically significant increase in the number of leukocytes in male smokers

compared to non-smokers. Moreover, the leukocyte count values exhibited a statistically significant increase among male individuals who smoke [23].

Conclusion

We analyzed pooled data of smoking and non-smoking health examiners obtained from 125 subjects across Najaf governorate who used Sysmex XE-2100 to determine blood parameters using (CBC) and also evaluated patterns of changes in CBC parameters according to age and smoking habit. it can be concluded that the cigarette smoking causes significant higher increases in MCV and PCT, while no significant in LYM, MID, GRAN, MCH, MCHC, MPV, and PDW.

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POLYHERBAL FORMULATIONS: NATURAL APPROACHES FOR MANAGING HYPERLIPIDEMIA AND HIGH BLOOD GLUCOSE

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ABSTRACT

Hyperlipidemia and high blood glucose are two significant risk factors associated with various metabolic disorders, including obesity, diabetes, and cardiovascular diseases. The present study aims to evaluate the potential of polyherbal extracts in reducing hyperlipidemia and high blood glucose levels. A polyherbal formulation consisting of selected medicinal plants known for their antihyperlipidemic and antidiabetic properties was prepared. The plants included in the formulation were chosen based on their traditional uses and scientific evidence supporting their therapeutic effects. The extraction of bioactive compounds from the plants was carried out using appropriate solvents. The polyherbal extracts were administered orally to experimental animals with induced hyperlipidemia and high blood glucose levels. A control group received a placebo, while another group was treated with standard medications for comparison. The animals were monitored for changes in lipid profile, blood glucose levels, and other relevant biochemical parameters. The results demonstrated that the polyherbal extracts significantly reduced hyperlipidemia and high blood glucose levels in the experimental animals. The lipid profile, including total cholesterol, triglycerides, and low-density lipoprotein (LDL) cholesterol, showed marked improvements. Moreover, the extracts effectively lowered fasting blood glucose levels, indicating their antidiabetic potential. Further analysis revealed that the polyherbal extracts exerted their therapeutic effects through multiple mechanisms, including antioxidant activity, inhibition of key enzymes involved in lipid metabolism, and enhancement of insulin sensitivity.These findings highlight the promising potential of polyherbal extracts in the management of hyperlipidemia and high blood glucose. The utilization of multiple plants in a synergistic combination provides a comprehensive approach to targeting multiple pathways involved in these metabolic disorders. However, further research is needed to identify and characterize the specific bioactive compounds responsible for the observed effects and to elucidate the underlying mechanisms of action. In conclusion, the utilization of polyherbal extracts demonstrates a viable strategy for reducing hyperlipidemia and high blood glucose levels. These natural interventions offer an alternative or complementary approach to conventional medications and hold promise for the prevention and management of metabolic disorders. Further investigation and clinical trials are warranted to validate the safety, efficacy, and long-term effects of polyherbal extracts in human subjects.

Keywords: Hyperlipidemia, High blood glucose, Polyherbal extracts, Medicinal plants,Antihyperlipidemic,Antidiabetic,Lipid profile

POSTERIOR TEETH RESTORATION

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ABSTRACT

The endocrowns are a prosthetic element indicated in the restoration of depulped teeth. They

consist of a one-piece crown with an internal part colonizing the pulp chamber, without root

anchorage.

Indeed, with the progress of adhesion and the contribution of aesthetic materials,

recent developments as well as the concepts of minimal invasiveness, the use of

prosthetic restorations that save more tooth tissue are integrated in our daily practice.

The main objective of this work is to highlight this philosophy,

developing the indications and operating protocol for endocrowns, as well as

as the materials and the prognosis of this type of restoration.

PREDICTION OF MECONIUM-STAINED AMNIOTIC FLUID VIA PULMONARY ARTERY DOPPLER EXAMINATION

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ABSTRACT

Objective: We aimed with this study to evaluate the role of pulmonary artery acceleration time to ejection time ratio (PATET) in the prediction of meconium-stained amniotic fluid in postterm pregnancy.

Materials and methods: In this prospective cohort study, 45 pregnant women with no congenital abnormalities and pregnancy complications who delivered at 41 weeks of gestational age were included. All the patients underwent ultrasound examination to obtain fetal pulmonary artery Doppler. Participants were grouped according to diagnosis of meconium-stained amniotic fluid.

Results: Regarding the Doppler findings; only the PATET ratio was significantly different between the groups (0.214 ± 0.052 versus 0.183 ± 0.037 $p<0.005$). There was no significantly different between the groups in terms of acceleration time (AT) and ejection time (ET) ($p>0.005$).

Conclusions: In consideration of these results fetal PATET ratio is a promising noninvasive tool to predict meconium-stained amniotic fluid in case of postterm pregnancy.

PRENATALLY DIAGNOSED SACROCOCCYGEAL TERATOMA

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Abstract

Sacrococcygeal teratoma is the most common germ cell tumor in infancy and early childhood. sacrococcygeal teratomas are generally benign tumors. However, malignant elements can be present, and their frequency increases with the postnatal age of the patient. The major goal is to identify fetuses at increased risk of fetal demise because of hydrops. In most cases, surgical resection is undertaken postnatally. In utero interventions are generally only temporizing measures, allowing the fetus to recover in utero and continue to grow and mature; in very selected cases at specialized centers, resection may be undertaken in utero.Sonography usually demonstrates a mass near the distal spine. The majority of prenatally diagnosed sacrococcygeal teratomas are either solid or mixed cystic and solid; calcifications are often present. Associated structural abnormalities may include bladder outlet obstruction and hydronephrosis, rectal stenosis or atresia, and cardiomegaly secondary to vascular shunting and high-output cardiac failurePrenatal diagnosis and close monitoring have improved outcomes for fetal sacrococcygeal teratomas , but overall perinatal mortality remains high. Potential perinatal complications include preterm labor, spontaneous tumor hemorrhage or rupture, and maternal Mirror syndrome. For tumors deemed resectable at diagnosis, maximal safe resection is recommended. Surgery for complete excision of an sacrococcygeal teratoma often is quite extensive. It must include removal of the coccyx to be considered complete. Other considerations include early ligation of the sacral vessels and sterile circumferential preparation of the body due to the potential need for intraoperative change in approach. If a complete resection cannot be achieved in the first surgery, a second procedure may be required to complete the resection, particularly for tumors with malignant elements.

Key words: sacrococcygeal teratoma, prenatal ultrasonography, pregnancy

1. Introduction

 Sacrococcygeal teratoma (SCT)is the most common germ cell tumor (GCT) of childhood. In the pediatric population, SCTs account for 40 percent of all GCTs and up to 78 percent of all extragonadal GCTs. Rarely, SCTs may present in adulthood (1). SCT is the most frequently recognized fetal neoplasm, with an estimated incidence of approximately 1 in 27,000 . SCTs are more common in females than males, with a 3 to 4:1 ratio. SCTs with malignant elements generally are not seen in infants. The incidence of malignant elements within SCTs increases with postnatal age (2,3). SCT generally presents either in utero, as a mass extending off the caudal end of the fetus, or as a tumor of infancy that may be asymptomatic or present with signs of obstruction of the rectum or bladder .A small number of children present with weakness, pain, or paralysis (4). The Altman Classification describes the extent to which a tumor is external and/or internal. Type I tumors are primarily external, while type IV lesions are completely internal. Type I and II tumors are the most obvious on prenatal ultrasound and clinical examination (5). Type IV tumors typically are found later in infancy and early childhood, compared with tumors with an external component (types I, II, and III). Type IV SCTs can present with

obstipation/constipation, abdominal pain, or a palpable mass. Malignant elements are more frequent in type IV SCTs, with an incidence of 38 percent in one series (6).

2. Materials and Methods

A 26-year-old patient with two gravida parity and three was referred to our clinic with the diagnosis of a mass in the sacral region. In the evaluation, there was no disease in her history. In the ultrasonographic evaluation, measurements compatible with 24 weeks of pregnancy were observed. A solid-cystic mass of 30x25x13mm was observed in the sacrococcygeal region of the fetus. Placenta was located posteriorly and amniotic fluid was normal. In the MRI of the case, a 35x29x23mm solid-cystic mass compatible with a sacrococcygeal teratoma was detected in the sacrococcygeal region. The karyotype analysis of the case was found to be normal. As a result, the case was evaluated by the multidisciplinary perinatology council and it was decided to follow up the pregnancy.

3. Findings and Discussion

Prenatal diagnosis typically occurs during the second trimester during routine sonography; first-trimester diagnosis has also been reported. Most SCTs diagnosed in utero are Altman type I or II (7). Sonography usually demonstrates a mass near the distal spine (Figure 1). The majority of prenatally diagnosed SCTs are either solid or mixed cystic and solid; calcifications are often present. Fetal magnetic resonance imaging (MRI) is recommended where available. Compared with sonography, MRI more accurately characterizes the intrapelvic and abdominal extent of the tumor and compression of adjacent organs (Figure 2). Tumor size should be measured at each ultrasound examination, and solid portions of the tumor should be interrogated with Doppler ultrasound to assess vascular flow. Rapidly enlarging tumors and tumors that are solid, in particular, create a vascular steal phenomenon, which places the fetus at increased risk of developing hydropic changes. Large lesions (>10 cm), especially vascular ones, are associated with a high perinatal mortality rate. Relatively cystic lesions with absent or mild vascularity tend to display slow growth and have a favorable outcome, even when large (>10 cm). Amniotic fluid volume and placental thickness should also be evaluated, as polyhydramnios and placental thickening are markers for hydrops, and oligohydramnios can result from bladder obstruction due to the SCT (8,9). Görüntüleme özellikleri, özellikle tümör hacmi, prognostik bilgi sağlayabilir (10). Örneğin, 24. gebelik haftasından önce ultrasonda tümör hacmi-fetal ağırlık oranı (TFR) >0.12, kötü bir prognostik işarettir. Prenatal diagnosis and close monitoring have improved outcomes for fetal SCT, but overall perinatal mortality remains high. Estimates of perinatal mortality for prenatally diagnosed SCT range from 25 to 50 percent when cases of pregnancy termination, intrauterine death, and neonatal death are included (11). If fetal MRI was not performed antenatally, computed tomography (CT) or MRI of the primary site is commonly done after birth to assess the extent of internal tumor. Staging should include a CT of the chest and bone scan. For tumors deemed resectable at diagnosis, maximal safe resection is recommended. Surgery for complete excision of an SCT often is quite extensive. It must include removal of the coccyx to be considered complete. Other considerations include early ligation of the sacral vessels and sterile circumferential preparation of the body due to the potential need for intraoperative change in approach . If a complete resection cannot be achieved in the first surgery, a second procedure may be required to complete the resection, particularly for tumors with malignant elements

(12). Children require regular follow-up after surgical resection or completion of chemotherapy. Surveillance guidance is based on expert opinion and clinical experience and typically involves clinical examination at three- to six-month intervals, with monthly tumor marker measurement alpha-fetoprotein (AFP) and lactate dehydrogenase (LDH) for the first year and then every two to six months. Primary site imaging (usually MRI) and chest radiograph are obtained at 3 and 12 months after resection and then as needed for evaluation of new symptoms. Follow-up should continue for at least three to five years, as late recurrences have been reported (13).

Figure 1.Sacrococcygeal teratoma ultrasonography

Figure 2. Sacrococcygeal teratoma MRI

4. Conclusion and Recommendations

A solid-cystic mass extending in the coccyx region with an intact vertebra should strongly suggest a sacrococcygeal teratoma.Fetuses with sacrococcygeal teratoma are risk of developing hydrops due to high-output heart failure .Therefore,close fetal surveillance should be provided.Cesarean delivery is recommended for fetuses with sacrococcygeal teratoma.

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DEVELOPMENT A DNA ISOLATION PROTOCOL FOR BREAST CANCER SAMPLE OF FORMALIN-FIXED PARAFFIN EMBEDDED TISSUES

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Abstract

Techniques have been developed for the extraction and use of nucleic acids from formalin-fixed and paraffin-embedded (FFPE) tissues which are preserved over long time periods in libraries. However, DNA extracted from FFPE tissues is generally damaged, and long-term storage may affect DNA quality. Therefore, it is important to elucidate the effect of long-term storage on FFPE tissues and development the techniques used to extract high quality and enough quantity DNA from them. In this project, we aimed to create a Cetyltrimethylammonium bromide (CTAB) – based DNA isolation protocol from FFPE blocks of breast cancer tissues. A total of 30 FFPE blocks of breast cancer tissues from different types of breast cancer had been studied as three replicates. The blocks had been surgically resected and fixed at Harran University Hospital prior to examination and subsequent storage at 4-degree temperature for several years. The average spectrophotometer measurements of DNA quality were 1.9 (A260/A280) and 1.4 (A260/A230). The average DNA amount was 78.2 nano gram per microliter. The results of DNA extraction are suitable for all DNA based methods such as next generation sequencing technologies. The developed DNA extraction protocol has six easy steps with commonly available chemicals and solutions. It is possible to extract DNA from 30 samples less than three hours and 1 US dollar per sample by developed protocol from FFPE tissue blocks of breast cancer. The developed protocol has many advantages to open the treasure box of FFPE blocks in pathology laboratories and libraries.

Key words: Developed DNA protocol, Breast Cancer FFPE blocks, CTAB, Sequencing

EFFECT OF SIX WEEKS SURYANAMASKAR TRAINING ON SELECTED PHYSIOLOGICAL AND MOTOR FITNESS VARIABLES OF SCHOOL GOING STUDENTS OF DELHI

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ABSTRACT

The purpose of this study was to see the effect of six weeks Suryanamaskar Training on selected Physiological and Motor Fitness Variables of School going students of Navyug School Mandir Marg, New Delhi. In this study two hundred students were selected randomly as subjects. One hundred subjects (boys and girls) age ranged from under 13 to 16 years were kept for control group and another one hundred subjects (boys and girls) age ranged from under 13 to 16 years were kept for experimental group. In this study - Explosive Strength and Agility were chosen as selected Motor Fitness Variables and Blood Pressure and Resting Heart Rate were selected as Physiological Variables. Experimental group was administered Suryanamaskar Training and control group has not been given any training. Pre-test data were collected from both the groups before giving six weeks Suryanamaskar Training and also post-test data were collected from both the groups at the end of six weeks Suryanamaskar Training. The data was collected for each variable through administering their respective tests. To ensure the reliability of collected data, the AAHPER youth fitness test was used to measure the selected Motor Fitness Components of students and Sphygmomanometer was used to measure the selected Physiological Variables of students. Descriptive statistics i.e. Mean, Standard Deviation and t-test were used as statistical technique to analysis the data in the present study. After statistical analysis, the findings showed significant effects of six weeks Suryanamaskar Training on selected Physiological Variables and Motor Fitness Variables of school going students of Delhi.

Key words :- Explosive strength, Agility, Resting Heart Rate, AAHPER Youth Fitness Test, Sphygmomanometer.

MESLEKLERARASI ETKİLEŞİMDE SİMÜLASYON UYGULAMASININ KONUŞMA ÇÖZÜMLEMESİ YÖNTEMİYLE İNCELENMESİ: ECZACILIK VE ECZANE HİZMETLERİ PROGRAMI ÖRNEĞİ
EXAMINATION OF SIMULATION APPLICATION IN INTERPROFESSIONAL INTERACTION WITH CONVERSATION ANALYSIS METHOD: THE CASE OF PHARMACY AND PHARMACY SERVICES PROGRAMS

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ÖZET
Dünya Sağlık Örgütü, *"Preparing the Pharmacist of the Future: curricular development"* raporunda, eczacıların iyi birer iletişimci olmaları gerektiğini belirtmektedir. Bu nedenle, eczacılık eğitimi sırasında, iletişim becerilerinin geliştirilmesine yönelik ders içeriklerinin bulunması gerekmektedir. Eczacılık eğitiminde simülasyon uygulamalarının olumlu etkisi, son dönemde yapılan çalışmalarda dile getirilen bir konudur. Sağlık hizmetlerinde, eczacı ve eczane çalışanları arasındaki etkili iletişim, hastaların güvenliği, hizmet kalitesi ve hastaların memnuniyeti açısından büyük önem taşımaktadır. Eczacılar ve eczane çalışanları, hastaların ilaç ihtiyaçlarını karşılamada kritik bir rol oynarlar. Bu nedenle, eczacılar ile eczane çalışanları arasında sağlam bir iletişim ağı kurulması, doğru ilaçlar ve bilgilerin sağlanmasını, ilaç etkileşimlerinin ve yan etkilerinin önlenmesini ve hastaların ihtiyaçlarının en iyi şekilde karşılanmasını sağlamaktadır. Eczacılar ve eczane çalışanları, hastalara ilaçlar hakkında doğru ve güncel bilgiler sağlama sorumluluğuna sahiptir. İyi bir iletişim, eczacıların hastaların sağlık durumu, alerjileri, ilaç geçmişi ve diğer önemli bilgileri toplamasına ve bu bilgilere dayanarak doğru ilaçları seçmelerine yardımcı olmaktadır. Toplamda 22 öğrencinin gönüllü olarak katıldığı ve Atatürk Üniversitesi Bilimsel Araştırma Projeleri Koordinasyon Birimi tarafından TAB-2022-10105 numaralı proje olarak desteklenen bu çalışmada, öğrenci geri bildirimlerinde, simülasyon uygulamasının, eczacılık eğitiminde mutlaka yer alması gerektiğini belirttikleri görülmüştür. Konuşma çözümlemesi yöntemi ile elde edilen bulgularda; Eczane hizmetleri programı öğrencilerinin eczacılık öğrencilerinin gözetiminde hastalara hizmet sundukları; eczacılık öğrencilerinin de eczane hizmetleri programı öğrencilerden yardım aldıkları gözlenmiştir. Eczacılık öğrencilerinin eczane hizmetleri programı öğrencilerine göre; uzmanlıklarını daha fazla gösterdiği, çekinme belirteçlerini daha az kullandığı, uzun süren sessizliklerin daha az olduğu ve ilaç hakkında daha fazla bilgi verdikleri saptanmıştır. Öğrencilere olumlu katkıları olan simülasyon uygulamasının, eczacılık eğitim programında yer almasının elzem olduğu ve eczacı-eczane çalışanı etkileşiminin daha ayrıntılı incelenmesi sayesinde, iletişimin geliştirilmesinin mümkün olacağı düşünülmektedir.
Anahtar kelimeler: Eczacı-eczane çalışanı iletişimi, Eczacılık eğitiminde simülasyon uygulaması, Konuşma çözümlemesi

ABSTRACT

The World Health Organisation, in its report "Preparing the Pharmacist of the Future: curricular development", states that pharmacists should be good communicators. Therefore, during pharmacy education, there should be course contents for the development of communication skills. The positive effect of simulation applications in pharmacy education is an issue that has been expressed in recent studies. In health services, effective communication between pharmacists and pharmacy staff is of great importance in terms of patient safety, service quality and patient satisfaction. Pharmacists and pharmacy staff play a critical role in meeting the medication needs of patients. Therefore, establishing a strong communication network between pharmacists and pharmacy staff ensures that the right medicines and information are provided, drug interactions and side effects are prevented and patients' needs are best met. Pharmacists and pharmacy staff have a responsibility to provide patients with accurate and up-to-date information about medicines. Good communication helps pharmacists to collect information about patients' health status, allergies, drug history and other important information and to choose the right medicines based on this information. Twenty-two students voluntarily participated in this study, which was supported by the Atatürk University Scientific Research Projects Coordination Unit under project number TAB-2022-10105, it was seen that the student feedbacks indicated that the simulation application should definitely be included in pharmacy education. In the findings obtained by speech analysis method; it was observed that pharmacy services programme students provided services to patients under the supervision of pharmacy students and pharmacy students received help from pharmacy services programme students. It was found that pharmacy students showed their expertise more, used hesitation markers less, had less prolonged silences and gave more information about the drug than pharmacy services programme students. It is thought that it is essential to include the simulation application, which has positive contributions to the students, in the pharmacy education programme and that it will be possible to improve communication by examining the pharmacist-pharmacy employee interaction in more detail.
Key words: Pharmacist-pharmacy staff communication, Simulation application in pharmacy education, Conversation analysis

EFFECTS OF CURCUMIN-NANOPARTICLE ON SPERM PARAMETERS IN AN EXPERIMENTAL DIABETES MODEL

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ABSTRACT

It is known that diabetes, which has negative effects on many systems and organs of the body, also causes serious damage to reproductive health. It has been reported that a wide variety of strategies have been used for its treatment. One of the most promising of these strategies is the use of nanoparticles. For this purpose, in this study, the effects of curcumin and curcumin nanoparticles on sperm parameters were evaluated after diabetes was experimentally induced. In the study, 8 groups were formed using 56 wistar albino rats (Control group, Diabetes group, Curcumin group, Mg - curcumin nanoparticle group, Diabetes + curcumin group, Diabetes + Mg - curcumin nanoparticle group, Encapsulated Mg - curcumin nanoparticle group, Diabetes + encapsulated Mg - curcumin nanoparticle group). Sperm count and motility were found to be significantly lower in the diabetes group compared to the control group and other groups. It was determined that there was no significant difference between the curcumin administered group and the control group in terms of sperm count and motility. It was determined that curcumin and curcumin nanoparticles applied to the diabetes group significantly increased sperm count and motility compared to the diabetes group. It was determined that curcumin nanoparticles applied especially to the diabetes group had better healing effects than curcumin on sperm count and sperm motility. Based on these results, it can be thought that especially curcumin nanoparticles should be in the first place among potential therapeutics that can protect sperm count and motility in diabetes.

Keywords: Curcumin, curcumin nanoparticle, diabetes, sperm.

OCCURRENCE OF MULTI-DRUG RESISTANT *ESCHERICHIA COLI* IN PATIENTS WITH ASSOCIATED WITH HOSPITAL ACQUIRED INFECTIONS

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ABSTRACT

Hospital acquired infections (HAIs) are a new, worldwide issue that raises costs, length of stay, and in-hospital mortality. *Escherichia coli* is one of the most prevalent bacteria in the world and is a recognized cause of bloodstream and urinary tract infections. Multiple drug resistance (MDR) is antimicrobial resistance shown by microorganisms. The multiple drug resistance which is mostly exposed to public health are multi drug resistance bacteria which resist multiple antibiotics. Large amount of antibiotics is used in treatments of different diseases for humans as well as animals and fishes, which resulted in bacteria being resistant to multiple drugs. The bacteria leading to nosocomial infections are mostly multi-drug resistance. The drug resistance mechanism is categorized including drug alteration or inactivation, changes in drug binding sites, in cell permeability. The identified *E. coli* resistance profiles are concerning since there are few licensed antimicrobial medications available to provide adequate anti-infective treatment in patients with the urinary tract infection, and there are few or no additional effective agents available as alternatives. In order to prevent nosocomial spread to an unavoidable baseline-limit, more multidisciplinary efforts to build based on evidence hygiene improvements and patient-based antibiotic management within the complex clinical setting in horse clinics are essential.

Keywords: Escherichia coli, Multiple drug resistance bacteria, Hospital acquired infection

SHRINKAGE IN THE MODIFIED SIHLER'S STAINING TECHNIQUE

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ABSTRACT

Background: The modified Sihler technique (MST) was used to investigate the intramuscular nerve course, and reported to caused the muscles to shrink, but no values were given.

Purpose: MST makes the muscle fibers transparent and stains the intramuscular nerve fibers, and the course of these fibers becomes visible. This allows for the macroscopical observation of innervation zones with dense nerve endings. In neuromuscular junction-targeted treatments like botulinum toxin, it is important to know the intramuscular nerve course. The aim of the study is to determine the shrinkage rate of the muscles as a result of MST by the researchers who will apply the technique and create the study plan accordingly.

Methodology: MST was applied to the sternocleidomastoid muscle (SCM), which was taken bilaterally from 7 cadavers, and at the end of each stage of the technique, muscle length was measured from fixed lower and upper points (Approval Number: 19-12T/40).

Results: The 14 SCMs shrank by an average of 33% (min: 25%-max: 44%) from their initial length at the end of the technique. The shrinkage rate differs according to the thickness of the muscles, and that as muscle thickness increases, the shrinkage rate increases likewise. Researchers who will define the innervation zones according to landmarks or adjacent structures, as in our study, should be aware of these changes in muscle length.

Conclusion: Fixed points should be selected for the MST applied muscles, shrinkage rates should be determined and the relationship with the selected landmarks and adjacent structures should be formed in accordance with those findings. We think that the values we found will be supported by clinical studies and contribute to the literature.

Key words: modified Sihler's staining technique, sternocleidomastoid muscle, shrinkage rate, botulinum toxin

SOCIAL APPEARANCE ANXIETY AND PSYCHOLOGICAL DISTRESS AMONG INSTAGRAM USERS

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ABSTRACT

Anxiety and tension that people experience when they are judged by others based on their physical appearance is known as social appearance anxiety. This study aims to investigate the relationship between social appearance anxiety and psychological distress among Instagram users. Further, it also measures the difference among social appearance anxiety and psychological distress in relation to demographic variables. Using purposive sampling technique, data was collected online from 187 Instagram users (age range 15-30 years). Social Appearance Anxiety Scale (Hartet al., 2008) and Kessler Distress Scale (Kessler, 2001) were combined along with demographics for data collection. Data was analysed using SPSS. Results revealed a significant correlation between social appearance anxiety and psychological distress (r^2 =.57 p≤.001). Furthermore, regressions analysis showed a significant predictive relationship among social appearance anxiety and psychological distress (R^2=.49, p <.001). Also the results revealed the substantial role of demographic features like age, gender and socioeconomic status in social appearance anxiety and psychological distress. It is concluded that social appearance anxiety has a worsening effect and leads to psychological distress among ers. Findings would be helpful for psychological counselling experts to design effective intervention and prevention programs by considering social appearance anxiety as a risk factor

Key words: Social Appearance Anxiety, Psychological Distress, Instagram Users

STUDY OF DENTAL PROBLEMS IN DIABETIC PATIENTS AND THEIR THERAPEUTIC MANAGEMENT

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ABSTRACT

Diabetes mellitus is a chronic metabolic disorder that affects millions of individuals worldwide. Besides its well-known systemic complications, diabetes is also associated with various oral health problems. This study aims to investigate the dental problems prevalent in diabetic patients and explore therapeutic management strategies to address these issues. A comprehensive literature review was conducted to identify the dental problems commonly encountered in individuals with diabetes. The findings revealed that diabetic patients are more prone to oral health issues such as periodontal disease, dental caries, oral infections, dry mouth, and delayed wound healing. These conditions can significantly impact the quality of life and glycemic control of diabetic patients. Therapeutic management strategies were then explored to mitigate dental problems in diabetic patients. Oral hygiene practices, including regular brushing, flossing, and antimicrobial mouthwashes, play a crucial role in preventing and controlling oral diseases. Moreover, close collaboration between dentists and healthcare professionals is essential to monitor glycemic control, adjust medication regimens, and provide personalized oral healthcare plans. Additionally, the incorporation of adjunctive treatments such as professional dental cleanings, periodontal therapies, and fluoride applications has shown promising results in managing dental issues in diabetic patients. Moreover, patient education on the importance of oral health and regular dental visits is crucial to maintain optimal oral hygiene. In conclusion, this study highlights the significant impact of diabetes on oral health and emphasizes the importance of therapeutic management strategies in addressing dental problems in diabetic patients. A multidisciplinary approach involving dentists, physicians, and patients is essential for effective glycemic control and oral health maintenance. By implementing comprehensive oral hygiene practices, regular dental visits, and personalized treatment plans, healthcare providers can improve oral health outcomes and the overall well-being of diabetic patients. Further research and awareness in this field are crucial to enhance the understanding and management of dental problems in individuals with diabetes.

Keywords: Diabetes mellitus, Oral Health, Dental problems, Periodontal disease, Dental caries, Oral infections, Dry mouth, Wound healing, Therapeutic management, Oral hygiene, Glycemic control.

NEXT-GENERATION HEALTHCARE: UNLEASHING THE POTENTIAL OF 3D PRINTABLE DRUG DELIVERY SYSTEMS

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ABSTRACT

A revolutionary shift in healthcare has been sparked by the development of 3D printing, propelling us into an era replete with boundless opportunities for personalized DDS (Drug Delivery Systems). Precise control of the kinetics of drug release can be achieved through 3D printing, improving treatment efficacy and patient compliance. Additionally, 3D printing facilitates the co-administration of multiple drugs, simplifying treatment regimens. The technology offers rapid prototyping and manufacturing capabilities, reducing development timelines and costs. The seamless integration of advanced algorithms and artificial neural networks (ANN) augments the precision and efficacy of 3D printing, propelling us toward the forefront of personalized medicine. This comprehensive review delves into the regulatory frontiers governing 3D printable drug delivery systems, with a steadfast emphasis on adhering to rigorous safety protocols to ensure the well-being of patients. By leveraging the latest advancements in 3D printing technologies, powered by artificial intelligence. This paradigm promises superior therapeutic outcomes and optimized medication experiences and sets the stage for an immersive future within the metaverse, wherein healthcare seamlessly converges with virtual environments to unlock unparalleled possibilities for personalized treatments.

Keywords: 3D printing; Metaverse; personalized medicine; algorithms; Artificial neural networks (ANN); Selective laser sintering (SLS)

ISOLATION, PURIFICATION, AND CHARACTERIZATION OF THERAPEUTIC ENZYMES FROM BACTERIAL SOURCES

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ABSTRACT

Microbes produce therapeutic enzymes, which are medically relevant enzymes. Unlike nonenzymatic drugs, therapeutic enzymes have the added advantage of being able to bind selectively to their target molecules. Some of the most common therapeutic enzymes are: Bacterial enzymes, Blood clotting enzymes, Cancer enzymes, Mucolytic enzymes, Fibrinolytics enzymes, Metabolic storage disorders. Streptokinase enzyme is a novel bacterial enzyme isolated from streptococcus bacteria and widely used as thrombolytic agent to dissolve the blood clot of fibrin, especially those clots that formed in the arteries of lungs and heart. Therapeutic enzymes production was carried out by submerged fermentation and purified by salt precipitation method followed by dialysis. Enzyme characterization exhibited maximal enzyme activity at ph 3 and temp. 37 °C and activity was inhibited by EDTA. Numerous diseases could be cure by streptokinase enzyme like, Acute myocardial infarrhythmia (heart attack) is one of the most important applications of streptokinase. Acute myocardial (myocardial) infection is a type of heart attack that occurs when a blood clot blocks a coronary artery and stops blood from flowing to the heart. Strepokinase is given intravenously to break down the clot and restore blood flow to the affected heart muscle. Pulmonary embolism is a condition in which a blood clot travels into the lungs and blocks blood flow. Streptokinase breaks down the clot, improving lung function and preventing further complications. Since it's a bacterial enzyme, your body has a built-in defense against it. That's why it's best to avoid taking this medication more than four days after your first dose, since it may not work as well and can also trigger an allergic reaction.

THE IMPORTANCE OF NURSES IN SMART DRUG USE

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Abstract
Advances in treatment methods in the world and in health increase drug consumption. Incorrect, unnecessary and ineffective drug use can cause some problems. One of these problems is the rise in morbidity and mortality rates. For this reason, studies on rational drug use have been started in the world. Rational drug use is defined by the World Health Organization in 1985 as "the ability of individuals to reach the appropriate drug, at the appropriate time and dose, at the lowest cost, and easily according to their clinical findings and individual characteristics". The purpose of rational drug use; It is to reduce the economic burden caused by the wrong drug and to prevent the biological, physiological or psychological harms that may occur on the patients. Safe drug administration to the patient is one of the most basic responsibilities of the nurse. During the practice of nurses; It is in question that they carry out the procedures performed in the subjects of taking prescriptions/orders, preserving drugs, administering drugs, recording, monitoring and waste management. The knowledge, experience and abilities of nurses are important for the quality of the service. It is of great importance that nurses know the basic elements of the therapeutic effects and safety of the drug given to the patient, the principles of safe preparation and administration of drugs, and take an active role in the education of the patient.

Keywords: Smart medicine, drug management, nursing.

Introduction:

In the 21st century, in parallel with the developments in the medical world, there is an increase in the drugs used in the diagnosis and treatment of diseases. In addition, many negative factors such as environmental pollution, smoking, alcohol, consumption of harmful foodstuffs and stress increase the effect. Incorrect and unnecessary drug use is an important problem affecting public health in our country as well as in the world. Incorrect drug use can cause problems in various dimensions.

Among these problems, the fact that there is a serial in the cases of illness and death has started rational drug use studies.rational drug use at the 1985 Nairobi meeting of the World Health Organization (WHO), "enable patients to take their medications in accordance with their clinical needs, in doses that meet their personal needs, in sufficient time, at the lowest cost to themselves and to society" defined as a set of rules that require (WHO, 1985 & Melli, 2010). In another definition, smart drug use is the right way to prevent a pregnancy, to surgically control it and ultimately to treat it, the amount needed, the time needed and the use at affordable prices (Akkurt, 2016). Smart drug use; It is a planning, execution and monitoring process that

allows treatment to be administered in an effective, safe and economical way (Çobanoğlu & Kızıltan, 2020).

Safe drug administration is one of the most fundamental responsibilities of the nurse. The decision of the drug treatment is under the guardianship of the physician, and the appropriate planning and implementation of the decision is under the guardianship of the supervision (Özdemir&Akdemir).

Requires nurses to flawlessly execute prescriptions/requests, storage, medication administration, registration, monitoring and waste management structuring processes (Ulupınar & Akıcı, 2015). The knowledge, experience and abilities of nurses are important for the quality of the service.

Nurses play a very important role in the process from the patient's trouble-free use of the drug to its correct disposal. As well as the dose of the drug, the hours they are taken and finishing as soon as they go are also important in realizing it at the end (Vançelik at all).

In rational drug use, patients and their relatives have responsibilities as well as doctors and pharmacists. Rational drug use includes children who are sick and applying to a physician, the physician's clinical characteristics and personal characteristics, prescribing appropriate prescriptions and providing necessary information, obtaining memory drugs, and notebooks where they use their drugs at the right time and dose. Smart drug use principles; It is the whole of the use of the right assessment, the right amount, the right application, the right timing, the use of adequate information, and the use of a cost-oriented perspective (Akıcı, Kalaça 2013).

Any mistake regarding the use of drugs can be defined as irrational drug use. The use of drugs that are not used rationally may lead to non-adherence to the patients, to drug interactions, to maintain the resistance to analgesic use and antibiotics, to continue or prolong the consumption, and to increase the treatment effects. According to WHO estimates, more than 50% of its staff are improperly prescribed and sold, with half the patients not using their medication properly (Soykut, Kartal, 2015). Collective education on smart drug use includes the disclosure of appropriate use information according to the instructions for use, and the distribution of training on the use of drugs for collective or specific purposes. Adults may need education and information on appropriate treatments and medications for a variety of reasons. It may be necessary to be informed about the role of drugs in the modern health system, individuals in the society to take responsibility for their own health, and because they are the last determinant of drug use as patients (Fresle & Wolfheim, 1997).

Errors in medication use;
Making patients' problems wrong or incomplete,
Incorrect diagnosis,
Inappropriate treatment and drug selection,
If medicated treatment is planned, the prescription is incomplete or not correct,
Improper scheduling of drugs, dose adjustment,
Failure to provide the correct medication to the patient,
Incorrect or incomplete compilations, information and explanations in the medicine boxes,
Lack of communication with the patient,
Failure to provide sufficient information to the patient about the disease, treatment process, drug use, application and storage conditions, and side effects,
Lack of patient compliance.

Nurses are responsible for most of the mistakes mentioned above. For this reason, nurses are of great importance in the use of smart drugs.

Conclusion:
It is important to ensure the patient protection coverage of hospitals, to take precautions for drug safety, and to create a rational drug use team. Education also has a say in the responsibilities of these cares towards rational drug use in the care processes of patients and their families.

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THE RELATIONSHIP BETWEEN THE LEVEL OF PHYSICAL ACTIVITY AND POSTURE, PERCEIVED STRESS, AND QUALITY OF LIFE IN YOUNG ADULT WOMEN

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Abstract

Physical activity is quite important in terms of physical, functional, emotional, and cognitive health. In studies carried out in different populations, it was reported that lack of physical activity may cause postural and emotional disorders and a decrease in quality of life (QoL). However, studies investigating the relationship between these parameters in young adult women are scarce. Therefore, this study aimed to investigate the relationship between physical activity level and posture, perceived stress, and QoL in young adult women.

Ninety-six women (age:23.96±8.95 years; body mass index:21.61±2.98 kg/m^2) were included in the study. Physical activity level with the International Physical Activity Questionnaire (IPAQ), posture with the New York Posture Scale (NPS), perceived stress with the Perceived Stress Scale (PSS), and QoL with the Short Form-36 (SF-36) were assessed.

Of the participants, 27(28.1%) had low, 53(55.2%) had moderate, and 16 (16.7%) had high physical activity levels. IPAQ score was correlated with energy (p<0.001; rho=0.362), emotional well-being (p=0.040; rho=0.210) and bodily pain (p=0.045, rho=0.205) which are subscales of SF-36. There was no relationship between IPAQ score and other subscales of SF-36, NPS, and PSS scores (p>0.05).

The study showed that the level of physical activity was not associated with posture and perceived stress in young adult women. However, the relationship between an increase in physical activity and an improvement in QoL (emotional well-being, less body pain, and being more energetic) was found. Therefore, the increase in physical activity may contribute to the improvement of QoL in women with a lack of physical activity.

Keywords: Physical activity, women, posture, stress, quality of life

1. Introduction

Physical activity, produced by the contraction of skeletal muscle and significantly increase energy consumption, encompasses all movements in daily life such as sports, exercise, hobbies, and housework (Alpözgen & Özdinçler, 2016). The positive effects of physical activity on physical, physiologic, cognitive, and psychological health are well known (Alpözgen & Özdinçler, 2016; Warburton & Bredin, 2017). Rapidly increasing industrialization and technological developments cause significant changes in people's lifestyles. Due to technology and modernization, many people tend to be more physically inactive (Woessner et al., 2021). Among these changes, physical activity, which affects the health status of individuals, decreases gradually and accordingly. As result of it, different physical and emotional problems may occur

and may affect the quality of life (QoL) of individuals, negatively (Puciato, Borysiuk, & Rozpara, 2017a; Šidlauskienė et al., 2019). Therefore, we hypothesized that physical inactivity may be related to postural disorders, emotional disorders, and a decrease in QoL. For this reason, the purpose of the current study to examine the relationship between physical activity level and posture, perceived stress, and QoL in young adult women.

2. Materials and Methods

The design of the current study was cross-sectional. The ethical approval was taken from Ankara Yıldırım Beyazıt University Ethics Committee (Acceptance date and number: 07.04.2022-06). Participants were selected by snowball sampling method. Healthy young adult women were included in the study. The exclusion criteria were determined as complaints of musculoskeletal pain in the last 6 months, body mass index>35 kg/m^2, serious psychiatric disorders such as panic disorder or major depression, having a history of spine surgery, having spinal deformity (congenital scoliosis, etc.), having spinal pathology (discopathy, stenosis, spondylolisthesis, etc.), having any chronic disease (cancer, hypertension, diabetes mellitus), having orthopedic, neurological, rheumatological, etc. diseases.

The demographic and physical characteristics of participants were questioned and International Physical Activity Questionnaire (IPAQ) for assessing the physical activity level, New York Posture Scale (NPS) for assessing the posture, Perceived Stress Scale (PSS) for assessing the perceived stress, and Short Form-36 (SF-36) for assessing the QoL were used.

The IPAQ is a valid and reliable self-report form used to assess physical activity levels. It questions the amount of time the respondent has been physically active in the last week. The energy required for activities is calculated by the Metabolic Equivalent (MET) - minute score. MET values are determined for each activity and are 3.3 METs for walking, 4.0 METs for moderate-intensity physical activity, and 8.0 METs for vigorous physical activity. By using these values, the weekly physical activity level is calculated, and it categorized as low, moderate, and high according to the physical activity score (Saglam et al., 2010).

The NPS evaluates the posture observationally from the lateral and posterior aspects, and a score is obtained by scoring 13 different parts of the body. For each item, correct posture = 5, moderate impairment = 3, and severe impairment = 1, and the total score is recorded. A lower score indicates better posture. (McRoberts, Cloud, & Black, 2013).

The PSS consists of 14 items. It measures the degree to which an individual's life is perceived as stressful. Participants evaluate each item on a 5-point Likert-type scale ranging from "Never (0)" to "Very often (4)". The score of it ranges from 0 to 56 points and higher score indicates higher excess of stress perception (Eskin, Harlak, Demirkıran, & Dereboy, 2013).

The SF-36 consists of 36 items and 8 subgroups. These; physical functions, physical role limitations, body pain, social functions, mental health, role limitation due to emotional problems, energy, and general health perception. Participants are asked to answer questions other than those questioning general changes in health status, considering the last 4 weeks (Kocyigit, 1999).

Data analysis and calculations were performed using the SPSS Statistics 22.0 Software Program (IBM Corp. Release 2012.). The Detrended Q-Q graph, Kolmogorov-Smirnov Test, skewness and kurtosis coefficients, Histogram graph, and coefficient of variance were used to analyze the distribution of continuous variables. Normally distributed continuous variables were shown as X±SD (mean ± standard deviation), and non-normally distributed continuous variables were shown as median and IQR (Interquartile Range). Ordinal variables were shown as frequency

(n) and percentage (%). For analyzing the relationship between physical activity and posture, perceived stress, and QoL, the Spearman correlation coefficient test was used.

3. Findings and Discussion

One hundred women were assessed for eligibility criteria, but the current study was completed with ninety-six women (age:23.96±8.95 years; body mass index:21.61±2.98 kg/m^2). Four participants were excluded from the study due to body mass index>35 kg/m^2 (n:1), having spinal pathology (n:2), and missing value (n:1). The physical and demographic characteristics of participants were provided in Table 1.

Table 1. Physical and demographic characteristics of the participants

	Mean±Standard Deviation (n:96)
Age (years)	23.96±8.95
Body mass index (kg/m^2)	21.61±2.98
	Number (percent)
Education	
Primary	2 (%2.1)
High school	45 (%46.9)
Bachelor	44 (%45.8)
Master	5 (%5.2)
Employment	
Employee	31 (%32.3)
Not employee	65 (%67.7)
Marital status	
Married	14 (%14.6)
Single	82 (%85.4)
Smoking	
Yes	13 (%13.5)
No	83 (%86.5)
Alcohol use	
Yes	7 (%7.3)
No	89 (%92.7)
Exercise habit	
Yes	29 (%30.2)
No	67 (%69.6)

The descriptive values of IPAQ, NPS, PSS and SF-36 were demonstrated in Table 2. Of the 96 participants, 27(28.1%) had low, 53(55.2%) had moderate, and 16 (16.7%) had high physical activity levels (Figure 1.).

Table 2. Descriptive values of the participants' evaluation parameters

	Median (Interquartile range) (n:96)
International Physical Activity Questionnaire Score	1180 (1208)
New York Posture Scale Score	57 (6)
Perceived Stress Scale Score	20.5 (8)

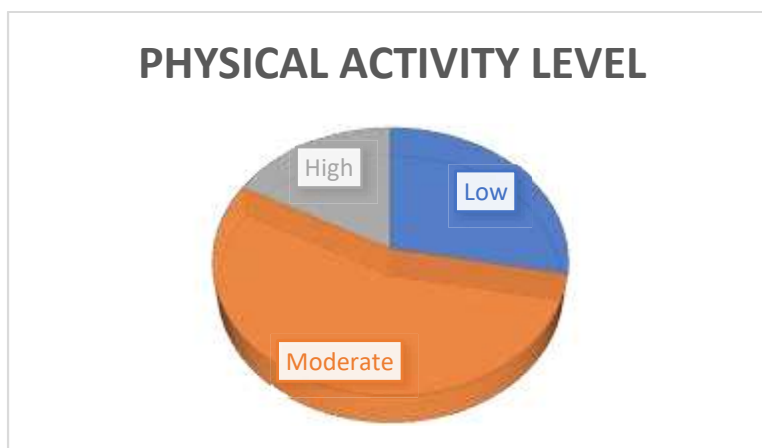| Short form-36	
Physical function	95 (10)
Limitations due to physical problems	100 (50)
Bodily pain	77.25 (32.50)
Social functions	68.75 (37.50)
Emotional well-being	56 (27)
Limitations due to emotional problems	66.70 (100)
Energy	50 (25)
General health	65 (25)

Figure 1. The physical activity level of the participants

IPAQ score showed positive low-moderate correlation with energy (p<0.001; rho=0.362), positive low correlation with emotional well-being (p=0.040; rho=0.210) and positive low correlation with bodily pain (p=0.045, rho=0.205) which are subscales of SF-36. No relationship was found between IPAQ score and other subscales of SF-36, NPS, and PSS scores (p>0.05) (Table 3.).

Table 3. The relationship between physical activity and posture, perceived stress, and quality of life

	International Physical Activity Questionnaire Score p; rho
New York Posture Scale Score	p=0.381; rho=0.090
Perceived Stress Scale Score	p=0.478; rho=-0.073
Short form-36	
Physical function	p=0.583; rho=-0.057
Limitations due to physical problems	p=0.206; rho=0.130
Body pain	***p=0.045. rho=0.205**
Social functions	p=0.057; rho=0.195
Emotional well-being	***p=0.040; rho=0.210**
Limitations due to emotional problems	p=0.529; rho=0.065
Energy	***p<0.001; rho=0.362**
General health	p=0.090; rho=0.174

*p<0.05

According to the study's findings, physical activity was not correlated with postural alignment and perceived stress. Although we hypothesized that physical activity may affect posture and perceived stress, they were not correlated. It may be attributed to the study design. The study is a correlation study. The greatest weakness of correlation research is its inability to establish cause-effect relationships. The study also showed that physical activity was related to the QoL especially emotional well-being, perceived pain, and energy. Our finding is consistent with

Puciato et al.. In their study of the elderly working population, it was stated that high physical activity may be associated with high QoL (Puciato, Borysiuk, & Rozpara, 2017b).

4. Conclusion and Recommendations

The study found that posture and perceived stress were not correlated with physical activity in young adult women. However, the relationship between an increase in physical activity and an improvement in QoL (emotional well-being, less body pain, and being more energetic) was found. Therefore, the increase in physical activity may contribute to the improvement of QoL in women with a lack of physical activity. Encouraging healthy young adult women to engage in physical activity may be important for improving QoL.

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EFFECTS OF ALPHA LIPOIC ACID ON CASPAS-3 ACTIVITY AND MOTOR FUNCTIONS IN TRAUMATIZED RAT SPINE

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ABSTRACT

Alpha lipoic acid is the cofactor of the enzyme complex that catalyzes the oxidative decarboxylation of alpha keto acids, is necessary for the regulation of glucose metabolism, and is an effective antioxidant that works together with important antioxidants such as redox system vitamin E, vitamin C and glutaion. In our study, the dose-dependent effect of alpha lipoic acid was investigated in rats with acute spinal cord injury by caspase-3 activity and neurological examination.

The study was performed in 32 adult male Wistar albino rats. They were divided into 4 groups, each consisting of 8 rats, Group I (control), Group II (trauma), Group III (low dose α-LA) and Group IV (high dose α-LA). Early post-op 25mg/kg and 24 hours later 25mg/kg i.p. to Group III after spinal cord trauma. α-LA (2 doses-50 mg/kg total) was administered.; Group IV was given early post-op 100 mg/kg i.p., post-op 3rd day 50 mg/kg i.p. and post-op 5th day 25mg/kg i.p. α-LA (3 doses-175 mg/kg) was administered. Among the groups, caspase-3 activity was biochemically; functional recovery was evaluated using the Basso locomotor rating scale.

It was observed that high-dose α-LA administration reduced caspase-3 activity and provided more functional recovery in a shorter time. (p <0.01) It has been shown in this experimental study that high-dose α-LA administration provides more functional recovery in a shorter time by decreasing caspase-3 activity in acute spinal cord traumas. (p <0.01) In our study, it is remarkable that locomotor improvement and low caspase-3 activity in the groups given α-LA.

Keywords: Alfa lipoic acid, caspas-3, apoptosis

Introduction

Due to the high morbidity and mortality of spinal cord trauma and the lack of a definitive treatment in patients with neurological deficits, it still remains an unsolved problem. Today, motor vehicle accidents, falls, violent practices and occupational accidents are frequently encountered among the main causes of spinal cord injuries (1) (2) . Especially motor vehicle accidents and violent accidents are increasing day by day. In Türkiye, 1600-2000 serious spinal cord injury cases are reported annually (3). In spinal cord injury, the first damage caused by the effect of mechanical impact is known as primary damage. In direct proportion to the severity of the impact, flexion, extension, dislocation and penetrating injuries cause stretching or tearing in neural elements or spinal cord vessels. Primary spinal cord injury can only be prevented by preventing accidents.

Secondary spinal cord injury is the type of injury that develops after primary mechanical injury and causes more damage to the spinal cord in some conditions. Vascular effects such as neurogenic shock, bleeding and ischemia-reperfusion occurring in the patient with spinal cord injury, free radical formation at the cellular level in the injured tissue, excitotoxicity, secondary damage due to calcium and fluid-electrolyte disorders, immunological damage, apoptosis, hemorrhage in the spinal cord as a result of mitochondrial dysfunctions, a series of pathological changes occur, resulting in edema, demyelination, axonal and neuronal necrosis, cavity formation and infarction. The axons of the pathways descending along the entire spinal cord are affected by local injury and exhibit a chain of pathological events that can lead to atrophy, apoptosis or necrosis (4).

 It has been shown that these pathological changes increase with time and worsen until the 6th day after the injury (5). The main pathology underlying all the above mentioned mechanisms is impaired cord perfusion and energy deficiency at the cellular level (4). It has been reported that ischemia begins immediately after spinal cord injury, worsens within the first 3 hours if untreated, and continues for at least 24 hours (6). One of the most important secondary damage mechanisms is apoptosis. About 15% of neurons in the central nervous system are lost in about 70 years of human life. The programmed cell death that occurs during the aging process is called apoptosis. Apoptosis not only causes physiological cell death, it is also known to mediate pathological cell death (7). The presence of apoptosis has been demonstrated in humans after traumatic spinal cord injury. In addition, information from experimental studies is that spinal cord injury significantly worsens caspase activation in particular (8).

Alpha lipoic acid (α-LA) is the cofactor of the enzyme complex that catalyzes the oxidative decarboxylation of alpha keto acids, is necessary for the regulation of glucose metabolism. It is an effective antioxidant that works together with important antioxidants such as redox system vitamin E, vitamin C and glutation. It has been determined that α-LA is a strong antioxidant and metal chelator, increases glutathione rates, has neurotrophic activity by increasing NGF in peripheral nerves, and decreases TNF alpha levels. All these features of α-LA suggested that it may have an effect on spinal cord secondary damage mechanisms and on apoptosis.
Spinal cord injury treatment studies have generally been designed to prevent secondary injury mechanisms.

We designed such a study. In our study, the dose-dependent effects of alpha lipoic acid on motor functions and apoptosis were investigated according to Basso locomotor rating scale and caspase-3 activity by aneurysm clip method in rats with acute spinal cord trauma.

Metod

In our study, 32 adult male spraue-dawley rats produced in the Production and Purification Laboratory of Istanbul University Experimental Animal Biology and Biomedical Application Techniques Department were used. The rats were divided into 4 groups, 8 in each group. Th9-10 laminectomy was performed with the aid of a microscope under general anesthesia in all groups.

These groups are respectively;

    Group I (n=8 rats) underwent laminectomy.

Group II (n=8 rats) performed 60 sec trauma was created with Yaşargil aneurysm clip at 0.7N pressure after laminectomy

Group III (n=8 rats) performed 60 sec trauma was created with Yaşargil aneurysm clip at 0.7N pressure after laminectomy. After that they were treated with early post-op 25mg/kg and 24 hours later 25mg/kg i.p. alpha-lipoic acid (2 doses-50 mg/kg total) .

Group IV (n=8 rats) performed 60 sec trauma was created with Yaşargil aneurysm clip at 0.7N pressure after laminectomy.
after that they were treated with early post-op 100 mg/kg i.p., post-op 3rd day 50 mg/kg i.p. and post-op 5th day 25mg/kg i.p. α-LA (3 doses-175 mg/kg).

60 mg/kg ketamine hydrochloride i.p. was administered to rats to be operated on to induce spinal cord trauma. and 10 mg/kg xylazine i.p. anesthesia was applied. Under the operating microscope, after a 2 cm skin incision between the thoracic 8-10, the skin-subcutaneous tissue was passed and the paravertebral muscles were stripped. Spinal cord was exposed by performing thoracic 8-10 total laminectomy. Then, spinal cord injury was created by applying an extradural clip with a 0.7N pressure Yaşargil aneurysm clip (FT217T) to the rats in group II, group III, and group IV for 60 seconds. Following hemostasis, the layers were closed with 3/0 silk in accordance with their anatomy.

In the postoperative period, the motor functions of the groups were evaluated with Basso's locomotor rating test. (9) The scale consists of scores ranging from 0 to 21. While there is no observable movement at 0 points, 21 points represent normal healthy rats. Evaluation scale was applied every day for the following 15 days after being evaluated at the 6th and 24th hours in the early postoperative period.

The rats were sacrificed on the sixteenth day. Samples were taken from damaged spinal cord parts. Tissue samples were stored on ice throughout the study and stored at -80ºC until biochemical investigation. Tissue samples were centrifuged after homogenization and protein determination was made from the supernatant formed by the biuret method in an abbott architect autoanalyzer. DEVD-pNA substrate was added in accordance with the protocol and incubated at 37ºC for 2 hours. Caspase-3 activity was determined by reading at 405 nm in proportion to the protein amount of the samples.

Statistical Analysis

While evaluating the findings obtained in the study, SPSS (Statistical Package for Social Sciences) for Windows 15.0 program was used for statistical analysis. While evaluating the study data, in addition to descriptive statistical methods (Mean, Standard deviation), Kruskal Wallis H test was used for comparison of quantitative data, for comparisons between groups, and Mann Whitney U test was used to determine the group that caused the difference. The Kruskal Wallis test was used for in-group comparisons, and the Wilcoxon sign test was used to determine the group that caused the difference. The results were evaluated at the 95% confidence interval, at the significance level of $p<0.05$, and at the $p<0.01$ level of forward significance.

Results

The mean weight of the rats was 317,59±21,29. There was no statistically significant difference between the weights of the cases according to the groups. (p>0.05). Motor function scores are shown in Table 1. Motor function scores over time were found to be statistically significantly higher in Group 1 at the 6th hour measurement. (p<0.01). Group 2, Group 3 and Group 4 were statistically equal. It was observed that the motor function scores of the rats with spinal cord trauma were significantly decreased when compared to the control group (p<0.001). There was no significant difference between motor function scores at 6th hour in rats with spinal cord trauma (p>0.05). With this result, it is understood that trauma groups are equally traumatized. At the 12th hour measurement, motor function scores were found to be statistically significantly higher than Group 4, Group 2 and 3. (p<0.05). It was observed that functional recovery started from the 12th hour in the group given high-dose α-LA. Significant recovery of treated rats after surgery compared to untreated rats started on day 1 and continued for 15 days (p<0.001). In rats administered low-dose α-LA (groupIII), a significant improvement was detected from day 1 compared to the trauma group (group II), whereas in rats administered high-dose α-LA (group IV), significant improvement started at 12th hour (p<0.05). There was a significant difference in motor function improvement between rats administered high dose α-LA and low dose α-LA (p<0.05), and this significance emerged on day 1.

In terms of Caspas-3 mean scores, the 4 groups were significantly different from each other. (p<0.01). It was observed that spinal cord trauma increased caspas-3 activity at a statistically significant level (p<0.001). It was determined that the use of α-LA significantly decreased caspase-3 activity compared to the trauma group (p<0.001). The use of low dose α-LA significantly decreased caspase-3 activity (p<0.05). The use of high-dose α-LA significantly decreased caspase-3 activity compared to low-dose α-LA administration (p<0.001). The caspas 3 levels in the groups are given in Table 2.

Discussion

While reducing the severity of primary damage is only possible with protection, prevention from secondary damage is known as neuroprotection. Secondary injury, which starts within minutes or hours after the primary injury, is a process that continues for weeks. The purpose of research on secondary injury is to find and use pharmacological agents and measures to protect their viability and their connection with distal neurons, increase their resilience or stop pathological processes that would damage them after primary injury.

As a result of the researches, mechanisms such as glutamatergic, cholinergic and cathocholinergic neurotransmission systems, free radical production, lipid peroxidation, calcium and other ion channels, growth factors, neurotrophic factors, inflammation process, endogenous opioid receptors, enzymes, apoptotic cell death and regeneration for the prevention of secondary damage. is used. Modern pharmacological treatment protocols aim to reduce progressive neuron damage and to minimize the resulting neurological sequelae.

Crowe et al. reported that secondary injury mechanisms triggered after primary injury of the spinal cord cause the onset of apoptosis and a progressive neurodegeneration (10).
Anderson et al. showed that the neurological damage that occurs after acute spinal cord injury is due to primary injury, necrosis following secondary injury, and apoptosis seen in the later

period (11). Liu et al. demonstrated neuronal and glial apoptosis between the 4th and 9th days after spinal cord trauma (12). Lu et al. showed that although neuronal and glial apoptotic cells were not seen in the first 5 minutes after contusion injury, there was apoptosis in the lesion area between the 4th and 14th days and peaked at the 24th hour (13). It has been determined that especially caspase-1 and caspase-3 are activated in spinal cord trauma and initiate apoptosis (14). Li et al. in a study conducted by rats, it was emphasized that caspase-3 inhibition significantly reduced the lesion area and improved motor functions after spinal cord trauma in rats (14).Today, therapeutic prevention efforts for apoptotic muscle women after spinal cord injury have gained importance (15).

In this study, we examined the dose-dependent effect of alpha lipoic acid in rats with acute spinal cord trauma based on caspase-3 activity and neurological examination. Alpha lipoic acid has different physiological functions showing various mechanisms of action. One of the most striking features of α-LA is that it is a powerful antioxidant.

Oxidative stress due to free oxygen radicals and consequent inflammatory response and apoptosis play an important role in the secondary injury mechanism after acute spinal cord injury (16). In the formation of apoptosis and inflammatory response, cytokines such as IL-1β, IL-6 and TNF-α released from the central nervous system have an effect (17). Extrinsic (receptor-dependent) and intrinsic (receptor-independent) mechanisms, which are the two main pathways of apoptosis, are thought to be both activated in spinal cord injuries (16). Receptor-dependent apoptosis is induced by extracellular signals, particularly tumor necrosis factor. Immediately after spinal cord injury, TNF accumulates rapidly in the damaged area. Fas receptor activation of neurons, microglia, and oligodendrocytes results in a number of programmed caspase activations. These are caspase 8 and caspase 3 and caspase 6, known as effector caspases. Activation of these caspases results in the death of affected cells (17)The alternative mechanism of the extrinsic pathway is the formation of programmed cell death by caspase 3 activation of INOS (17). For this reason, Caspase 3 is used as a marker of apoptosis. In our study, it was observed that α-LA decreased caspase 3 levels. This results in inhibition of apoptosis.

In order for α-LA to be an agent that can be used in the management of neural trauma with our current knowledge, dose and duration management and dose-dependent side effects should be clarified. In our study, we had the opportunity to evaluate the clinical and biochemical effects of different doses of α-LA. According to our results, it was understood that α-LA inhibited apoptosis, which led to successful treatment in the spinal cord trauma model.

Conclusion

In our study, α-LA application provided significant improvement in the treatment groups. Significant improvement in high-dose α-LA application occurs earlier and more than low-dose α-LA application. Caspase-3 activity is increased in spinal cord trauma. Administration of α-LA significantly reduces caspase-3 activity. High-dose α-LA administration decreases caspase-3 activity more than low-dose α-LA administration.

In our evaluation, high-dose α-LA administration in spinal cord trauma further decreased caspase-3 activity, resulting in more neurological recovery in a shorter time. α-LA is neuroprotective in spinal cord trauma. It was concluded that high-dose α-LA therapy could be beneficial in people with spinal cord trauma, but more studies are needed for clinical use.

Table 1: Motor function values between groups according to time.

Time	Group 1		Group 2		Group 3		Group 4		
	Mean ±	Ss	Mean ±	Ss	Mean ±	Ss	Mean ±	Ss	*p*
6.h	19,50 □	1,41	0,00	0,00	0,38	0,52	0,50	0,53	**0,000****
12.h	20,50 □	0,76	0,25	0,46	0,50	0,76	1,00	0,53	**0,000****
1.day	20,75 □	0,71	0,38	0,52	1,50	0,93	2,00	0,76	**0,000****
2.day	20,88 □	0,35	0,63	0,74	2,25	1,04	2,50	0,53	**0,000****
3.day	21,00 □	0,00	0,88	0,83	2,88	0,99	3,13	0,83	**0,000****
4.day	21,00 □	0,00	1,00	0,76	2,88	0,99	3,88	0,83	**0,000****
5.day	21,00 □	0,00	1,00	0,76	3,63	1,06	4,25	1,04	**0,000****
6.day	21,00 □	0,00	1,13	0,83	4,00	0,93	5,50	0,93	**0,000****
7.day	21,00 □	0,00	1,38	0,74	4,63	1,06	6,38	0,92	**0,000****
8.day	21,00 □	0,00	1,38	0,74	4,88	1,13	7,50	0,76	**0,000****
9.day	21,00 □	0,00	1,63	0,92	5,88	1,13	7,88	0,64	**0,000****
10.day	21,00 □	0,00	2,25	1,16	6,75	1,39	8,50	0,93	**0,000****
11.day	21,00 □	0,00	2,38	1,19	7,25	1,49	9,63	0,74	**0,000****
12.day	21,00 □	0,00	2,50	1,20	8,00	1,69	9,75	0,89	**0,000****
13.day	21,00 □	0,00	3,13	1,36	8,13	1,55	11,00	1,20	**0,000****
14.day	21,00 □	0,00	3,25	1,49	8,63	1,60	12,13	1,13	**0,000****
15.day	21,00 □	0,00	3,63	1,77	8,75	1,49	12,88	1,25	**0,000****

Table 2: The caspas 3 levels in the groups.

	Group 1		Group 2		Group 3		Group 4		
	mean ±	Ss	mean ±	Ss	mean ±	Ss	mean ±	Ss	*p*
Caspas 3	0,13	0,06	0,52	0,24	0,27	0,03	0,19	0,04	**0,000****

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DIAGNOSTIC APPROACH IN CHILDHOOD PERIPHERAL LYMPHADENOPATHY

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Abstract

Lymphadenopathy, which is frequently encountered in childhood, mostly develops for benign reasons, and it is important not to be late in the diagnosis, as it may be the first sign of some serious systemic diseases and cancers. In this study, we aimed to examine the clinical and etiological features of lymphadenopathy and to reveal which laboratory tests may be more useful for us in distinguishing malignant and benign etiologies. In addition, to determine whether Doppler USG is superior to superficial tissue USG in the differentiation of malignant-benign.

Between January 2010 and December 2011, 50 patients with lymphadenopathy in the pediatrics, pediatric oncology and pediatric emergency outpatient clinics of Zonguldak Bülent Ecevit University were evaluated prospectively.

60% of the cases were male, 40% were female, their age ranged from 1 to 16 years, 84% were diagnosed with benign disease and 16% were diagnosed with malignant disease. In the definition of benign and malignant, rubbery lymphadenopathy, anemia, thrombocytopenia, high uric acid level, presence of orgonamegaly, hyperechoic lymph node on superficial gray scale USG, and peripheral blood supply of the lymph node on Doppler USG were found to be valuable data. It was determined that the probability of tularemia was high in patients with well water drinking, history of animal contact, chronic, large cervical, pain, tenderness and temperature increase. Tularemia, which has been frequently detected in the etiology of neck lymphadenitis in our country in recent years, must be excluded in our region.

Keywords: Peripheral lymphadenopathy, child, malignancy, risk factors, tularemia

1. **Introduction**

Lymphadenopathy, which develops as a result of enlargement of lymph nodes in certain parts of our body for various reasons, is a common finding in childhood as a complaint at presentation or during physical examination (1). The majority of lymphadenopathies in children are benign, mostly seen in the course of infectious diseases, but it may be the first finding in the course of some malignant or serious systemic diseases (2, 3). For this reason, lymph node enlargement in children causes families to consult a physician with fear and anxiety, or physicians have difficulties in differential diagnosis (4). The cause of a pathologically sized lymph node must be revealed.

History, physical examination, and various laboratory and radiological examinations can guide us in the approach to a child with lymphadenopathy. Sometimes unnecessary and expensive tests are performed for lymphadenopathies due to simple infections, and sometimes the diagnosis of the underlying malignant disease can be delayed if the symptoms are not taken seriously enough (5, 6, 7, 8).

Our aim in this study; to examine the clinical and etiological features of lymphadenopathy and to try to reveal which laboratory tests may be more useful for us in distinguishing malignant and benign etiologies. In addition, to determine whether Doppler USG is superior to superficial tissue USG in the differentiation of malignant-benign lymphadenopathy in the radiological evaluation of lymphadenopathy.

2. **Materials and Methods**

This study is a prospective study of 73 patients who presented to the pediatric oncology and pediatric emergency outpatient clinics with lymphadenopathy or were found to have lymphadenopathy in physical examinations between January 2010 and December 2011 in the Department of Pediatrics, Faculty of Medicine, Zonguldak Bülent Ecevit University. was evaluated. The patients who applied for lymphadenopathy and were not followed up and the patients whose lymphadenopathy was not pathological in their physical examination were excluded from the study group and the evaluation was made on 50 cases. In terms of the duration of lymphadenopathy; LAPs shorter than four weeks were considered acute, and LAPs longer than four weeks were considered chronic. In terms of lymphadenopathy location; LAP occurring in one lymph node region or adjacent lymph node region was evaluated as regional LAP, and enlargement of more than two non-adjacent lymph nodes was considered diffuse LAP. If the hemoglobin value in the complete blood count is below

two standard deviations according to the age of the patient, anemia; If the leukocyte count is higher than 10000 (109/L), leukocytosis, if it is lower than 4000 (109/L), leukopenia; If the platelet count was higher than 400000 (1012/L), it was considered as thrombocytosis, if it was lower than 150000 (1012/L), it was considered as thrombocytopenia. CRP over 3.4mg/dl, ESR over 20 mm/hr, and LDH over 249IU/L were considered high. In terms of imaging examinations; The necessity of ultrasonography and two-way chest X-ray in the differentiation of malignant and benign cancer and whether color Doppler USG is superior to gray scale USG were evaluated. Ethics committee approval was obtained with the code number 2011-20-00-03 of the hospital.

Statistical analyzes of the study were made with the SPSS 13.0 package program. Continuous variables in the study are shown with mean, standard deviation, median, minimum and maximum values, categorical variables are shown with frequency and percentage. Variables Shapiro Wilk test, Kruskal Wallis test, Mann Whitney U and Bonferonni corrected Mann Whitney U tests were used for 2-group comparisons. Pearson chi-square, Yates chi-square and Fisher exact chi-square tests were used for group comparisons of categorical variables. Comparisons with a p value below 0.05 were considered statistically significant in the study.

3. **Findings**

When the cases were evaluated according to gender, 60% of the cases with lymphadenopathy were male and 40% were female. Their ages ranged from 1 to 16. When evaluated according to the duration of lymphadenopathy, it was determined that 58% of the cases had acute lymphadenopathy and 42% had chronic lymphadenopathy. When the cases were evaluated in terms of the extent of lymphadenopathy, it was found that 40 (80%) had regional lymphadenopathy and 10 (20%) had diffuse lymphadenopathy.

Locations of regional lymphadenopathies are given in Table 1, and locations of diffuse lymphadenopathies are given in Table 2.

Table 1: Locations of regional lymphadenopathies

Locations	N	%
Cervical	33	82.5
Submandibular	3	7.5
Axillary	3	7.5
İnguınal	1	2.5
Total	**40**	**100**

Table 2: Locations of diffuse lymphadenopathies

Locations	n	%
Cervikal + Submandıbular	3	30
Cervikal + Axillary	2	20
Cervikal +Axillary + İnguınal	3	30
Cervikal + Inguınal	2	20
Total	**10**	**100**

When evaluated in terms of some symptoms and signs accompanying lymphadenopathy, 25 (50%) of 50 cases had fever, 6 (12%) weight loss, 10 (20%) night sweats, 12 (24%) hepatomegaly, 7 cases. It was found that splenomegaly was accompanied by splenomegaly in 14 (14%) and upper respiratory tract infection symptoms in 25 (50%). Petechia and purpura were detected in 2 of the cases diagnosed with malignant disease. In terms of lymphadenopathy size, 3 cases smaller than 2 cm, 13 cases between 2-2.4 cm, and 16 cases larger than 18.3 cm between 2.5-3 cm were detected. When the cases were evaluated according to the palpation characteristics of lymphadenopathy, 24 (48%) of the lymphadenopathies were soft, 20 (40%) were hard, 6 (12%) were rubbery, 36 (72%) were mobile while 14 (28%) were) was found to be fixed. There was pain and tenderness in lymphadenopathy in 11 patients (22%), redness in 7 (14%) and an increase in temperature in 5 (10%) patients. Of 50 cases, 26 (5%) had a history of drinking well water and 20 (40%) had a history of animal contact.

When the laboratory tests of the patients with lymphadenopathy are evaluated; Anemia was found in 10%, leukocytosis in 28%, and leukopenia in 2%. Thrombocytosis was found in 9 of the cases, and thrombocytopenia was found in 7 of them. Sedimentation was found to be high in 50% of cases, CRP in 26%, LDH in 62%, and uric acid in 6% of cases.

When the radiological examinations of the patients with lymphadenopathy were evaluated; Mediastinal enlargement was detected in 6 of 50 patients whose chest X-rays were taken. Of the cases with mediastinal enlargement; 2 were diagnosed with ALL, 1 with HL, 1 with CMV, and 2 with tuberculosis. It was seen that 6 cases with hepatomegaly were diagnosed with EBV, CMV, tuberculosis and ALL, 2 cases with splenomegaly were diagnosed with CMV and EBV, 3 of 6 cases with hepatosplenomegaly were diagnosed with ALL and one with HL and EBV. Lymph node hilus was not seen in 4 patients who underwent superficial tissue USG, lymph node was hyperechoic in 3 and hypoechoic in 47. In the mass color Doppler USG

performed for lymphadenopathies, 34 central, 3 peripheral and 8 mixed blood vascularization were observed, while no blood supply was observed in 4 of them.

The cases were divided into 4 groups according to their latest diagnosis.

Group 1; It consisted of a total of 27 cases, 15 of whom were diagnosed with EBV, 6 diagnosed with CMV, 2 diagnosed with Toxoplasma, 1 diagnosed with Rubella, 1 diagnosed with Varicella, 2 diagnosed with HSV1 infection.

Group 2; It consisted of 8 cases diagnosed with tularemia.

Group 3; It consisted of 5 cases diagnosed with acute lymphoblastic leukemia and 3 cases diagnosed with Hodgkin lymphoma.

Group 4; It consisted of 7 cases in total, 2 patients diagnosed with tuberculosis, 1 patient diagnosed with Kawasaki disease, 3 patients diagnosed with PFAPA, and 1 patient diagnosed with lymphoproliferative disease.

The distribution of our cases according to the groups is given in Figure 1.

Figure 1: Distribution of lymphadenopathy cases according to groups
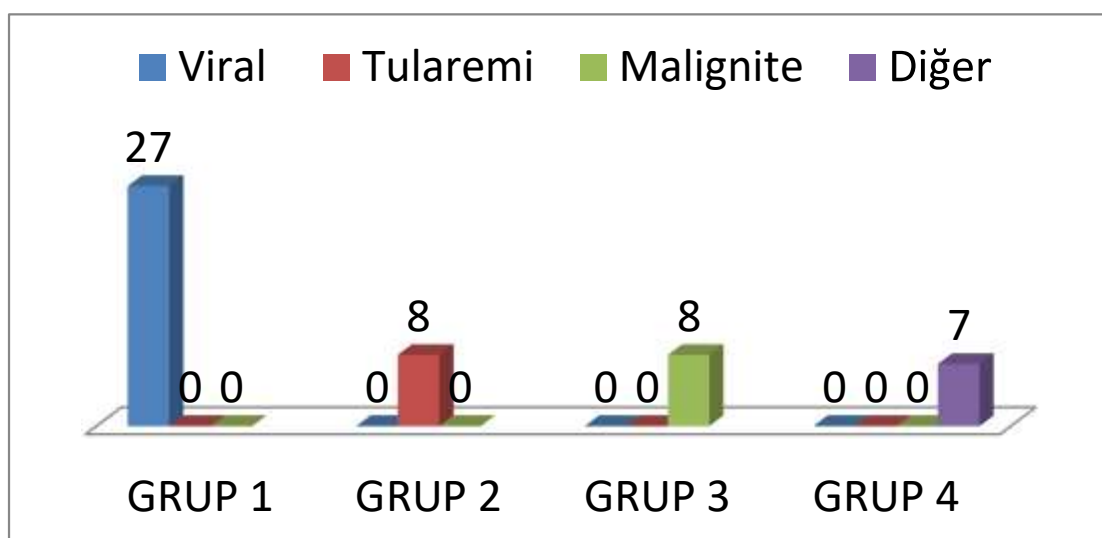
When the groups were evaluated in terms of age and gender of the patients; Ages of the patients were 1-14 years in Group 1 (mean: 5.7), 2-13 years in Group 2 (mean: 9.1), 2-14 years in Group 3 (mean: 6.38), Group 4 was between the ages of 3-11 (mean: 6). When the groups were compared in terms of age groups, no statistically significant difference was found between them (p:0.184). While there were 10 girls and 17 boys in Group 1, 5 girls and 3 boys in Group 2, 4 girls and 4 boys in Group 3, all the patients in Group 4 were male. When the cases were compared according to the groups in terms of gender, a difference was found between Group 2 and Group 4. While the percentage of female patients in Group 2 was 62.5%, the percentage of

female patients in Group 4 was 0%. Although group 4 was separated due to the absence of female patients, the difference was not found statistically significant when the cases were compared according to the groups in terms of gender (p:0.344).

When the groups were examined according to the duration of lymphadenopathy; In Group 1, 18 (66.7%) acute, 9 (33.3%) chronic, in Group 2 2 (25%) acute 6 (75%) chronic, in Group 3 6 (75%) acute 2 There were chronic (25%) and 3 (42.9%) acute and 4 (57.1%) chronic cases in Group 4. It was noted that the number of chronic cases in Group 2, which was formed by the tularemia group, was higher than the other groups, and the insignificance of the statistical difference was attributed to the insufficient number of patients (p>0.05).

When the localizations of the patients with lymphadenopathy were evaluated according to the groups, the lymphadenopathies were 95.8% cervical in Group 1, 50% cervical in group 2, 50% cervical in group 3, and 83.3% cervical in group 4. When the localities were compared according to the groups in cases with regional LAP, no significant difference was found between them (p:0.119).

When the groups were evaluated according to the lymphadenopathy diameter; The lymph node diameter is between 10mm and 40mm (mean, 23.25mm) in Group 1, between 28mm and 50mm (mean, 38.8mm) in Group 2, between 10mm and 40mm (mean, 23.25mm) in Group 3, In group 4 it was between 20-40mm (average 27.29mm). When the groups were compared in terms of lymph node diameters, it was observed that the lymph node diameter was significantly larger in Group 2 than the other groups, and this difference was statistically significant (p:0.004).

When the groups were compared according to the mobilization and consistency characteristics of lymphadenopathy, a statistically significant difference was found between Group 4 and the other groups. It was observed that this difference was caused by the rubbery lymph nodes of 2 patients with tuberculosis and 3 patients with PFAPA in Group 4 (p<0.05). When the groups were compared in terms of the mobility of lymphadenopathy, it was found that lymph nodes were fixed in more patients in Group 2, which included tularemia cases, compared to the other groups, but the difference was not statistically significant due to the small number of patients (p:0.119). The comparison of the groups according to the mobilization and consistency characteristics of lymphadenopathy is given in Table 3.

Table 3: Comparison of the groups according to the mobilization and consistency characteristics of lymphadenopathy

	Consistency	Mobilization

	Hard n(%)	Soft n(%)	Tire n(%)	Moving n(%)	Fixe n(%)
Group 1	14(51,9)	11(40,7)	2(7,4)	21(77,8)	6(22,2)
Group 2	3(37,5)	5(62,5)	0(0)	3(37,5)	5(62,5)
Group 3	2(25)	6(75)	0(0)	6(75)	2(25)
Group 4	1(14,3)	2(28,6)	4(57,1)	6(85,7)	1(14,3)
P value	**>0,05**			**0,119**	

When the groups were evaluated in terms of pain-tenderness, redness and temperature increase detected during lymphadenopathy examination, these findings were found to be statistically significantly higher in Group 2 compared to the other groups (p:0.015, p:0.028, p:0.017).

When the groups were compared according to the history of water and animal contact, it was found that both histories were significantly higher in Group 2, which consisted of tularemia cases, compared to the other groups (p: 0.007/ 0.008).

When the groups were compared in terms of hemoglobin levels, it was observed that the hemoglobin value was significantly lower in Group 3, which included the cases with malignancy, compared to the other groups. However, due to the small number of cases, no significant difference was found in the statistical study. When the groups were compared among themselves, it was seen that there was a significant difference in thrombocytopenia in favor of Group 3 between Group 1 and Group 3, and between Group 3 and Group 4. (p:0.014, p:0.048). The comparison of the laboratory tests of the groups is given in Table 4.

Tablo 4: Comparison of laboratory tests of the groups

	Hemoglobin		White blood cell			Platelet		
	Normal	Low	Normal	High	Low	Normal	High	Low
Group 1 n %	25 92.6	2 7.4	20 74,1	7 25,9	0 0	20 74,1	5 18,5	2 7,4
Group 2 n %	8 100	0 0	5 62,5	3 37,5	0 0	5 50	2 37,5	1 12,5
Group 3 n	5 62,5	3 37,5	4 50	3 37,5	1 12,5	4 50	0 0	4 50

%								
Group 4 n %	7 100	0 0	6 85,7	1 14,3	0 0	5 85,7	2 14,3	0 0
p	**0,053**		**0,468**			**0,075**		

When the LDH level was compared between the groups, it was seen that the percentage of LDH was higher in Group 3, which consisted of cases with malignancy, compared to the other groups. Despite this, the lack of statistically significant difference was attributed to the insufficient number of patients in Group 3, as well as the high rate of LDH of 64.7% in patients diagnosed with EBV in Group 1. When the groups were compared in terms of uric acid level, a statistically significant difference was found, that is, uric acid levels were found to be significantly higher in the malignancy group (p:0.004).

When the groups were evaluated according to the chest X-ray findings, a statistically significant difference was found between Group 3, Group 1 and Group 2 when compared in terms of mediastinal LAP.

When the groups were compared in terms of abdominal USG results, no statistically significant difference was found (p>0.05).

When the groups were evaluated in terms of superficial tissue USG results; Lymph nodes of 19 (70.4%) cases in Group 1, 3 (37.5%) cases in Group 2, 4 (50%) cases in Group 3, and 4 (57.1%) cases in Group 4 Its contour was well circumscribed. In group 1, 5 patients diagnosed with EBV, 2 patients diagnosed with CMV and 1 patient diagnosed with HSV-1 had irregular lymph node contour. In group 3, the lymph node contours of two patients with ALL and HL were irregular. In group 4, the lymph node contour of 2 patients diagnosed with pulmonary tuberculosis and 1 patient diagnosed with PFAPA was irregular. When the groups were compared according to the vascular pattern characteristics in color Doppler USG, the difference was not considered statistically significant (p>0.05).

According to the last diagnosis of our 50 patients with peripheral lymphadenopathy, 84% were diagnosed as benign disease, 64.3% of them were male patients. 50% of 8 patients diagnosed with malignant disease were girls, their ages ranged from 2 to 14. There was no statistically significant difference between the groups in terms of age and gender (p: 0.765, p: 0.459).

Figure 12: Distribution of lymphadenopathies with benign etiology according to diagnoses
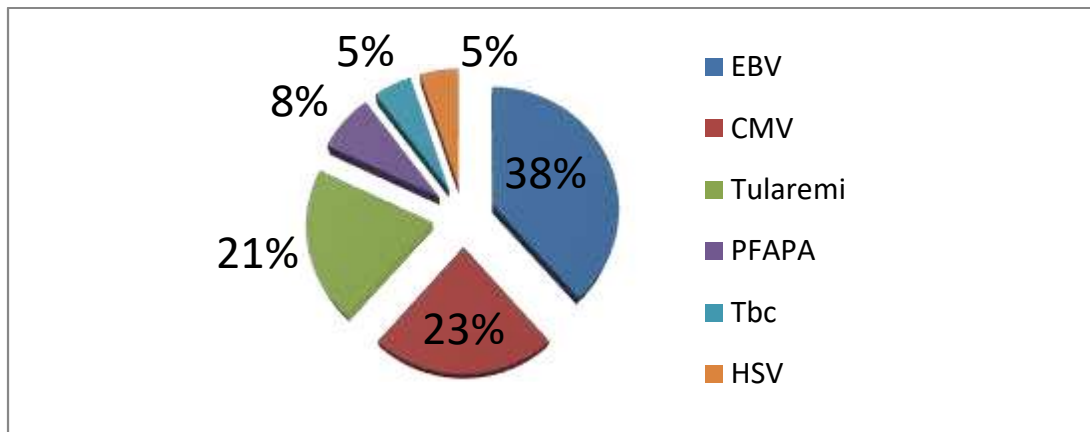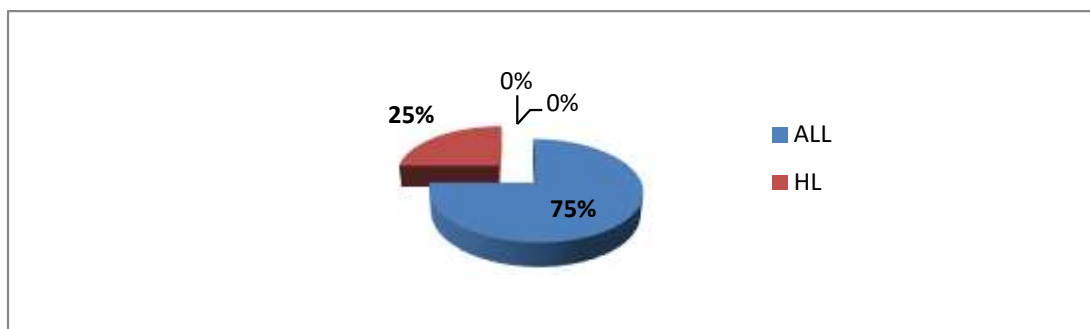
Figure 3: Distribution of lymphadenopathies with malignant etiology according to diagnoses

When the malignant and benign groups were compared in terms of duration, extent, localization and diameter of lymphadenopathy, no statistically significant difference was found (p: 0.441; p=0.119; p>0.05; p:0.097).

When the laboratory tests of the patients with lymphadenopathy diagnosed with benign disease were evaluated, 3 (60%) of 5 patients with anemia and 4 (57.1%) of 7 patients with thrombocytopenia were in the malignant group, and the rate was significantly higher than in the benign group. In the comparison, both differences were found to be statistically significant (p:0.024, p:0.008). In the peripheral blood smear, Downey cells consisting of atypical monocytes and lymphocytes were found to be significantly higher in cases with benign lymphadenopathy compared to the malignant group, and a statistically significant difference was found (p:0.023, 0.028). All cases with high uric acid levels were included in the malignancy group, and it was determined that this created a statistically significant difference (p: 0.002).

When the superficial tissue and mass in the two groups of lymph nodes were compared in terms of color Doppler USG results, it was observed that there was a statistically significant difference in lymph node echogenicity in the direction of hyperechogenicity in lymph nodes with malignant etiology, and in lymph node perfusion, in the lymph nodes with malignant etiology, there

was a statistically significant difference (p: 0.078, p: 0.007, p: 0.005). Significant findings as a result of the comparison of malignant and benign lymphadenopathies are given in Table 5.

Table 5: Significant findings as a result of the comparison of malignant and benign lymphadenopathies.

Feature	Benignn/%	Malignn/%	p
lymphadenopathy consistency Hard Soft Tyre	20/ 95,2 18/ 85,7 4/50	1/ 4,8 3/ 14,3 4/ 50	0,022
Hemogram Anemia Thrombocytopeni	2/4,8 3/7,1	3/37,5 4/50	0,024 0,008
Uric acid Normal High	32/ 76,2 0/0	4/ 50 3/ 37,5	0,002
Lung X-ray Normal Mediastinal enlargement	39 / 92,9 3 / 7,1	5/ 62,5 3/ 37,5	0,044
Abdominal USG Normal HM SM HSM	34/ 81 4/9,5 2/ 4,8 2/ 4,8	4/50 0/0 0/0 4/50	0,014
Doppler USG echogenicity hypoechoic hyperechoic	38/90 1 / 2,3	6/75 2/25	0,007
Doppler USG Vaskülarite vascularity Central Peripheral central+peripheral avascular	30/71,4 0/0 7/16,6 4/9,5	4/50 3/37,5 1/12,5 0/0	0,005

4. Discussion

After all evaluations, benign causes were found in the etiology of lymphadenopathy in 84% of 50 patients, while malignant causes were detected in 16%. In the study of Dağdemir et al. (9); 72.4% benign; In the study of Oğuz et al. (10), 75.7% was benign; In the study of Kumral et al. (11), 70% were benign; In the study of Vargas et al. (12), 53.4% were malignant; In the study of Yaris et al. (13); Benign causes were found in 76.6% of them. In our study, viral infections had the highest rate in benign etiology and EBV was the first, which was consistent with the majority of studies in the literature. In most of the studies in the literature, tularemia was not found to be a factor in the etiology of lymphadenopathy, while it was found to be 1.6% in the study of Dağdemir et al (9)., whereas the rate of tularemia cases in our study was 16%. We could not comment on the fact that the high rate in our study may be related to the endemic nature of tularemia in the Zonguldak region, but we think that it reveals that it is a disease that should be considered and investigated.

The age and gender of the patients can also guide us. In the study of Tekgül et al. (14), 73.2% of the cases were male and 26.72% were female, and the mean age was 6.92 ± 3.39 years. In the study of Kumral et al. (11), 72.5% were boys, 27.5% were girls, and the mean age was 7.67 ± 4.59. In the study of Racing et al. (13), 58% were boys, 42% were girls, and the mean age was 86.3 ± 5.7 months. In the study of Oğuz et al. (10), 63% were boys, 37% were girls, and the age range was 2 months-19 years. Among the cases presenting with lymphadenopathy in the literature, the number of boys (between 58-73%) was higher than girls. The distribution of our cases according to age and gender was consistent with the literature. Although group 4 differed from other groups due to the absence of female patients, there was no statistically significant difference between the groups in terms of gender and mean age (p:0.344, p:0.184).

When lymphadenopathies are evaluated according to the time of emergence; Lymph nodes lasting less than 4 weeks were considered acute, while those lasting longer than 4 weeks were considered chronic lymphadenopathy. While infectious causes grow rapidly, the most important causes of chronic lymphadenitis lasting longer than 4 weeks include cat scratch disease, mycobacterial infections and toxoplasma infections. In Hodgkin lymphoma and NHL, the history may extend up to months (15). In the study of Kumral et al. (11), it was found that 75% of the patients with malignant lymphadenopathy were chronic, and 39.2% of the patients with benign lymphadenopathy. The difference between the two groups in terms of duration of lymphadenopathy was statistically significant (p<0.05). In the study of Oğuz et al. (10), the duration of lymphadenopathy was chronic in 96.4% of patients with malignant lymphadenopathy, and the duration of lymphadenopathy was found to be chronic in 61.8% of

patients with benign lymphadenopathy, the difference was statistically significant (p>0.05). In the study of Albert et al. (16), the duration of lymphadenopathy was found to be less than 6 weeks in 21.1% of 19 cases, between 6 weeks and 3 months in 47.4%, and over 3 months in 31.6%. In the prospective study of Tekgül et al. (14), the malignant-benign distinction of lymphadenopathy duration was not associated with the duration of lymphadenopathy. As these results showed, the probability of being diagnosed with malignant disease was increased in cases with a history of more than 4 weeks in the literature. In our study, the duration of lymphadenopathies in Group 2, which was formed by the tularemia group, was chronic at a rate of 75%, they had a history of long-term nospecific antibiotic treatment, and the duration of lymphadenopathy longer than 4 weeks was thought to be associated with the delay in diagnosis. However, the statistically insignificant difference was attributed to the insufficient number of patients (p>0.05). In our study, unlike the literature, the rate of cases with chronic history in the group diagnosed with malignant disease was the same as the rate of cases with acute history. It was thought that this situation was due to the fact that more than half of the cases in the malignant disease group consisted of cases with a diagnosis of ALL. We found no difference between the groups in terms of the duration of lymphadenopathy (p>0.05).

While lymphadenopathies are evaluated according to the degree of prevalence; Lymphadenopathy occurring in a single anatomical region or adjacent lymph node regions is considered regional lymphadenopathy, while lymphadenopathy in two or more non-adjacent lymph node regions is defined as diffuse lymphadenopathy (17). The localization of lymphadenopathies can help us in diagnosing malignant or benign disease. While approximately half of the masses located in the posterior triangle of the neck are malignant tumors, the masses in the anterior triangle are usually benign. Supraclavicular lymphadenopathy should always be considered pathological. In the study of Yaris et al. (13), regional lymphadenopathy was found in 52% of the cases and diffuse lymphadenopathy in 48%. The most common site of involvement was the submandibular region (36.7%). In the study of Oğuz et al. (10), regional lymphadenoapthy was found in 42.2% of the cases and diffuse lymphadenoapthy in 57.8%. In the study of Kumral et al. (11), regional lymphadenopathy was found in 60.5% of the cases and generalized lymphadenopathy in 39.5%. In addition, it was observed that the most common localization in the benign and malignant groups was the cervical region. In the study of Karadeniz et al. (18), LAP was found in a single lymph node region in 138 patients, 2 or 3 lymph node regions in 171 patients, and 4 or more lymph node regions in 73 patients. In our study, when the cases were evaluated in terms of the extent of lymphadenopathy, 80% regional and 20% diffuse lymphadenopathy were found. In cases with

regional lymphadenopathy, the most common localization was the cervical region, and in cases with diffuse lymphadenopathy, the most common location was the involvement of the cervical and submandibular regions. The most common involvement of the cervical region in cases with regional lymphadenopathy was consistent with the literature. It was observed that widespread involvement was more common in the group diagnosed with malignant disease compared to the benign group, which was consistent with the literature. However, there was no statistically significant difference between the two groups due to the insufficient number of patients in the group diagnosed with malignant disease (p=0.119). It was observed that the most common localization in both groups was the cervical region.

Lymphoid tissue increase continues until the age of 12 with recurrent antigenic stimuli in lymph nodes that are unclear in the neonatal period (1, 4, 5). During the physical examination performed for control purposes, lymph nodes can be palpated in 56% of healthy children, and they undergo atrophic change after puberty (6, 7, 8). In childhood, lymph nodes larger than 1 cm in the cervical, axillary, epitrochlear, occipital, postauricular region 0.5 cm, 1.5 cm in the inguinal region and mediastinum, and 2 cm in the abdomen are considered pathological, while all lymph nodes that are palpated in the supraclavicular region are considered pathological. (19). In the study of Kumral et al. (11), the diameter of lymphadenopathies was found to be less than 1 cm in 28% of the cases, between 1-3 cm in 41.5%, and over 3 cm in 30.5%. While the size of lymphadenopathy was less than 3 cm in 81.4% of patients with benign lymphadenopathy, the diameter of lymphadenopathy was found to be above 3 cm in 58.3% of malignant cases. In the study of Oğuz et al. (10); the diameter of lymphadenopathy was found to be less than 1 cm in 21.9% of the cases, between 1-3 cm in 32.2%, and over 3 cm in 46%. No lymphadenopathy below 1 cm was detected in the malignant group. In the study of Albert et al. (16), the diameter of lymphadenopathy was found to be less than 3 cm in 78.9%, and over 3 cm in 21.1%. In our study, it was observed that the highest lymph node diameter was in the tularemia group. Unlike the literature; In the malignant group, the rate of cases with lymphadenopathy less than 3 cm in diameter was 75%. In the benign group, the rate of cases with lymph node diameter less than 3 cm was 66.6%. Although the difference between them was not statistically significant, those with lymphadenopathy greater than 3 cm were more in number and percentage than the malignant group (p:0.097). In the benign group, the majority of cases with lymphadenopathy greater than 3 cm in diameter consisted of cases with a diagnosis of tularemia.

The palpation feature of lymphadenopathies may guide us in the diagnosis. While there is pain-tenderness and hyperemia due to stretching of the capsule in lymphadenitis developing

due to acute bacterial infections and only in rapidly growing lymph nodes, pain-sensitivity is generally not seen in lymph node enlargements due to malignancy (15). In the study of Oğuz et al. (10), firm and fixed lymphadenopathy was found in 29.3% of the cases. In 29.5% of the cases, it was accompanied by an increase in locus. A statistically significant difference was found between the two benign and malignant groups. In the study of Köksal et al., 59.2% of lymphadenopathies were firm and 89% were mobile. There was no statistically significant difference between the benign and malignant groups. In the study of Çorapçıoğlu et al. (20), the lymph nodes were hard or rubbery in 28.5% of malignant cases. In benign cases, 5.2% of the lymph nodes were hard and rubbery. When analyzed in terms of factors that determine the risk of malignancy, it was determined that a hard or rubbery lymphadenopathy increased the risk of malignancy 166 times. In our study, it was seen that it was compatible with the study of Çorapcıoğlu et al., but different from the study of Oğuz et al. and Köksal et al. The characteristic of rubbery lymph node was higher in the malignancy group. When the groups were compared statistically, this difference was found to be significant (p:0.022). No statistically significant difference was found in terms of mobilization of lymph nodes, accompanying pain, redness and temperature increase in the comparison between the two malignant and benign groups.

Systemic symptoms and findings accompanying lymphadenopathy can guide us in the differential diagnosis, therefore, they are important. Fever of unknown cause exceeding 38°C for three consecutive days, weight loss of more than 10% of unknown cause in the last 6 months before diagnosis, and excessive sweating at night in children without a focus of infection may be associated with B symptoms of Hodgkin lymphoma (4, 21, 22). In the study of Oğuz et al. (10), 24.3% of malignant cases had night sweats and 30.6% had weight loss, while 5.5% of benign cases had night sweats and 3.5% had weight loss. he was doing. These symptoms were significantly higher in the malignant group than in the benign group. In the study conducted by Çorapcıoğlu et al. (20), lymphadenopathy was accompanied by fever in 11.6% of the cases, weight loss in 6.5% and night sweats in 3.2% (23). In our study, there was no statistically significant difference between the groups in terms of symptoms of fever, weight loss and night sweats, and between the groups with a diagnosis of malignant-benign disease, similar to the study of Oğuz et al. This was thought to be due to the low number of cases in the malignant disease group.

In our study, 26 out of 50 cases (5%) had a history of drinking well water and 20 (40%) had a history of animal contact. When the groups were compared according to the history of

water and animal contact used, it was found that both stories were significantly higher in Group 2, which consisted of tularemia cases, compared to the other groups (p: 0.007/ 0.008).

In cases presenting with peripheral lymphadenopathy; If the differential diagnosis of lymphadenopathy cannot be made clinically after a good history and physical examination to determine the etiology, the diagnosis should be made with laboratory tests. First, complete blood count and peripheral smear should be performed, and when anemia is detected, chronic infection should be considered in addition to a disease involving the bone marrow. If the hemoglobin and platelet counts are low, and the white blood cell counts are high or low, the bone marrow is more likely to be infiltrated. Although there are studies emphasizing that the presence of leukocytosis or leukopenia, thrombocytopenia and anemia, and in addition to these, the increase in ESR and CRP is a clue for malignancies; There are also studies stating that blood count, peripheral smear, and high ESR and CRP are not helpful in the differential diagnosis of malignant-benign disease (16, 24). In the study of Dağdemir friends (9), anemia was found to be 51% in cases diagnosed with malignant disease and 28.5% in cases diagnosed with benign disease, and it was found to be statistically significant. In the study of Yaris et al. (13), it was found that only LDH elevation was higher in malignant LAPs. In the study of Oğuz et al. (10), it was found that increased erythrocyte sedimentation rate, elevated CRP and LDH ratio were higher in patients with LAP with malignant etiology. In the study of Kumral et al. (11), a significant difference in favor of malignancy was found between benign and malignant cases when compared in terms of leukopenia and ESR (anemia, thrombocytopenia, leukocytosis, mediastial or hilar lymphadenopathy). In our study, 3 (60%) of 5 patients with anemia and 4 (57.1%) of 7 patients with thrombocytopenia were in the malignant group, and the rate was significantly higher than in the benign group. When the groups diagnosed with malignant and benign diseases were compared in terms of hemaglobulin and thrombocyte values, it was thought that the statistically significant difference between them was due to the fact that most of the cases in the malignancy group were diagnosed with ALL (p:0.024, p:0.008). In the peripheral blood smear, Downey cells consisting of atypical monocytes and lymphocytes were found to be statistically significantly higher in cases with benign lymphadenopathy compared to the malignant group, and it was thought that the reason for the significant difference might be due to the high number of cases with EBV diagnosis in the benign group (p:0.023, 0.028). High uric acid and lactate dehydrogenase is one of the factors indicating a high probability of tumor lysis in patients with ALL and lymphoma and is associated with tumor burden (4, 25). In our study, uric acid and LDH were higher in malignancy-related diseases compared to benign

patients, but there was a statistically significant difference between the two groups only in terms of uric acid elevation (p:0.002). In the group of patients with benign diagnosis, 12 out of 15 patients with EBV diagnosis had elevated LDH, infectious mononuleosis, which is one of the common viral diseases in lymphadenopathy etiology, and lymphadenopathy features that sometimes cause problems in diagnosis between leukemia and infection, and physical examination findings such as hepatosplenomegaly and anemia. suggested that, in addition to laboratory findings such as thrombocytopenia, leukopenia or leukocytosis, elevated LDH may be present in both diseases and it would not be very accurate to use them in the differential diagnosis. Consistent with the studies, anemia, thrombocytopenia, LDH and uric acid elevation were found to be higher in the malignant group, but no difference was found between the malignant and benign groups in sedimentation and CRP values.

Two-way chest X-ray should be taken for peripheral lymphadenopathy, mediastinal lymphadenopathy and other reasons. In the study of Yaris et al. (13), mediastinal lymphadenopathy was found to be associated with malignancy. In the study of Çorapcıoğlu et al. (20), mediastinal/hilar lymphadenopathy was detected in 42.8% of cases with malignancy; In the study of Dağdemir et al. (9), the rate of mediastinal lymphadenopathy was higher in patients diagnosed with malignant disease. In our study, the rate of mediastinal enlargement on chest X-ray was higher in the malignancy group, consistent with Yaris et al., Çorapcıoğlu et al., Dağdemir et al. (p:0.044).

Whole abdominal USG was performed to determine whether hepatomegaly, splenomegaly, space-occupying mass and mesenteric lymphadenopathy were accompanied in the cases we followed up for lymphadenopathy. When the two groups with malignant and benign etiology were compared in terms of all abdominal USG results, it was found that there was a statistically significant difference, and the rate of hepatomegaly-splenomegaly on abdominal USG was higher in the malignant group (p:0.014, 0.09).

The vascular features of the enlarged lymph nodes are evaluated by Doppler USG and may help in the differentiation of malignant LAP. In Doppler USG, the dimensions, shape and internal structure of the LAP (non-visible hilum, intranodal necrosis and calcification) are evaluated. While slow flow patterns are observed in the hilar region in normal lymph nodes in CDUS, diffuse hypervascularization is observed in lymph nodes due to malignancy (26-28). In the study of Yaris et al. (13), the L/T ratio was found to be less than 2 in 85% of metastatic lymph nodes, and greater than 2 in 74% of benign lymphnodes, while it was found to be greater than 2 in 14% of lymphomas. In the study of Arji et al. (29), while there was hilar

vascularization in nonmetastatic lymph nodes, peripheral vascularization rather than hilar region was defined in metastatic lymph nodes. Steinkamp et al. (30) showed that while predominantly hilar blood flow was observed in nonmetastatic lymph nodes, increased peripheral blood flow was observed in metastatic lymph nodes, and these results indicated that increased parenchymal blood flow was an effective clinical clue that largely confirmed lymph node metastasis. When our study was compared in terms of color Doppler USG results of superficial tissue and mass performed on two groups of lymph nodes; While there was no statistically significant difference in terms of lymph node contour, it was seen that there was a statistically significant difference in terms of lymph node echogenicity in that the rate of hyperechogenicity in lymph nodes with malignant etiology, and the rate of peripheral blood supply in lymph nodes with malignant etiology was high in lymph node perfusion (p: 0.078, p: 0.007, p: 0.005).

Bone marrow aspiration should be performed quickly before lymph node biopsy in patients with severe anemia, leukopenia, thrombocytopenia, or lymphadenopathy with atypical lymphocytes and/or blastic cells in the peripheral smear, which cannot be concluded with other diagnostic methods (31, 32,). In our study, blastic cell infiltration compatible with ALL was found in 5 of 8 cases who underwent bone marrow aspiration for diagnostic purposes with a pre-diagnosis of malignancy.

In our study, when the cases were grouped according to their final diagnosis, we found that the number of cases diagnosed with tularemia was higher than the rates reported in the literature. We evaluated the history, physical examination and laboratory findings separately, with the thought that it may contribute to more consideration of the pre-diagnosis of tularemia in cases with more common features in this group.

5. Conclusion and Recommendations

In cases presenting with peripheral lymphadenopathy, it was determined that after a detailed history and careful physical examination, it should be decided whether lymphadenopathy is a sign of a serious disease. Peripheral smear should be carefully evaluated in anemia and thrombocytopenia to be detected in the complete blood count, which is one of the first tests to be performed in cases where a specific infection or serious disease is suspected. It has been determined that LDH, which we expect to be high in malignant diseases, especially in leukemia and non-Hodgkin's lymphomas, may also be high in viral infections such as EBV and may cause confusion in determining malignant-benign etiology. It has been shown that

chest X-ray, abdominal USG, superficial tissue and Doppler USG can be helpful in distinguishing malignant or benign etiologies in required patients. Tularemia, which has been frequently detected in the etiology of neck lymphadenitis in our country in recent years, should be excluded in painful and large cervical lymphadenopathies that do not improve despite antibiotic treatment in our region and other regions known to be endemic. If a specific diagnosis cannot be reached and the size of the lymphadenopathy does not regress despite the examinations and treatments applied, further investigations and lymph node biopsy should be performed to establish the definitive diagnosis without wasting time.

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ASLI GİBİDİR

Doç. Dr. Zehra KURÇER
ZKÜ Tıp Fakültesi
Etik Değerlendirme Komisyon Başkanı

THE IMPACT OF ROHIFOLIN ON THE MODULATION OF GLUCOSE AND INFLAMMATORY MARKERS IN STREPTOZOTOCIN-INDUCED DIABETIC RATS

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ABSTRACT

Diabetes mellitus (DM) is an endocrine metabolic disorder and is characterized by high persistent glucose that affects insulin action, insulin secretion, or both. Lipids, steroids, carbohydrates, glycosides, peptides, alkaloids, and flavonoids are commonly plant-based bioactive compounds that are known for their hypoglycemic effects. Rohifolin flavonoid contains phenolic hydroxyl groups that mediate its antioxidant activity and anti-inflammatory properties. In the present study, the antidiabetic activity of rohifolin was evaluated via conducting in vivo trial using Wistar rats. In this study, 30 albino rats were used and kept on a routine diet. These rats were randomly divided into 4 groups, each group having 6 rats. Group I was normal to control; group 2 was positive control, group 3 was standard treated with the drug metformin (250 mg/kg/BW), group 4 was kept as treatment group treated with rohifolin (10 mg/kg BW) after induction of diabetes with streptozotocin. The antidiabetic and anti-inflammatory activities of rohifolin were evaluated by biochemical and histopathological analysis. The effects of rohifolin on fasting plasma glucose, serum glucose, plasma insulin, and HOMA-IR were evaluated. The HOMA-IR approximates insulin resistance. Lipid profile (TC, TG, LDL, HDL, VLDL), antioxidant markers (SOD, CAT, LPO, GPX), and anti-inflammatory markers (IL-6, TNF-alpha) were also assessed on serum samples. Rats injected with streptozotocin showed hyperglycemia after the injection, and elevated levels of lipidemic and oxidative stress markers.

Key words: Diabetes mellitus (DM), flavonoids, anti-inflammatory, antidiabetic, HOMA-IR

THE IMPACT OF THERAPEUTIC EFFECTS OF YOGA AND ITS ABILITY TO INCREASE QUALITY OF LIFE

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ABSTRACT

The objective of this study is to assess the findings of selected articles regarding the therapeutic effects of yoga and to provide a comprehensive review of the benefits of regular yoga practice. As participation rates in mind-body fitness programs such as yoga continue to increase, it is important for health care professionals to be informed about the nature of yoga and the evidence of its many therapeutic effects. Thus, this manuscript provides information regarding the therapeutic effects of yoga as it has been studied in various populations concerning a multitude of different ailments and conditions. Therapeutic yoga is defined as the application of yoga postures and practice to the treatment of health conditions and involves instruction in yogic practices and teachings to prevent reduce or alleviate structural, physiological, emotional and spiritual pain, suffering or limitations. Results from this study show that yogic practices enhance muscular strength and body flexibility, promote and improve respiratory and cardiovascular function, promote recovery from and treatment of addiction, reduce stress, anxiety, depression, and chronic pain, improve sleep patterns, and enhance overall well-being and quality of life.

Keywords: Alternative therapy, depression, pain, quality of life, therapeutic yoga

INTRODUCTION

A 3,000 year old tradition, yoga, is now regarded in the Western world as a holistic approach to health and is classified by the National Institutes of Health as a form of Complementary and Alternative Medicine (CAM). The word "yoga" comes from a Sanskrit root "yuj" which means union, or yoke, to join, and to direct and concentrate one's attention. Regular practice of yoga promotes strength, endurance, flexibility and facilitates characteristics of friendliness, compassion, and greater self-control, while cultivating a sense of calmness and well-being. Sustained practice also leads to important outcomes such as changes in life perspective, self-awareness and an improved sense of energy to live life fully and with genuine enjoyment. The practice of yoga produces a physiological state opposite to that of the flight-or-fight stress response and with that interruption in the stress response, a sense of balance and union between the mind and body can be achieved.

Yoga is a form of mind-body fitness that involves a combination of muscular activity and an internally directed mindful focus on awareness of the self, the breath, and energy. Four basic principles underlie the teachings and practices of yoga's healing system. The first principle is the human body is a holistic entity comprised of various interrelated dimensions inseparable from one another and the health or illness of any one dimension affects the other dimensions. The second principle is individuals and their needs are unique and therefore must be approached in a way that acknowledges this individuality and their practice must be tailored accordingly. The third principle is yoga is self-empowering; the student is his or her own healer. Yoga engages the student in the healing process; by playing an active role in their journey toward health, the healing comes from within, instead of from an outside source and a greater sense of autonomy is achieved. The fourth principle is that the quality and state of an individuals mind is crucial to healing. When the individual has a positive mind-state healing happens more quickly, whereas if the mind-state is negative, healing may be prolonged.

Yoga philosophy and practice were first described by Patanjali in the classic text, Yoga Sutras, which is widely acknowledged as the authoritative text on yoga. Today, many people identify yoga only with asana, the physical practice of yoga, but asana is just one of the many tools used for healing the individual; only three of the 196 sutras mention asana and the remainder of the text discusses the other components of yoga including conscious breathing, meditation, lifestyle and diet changes, visualization and the use of sound, among many others. In Yoga Sutras, Patanjali outlines an eightfold path to awareness and enlightenment called ashtanga, which literally means "eight limbs".

The eight limbs are comprised of ethical principles for living a meaningful and purposeful life; serving as a prescription for moral and ethical conduct and self-discipline, they direct attention towards one's health while acknowledging the spiritual aspects of one's nature. Any of the eight limbs may be used separately, but within yoga philosophy the physical postures and breathing exercises prepare the mind and body for meditation and spiritual development. Based on Patanjali's eight limbs, many different yogic disciplines have been developed. Each has its own technique for preventing and treating disease. In the Western world, the most common aspects of yoga practiced are the physical postures and breathing practices of Hatha yoga and meditation. Hatha yoga enhances the capacity of the physical body through the use of a series of body postures, movements (asanas), and breathing techniques (pranayama). The breathing techniques of Hatha yoga focus on conscious prolongation of inhalation, breath retention, and exhalation. It is through the unification of the physical body, breath, and concentration, while performing the postures and movements that blockages in the energy channels of the body are cleared and the body energy system becomes more balanced. Although numerous styles of Hatha yoga exist, the majority of studies included in this manuscript utilized the Iyengar style of yoga. The Iyengar method of Hatha yoga is based on the teachings of the yoga master B.K.S. Iyengar. Iyengar yoga places an emphasis on standing poses to develop strength, stability, stamina, concentration and body alignment. Props are utilized to facilitate learning and to adjust poses and instruction is given on how to use yoga to ease various ailments and stressors.

Yoga is recognized as a form of mind-body medicine that integrates an individual's physical, mental and spiritual components to improve aspects of health, particularly stress related illnesses.

Evidence shows that stress contributes to the etiology of heart disease, cancer, and stroke as well as other chronic conditions and diseases. Due to the fact that stress is implicated in numerous diseases, it is a priority to include a focus on stress management and reduction of negative emotional states in order to reduce the burden of disease. Viewed as a holistic stress management technique, yoga is a form of CAM that produces a physiological sequence of events in the body reducing the stress response. The scientific study of yoga has increased substantially in recent years and many clinical trials have been designed to assess its therapeutic effects and benefits.

As participation rates in mind-body fitness programs such as yoga continue to increase, it is important for health care professionals to be informed about the nature of yoga and the evidence of its many therapeutic effects. Thus, this review of the literature is timely and important and provides information regarding the therapeutic effects of yoga in various populations concerning a multitude of different ailments and conditions. Therapeutic yoga is defined as the application of yoga postures and practice to the treatment of health conditions. Yoga therapy involves instruction in yogic practices and teachings to prevent reduce or alleviate structural, physiological, emotional and spiritual pain, suffering or limitations. Yogic practices enhance muscular strength and body flexibility, promote and improve respiratory and cardiovascular function, promote recovery from and treatment of addiction, reduce stress, anxiety, depression, and chronic pain, improve sleep patterns, and enhance overall well-being and quality of life.

METHODS

In order to locate research studies and interventions that examined the therapeutic effects of yoga, databases were searched through Google Scholar via a universities web browser. Initially, the following key words were entered into the database via the advanced search option: "yoga," and "therapeutic effects." This search was conducted to obtain general information regarding yoga's therapeutic effects in the existing literature. Subsequently, a second search was conducted using the following key words or exact phrases, "hatha yoga," "therapeutic effects of yoga," "stress," "anxiety, "depression," "pain," and "chronic disease." The following criteria were used for including studies in this review: (1) the article had to be peer reviewed, (2) published between the years 1990 and 2009, (3) the intervention had to incorporate some form of yoga and/ or meditation, and (4) effects of yoga on some outcome were measured.

In order to select the articles included in this manuscript, several steps were taken. First, the title was read. If the article appeared appropriate to the examination of the therapeutic effects of yoga, it was saved to a folder. The articles describing interventions that utilized yoga as a means to achieve some health outcome were chosen for further review. Each of the articles chosen were then thoroughly read and reviewed. The articles chosen include a broad spectrum of the benefits, application, and therapeutic effects of yoga.

RESULTS

Mental health problems such as depression, anxiety, stress, and insomnia are among the most common reasons for individuals to seek treatment with complementary therapies such as yoga. Yoga encourages one to relax, slow the breath and focus on the present, shifting the balance from the sympathetic nervous system and the flight-or-fight response to the parasympathetic system and the relaxation response. The latter is calming and restorative; it lowers breathing and heart rate, decreases blood pressure, lowers cortisol levels, and increases blood flow to the intestines and vital organs.

One of the main goals of yoga is to achieve tranquility of the mind and create a sense of well-being, feelings of relaxation, improved self-confidence, improved efficiency, increased attentiveness, lowered irritability, and an optimistic outlook on life The practice of yoga generates balanced energy which is vital to the function of the immune system. Yoga leads to an inhibition of the posterior or sympathetic area of the hypothalamus. This inhibition optimizes the body's sympathetic responses to stressful stimuli and restores autonomic regulatory reflex mechanisms associated with stress. Yogic practices inhibit the areas responsible for fear, aggressiveness and rage, and stimulate the rewarding pleasure centers in the median forebrain and other areas leading to a state of bliss and pleasure. This inhibition results in lower anxiety, heart rate, respiratory rate, blood pressure, and cardiac output in students practicing yoga and meditation.

Consistent yoga practice improves depression and can lead to significant increases in serotonin levels coupled with decreases in the levels of monoamine oxidase, an enzyme that breaks down neurotransmitters and cortisol. A range of therapeutic approaches is available for the management of depressive disorders, but many patients turn to complementary therapies due to the adverse effects of medication, lack of response or simply preference for the complementary approach. A number of studies demonstrate the potential beneficial effects of yoga interventions on depression, stress, and anxiety.

Improved flexibility is one of the first and most obvious benefits of yoga. With continued practice comes a gradual loosening of the muscles and connective tissues surrounding the bones and joints; this is thought to be one reason that yoga is associated with reduced aches and pains. Yoga helps to build muscle mass and/ or maintain muscle strength, which protects from conditions such as arthritis, osteoporosis and back pain. During a yoga session, the joints are taken through their full range of motion, squeezing and soaking areas of cartilage not often used and bringing fresh nutrients, oxygen and blood to the area, which helps to prevent conditions like arthritis and chronic pain. Without proper sustenance, neglected areas of cartilage will eventually wear out and expose the underlying bone. Numerous studies have shown that asana, meditation or a combination of the two reduced pain in people with arthritis, Carpel Tunnel syndrome, back pain and other chronic conditionsYoga also increases proprioception and improves balance.

Yoga increases blood flow and levels of hemoglobin and red blood cells which allows for more oxygen to reach the body cells, enhancing their function. Yoga also thins the blood which can decrease the risk of heart attack and stroke, as they are often caused by blood clots. Twisting poses wring out venous blood from internal organs and allow oxygenated blood to flow in when the twist is released. Inverted poses encourage venous blood flow from the legs and pelvis back

to the heart and then pumped through the lungs where it becomes freshly oxygenated. Many studies show yoga lowers the resting heart rate, increases endurance, and can improve the maximum uptake and utilization of oxygen during exercise Consistently getting the heart rate into aerobic range lowers the risk of heart attack. While not all yoga is aerobic, even yoga exercises that do not increase heart rate into the aerobic range can improve cardiovascular functioning.

While yoga is not a cure for a cancer, nor a definitive way of preventing it, yoga increases physical, emotional and spiritual wellness, and brings about a certain peace, of which many cancer patients desire. Yoga, breathing exercises, and meditation can reduce stress, promote healing, and enhance quality of life for patients with cancer The growth of tumors and other cancer indicators are exacerbated by stress, thus it is especially important for people with cancer to reduce and manage stress effectively. Several premises exist as rationale for applying yoga-based interventions with cancer patients. Research suggests that yoga can produce an invigorating effect on mental and physical energy that improves fitness and reduces fatigue. Additionally, when practicing yoga, a fundamental emphasis is placed on accepting one's moment-to-moment experiences creating mindfulness and not forcing the body past its comfortable limits. Having this healthy sense of acceptance is especially important for individuals dealing with life-threatening illness as it decreases the stress one experiences from unpleasant symptom logy. Initially, cancer patients likely benefit from the poses themselves which are designed to exercise each and every muscle, nerve and gland throughout the body. The postures precisely address the tension, holding, and blockage of energy in any particular joint or organ. As this tension is released, energy flows more readily throughout the body and allows patients to experience a sense of increased well-being and strength as well as a balance of mind, body and spirit.

While stimulation is good, too much taxes the nervous system and yoga provides relief from excess stimulation and the stressors and hectic nature of modern life. Restorative postures, savasana, pranayama, and meditation encourage pratyahara, a turning inward of the senses which enables downtime for the nervous system, the byproduct often being improved sleep. Pharmacological treatment of insomnia is often associated with hazardous side effects such as states of confusion, psychomotor performance deficits, nocturnal falls, dysphoric mood, impaired intellectual functioning and daytime sleepiness, especially in older adults. Therefore, alternative forms of therapy for improving sleep are becoming utilized more frequently. These alternative therapeutic approaches can be generally classified into three categories: behavioral based educative methods (e.g. avoiding caffeine or other stimulants before bedtime), relaxation techniques (e.g. progressive muscular relaxation, yoga, and meditation) and formal psychotherapy. Because of its ability to increase relaxation and induce a balanced mental state, yoga has been studied to evaluate its possible effects on sleep and insomnia.

In summary, stress has a negative impact on the immune system and prolonged exposure increases susceptibility to disease and leads to physical and mental health problems such as anxiety and depression Practicing yoga and meditation as a means to manage and relieve both acute and chronic stress helps individuals overcome other co-morbidities associated with diseases and leads to increased quality of life. As a non-pharmacological form of treatment, yoga

based interventions are an alternative option for the treatment of mood disorders. Further investigation of yoga as a therapeutic intervention in depressive disorders is needed and future studies should seek to identify which of the yoga-based interventions is most effective and what levels of severity of depression are more likely to respond to this approach.

In addition to the effects of yoga on mood disorders and stress reduction, yogic practices are shown to improve cardio respiratory performance, psychological profile, and plasma melatonin levels and also significantly reduced systolic blood pressure, diastolic blood pressure, mean arterial pressure, and orthostatic tolerance. Furthermore, yoga helps to improve the cardiovascular efficiency and homeostatic control of the body and results in improvements in autonomic balance, respiratory performance, and overall well-being. Yoga based lifestyle modifications were also shown to aid in regression of coronary lesions as well as to improve myocardial perfusion in patients with CAD. Inevitably, cardiovascular parameters alter as one ages, but these age-related deteriorations in cardiovascular functions are slower in persons who practice yoga regularly as yoga practitioners had lower heart rate as well as lower systolic and diastolic blood pressure than matched controls.

Numerous studies show that asana, meditation or a combination of the two can reduce pain and disability while improving flexibility and functional mobility in people with a number of conditions causing chronic pain

Additionally, in some cases use of pain medication was reduced or eliminated completely. Yoga was also shown to improve gait function and reduce age-related changes in gait among a group of healthy, non-obese elders.

Regarding yoga's effects for cancer patients, results show a decrease in post-chemotherapy-induced nausea frequency, nausea intensity, intensity of anticipatory nausea, and anticipatory vomiting. Additionally, yoga subjects reported decreased anxiety, depression, and distressful symptoms and also showed significantly reduced toxicity scores compared to the controls. Results from another study showed patients experienced significantly lower levels of pain and fatigue, and higher levels of invigoration, acceptance and relaxation following participation in a yoga intervention. Yoga, breathing exercises, and meditation can reduce stress, promote healing, increase energy, decrease adverse treatment effects, and enhance quality-of-life for patients with cancer

Yoga's ability to increase relaxation and induce a balanced mental state was studied to evaluate its effect on sleep quality and improving insomnia. Regular practice of yoga resulted in a significant decrease in the time taken to fall asleep, an increase in the total number of hours slept, and in the feeling of being rested in the morning. Additionally, yoga had a positive influence on sleep patterns in individuals with lymphoma. Furthermore, participation in yoga classes improved self-reported quality-of-life as well as measures of physical function among an elderly population.

According to Buddhist philosophy the roots of addiction are in the mind and the practice of mindful meditation encourages addicts to accept the basic impermanence of human experience and helps them to develop a detached awareness of thoughts. Yoga and meditation practices exert positive influence on addictive behaviors. Through the practice of yoga, addicts shift from self-inflicted harm and disrespect toward their bodies to more respectful, caring, and loving behaviors. Eating disorders are a specific type of addiction and yoga appears to be beneficial in improving body image disturbances and useful in the recovery from eating disorders. One study found that female yoga practitioners attribute their positive feelings and sense of well-being to yoga practice and report less self-objectification, greater satisfaction with physical appearance and fewer disordered eating attitudes compared to non-yoga practitioners.

The findings of the aforementioned studies examining the psychological and physical outcomes of yoga prove difficult to summarize and draw concrete conclusions due to variation in the research designs, differences in the duration and frequency of yoga classes, and differences in the specific yoga programs and populations being studied. Nonetheless, results for the included studies demonstrate many of the numerous therapeutic effects, benefits and profound healing power of yoga.

DISCUSSIONS

Rapidly emerging in the Western world as a discipline for integrating the mind and body into union and harmony, when adopted as a way of life, yoga improves physical, mental, intellectual and spiritual health. Yoga offers an effective method of managing and reducing stress, anxiety and depression and numerous studies demonstrate the efficacy of yoga on mood related disorders.

Currently, treatment for anxiety and depression involves mostly psychological and pharmacological interventions; however, mind-body interventions are becoming increasingly popular as a means to reduce stress in individuals. Yoga, a form of mind-body exercise, has become an increasingly widespread therapy used to maintain wellness, and alleviate a range of health problems and ailments. Yoga should be considered as a complementary therapy or alternative method for medical therapy in the treatment of stress, anxiety, depression, and other mood disorders as it has been shown to create a greater sense of well-being, increase feelings of relaxation, improve self-confidence and body image, improve efficiency, better interpersonal relationships, increase attentiveness, lower irritability, and encourage an optimistic outlook on life.

Researchers are only beginning to understand how disciplines such as yoga promote personal growth, health and well-being. By acknowledging the unity of mind, body and spirit, mind-body fitness programs (i.e. yoga) can assist people in their pursuit of peace, calmness, and greater wholeness and integration in their lives. Health care professionals, health educators and the like, need to be aware of the potential of yoga as an important component of a personal wellness plan.

While no concrete guidelines exist regarding the frequency of practice, the more you practice the more you benefit. Yoga is a personalized practice and as such, frequency and duration are personal questions with individual answers. Practice should happen with wisdom and should be modified to meet individual needs and goals. Individuals should practice as often as possible, especially in the beginning. The length of the induction phase will vary depending on an individual's initial level of fitness and health status; the more difficult yoga is for someone in the beginning the more their body needs it.

While modern medicine has the ability in many cases to heal physical diseases and alleviate psychological disorders, it is argued that a purely medical approach is far less effective in healing the emotional, intellectual, and personality layers of the human entity. The discipline of yoga offers individuals a timeless and holistic model of health and healing and although it may not result in the complete elimination of physical diseases and/ or adverse conditions from the body it offers a holistic path of healing. There exists an indisputable connection between a person's overall physical and mental health and the inner peace and well-being yoga is designed to achieve. Yoga suspends the fluctuations of the mind and by acting consciously, we live better and suffer less.

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THEİLERİA ANNULATA İLE ENFEKTE BİR SIĞIRDA BURUN KANAMASI

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Özet

Bu vaka raporunda *T. annulata* ile enfekte sığırlarda yaygın görülen klinik bulguların dışında nadir görülen burun kanaması oluşan bir sığırda klinik, hematolojik, kan gazı analizi bulgularını ve endoskopik muayene görüntülerini sunmak amaçlanmaktadır.

Bingöl Üniversitesi Hayvan Hastanesi İç Hastalıkları Kliniğine getirilen 3 yaşında, dişi sığırın 15 gündür devam eden iştahsızlık, halsizlik ve 3 gündür burnundan sızıntı şeklinde sürekli kan geldiği bilgisi anamnezde verildi. Fiziksel muayenede iki taraflı burun kanaması, konjuktivada peteşiler, lenf yumrularında çift taraflı genişleme gözlendi. Solunum (24 nefes/dk) sayısı ve kalp frekansının (56 atım/dk) normal sınırlarda olduğu saptandı. Kulak perifer kılcal damarlardan froti yapıldıktan sonra etkenin piroplazm formlarının eritrositler içinde görülmesiyle hastalığın teşhisi konuldu. Hematoloji ve kan gazı analizleri için tekniğine uygun olarak vena jugularisten kan örnekleri alındı. Hematolojik analizlerde ortalama eritrosit hemoglobin (MCHC) artışı dışında bir anormallik tespit edilmedi. Kan gazı analizinde elde edilen bulgular şiddetli hipokalsemi ve hiperlaktatemi dışında referans aralıkta saptandı. Nazal ve oral mukozada endoskopik muayenede tracheobronşial ve orofarenkste şiddetli peteşiyel kanama odakları tespit edildi.

Sonuç olarak burun kanaması görülen bir sığırda ayırıcı tanıda *T. annulata* enfeksiyonunun göz önünde bulundurulması faydalı olacaktır.

Anahtar kelimeler: Theileria annulata, burun kanaması, endoskopi,

- **Giriş**

Theileria spp., yabani ve evcil geviş getiren hayvanları enfekte eden ixodid keneler (R*hipicephalus* , *Amblyomma* , *Hyalomma* ve *Haemaphysalis)* tarafından taşınan hücre içi protozoalardır (Bishop ve ark., 2004). *Theleria spp*. arasında bulunan *Theileria annulata (T. annulata),* tropikal ve subtropikal bölgelerde *Hyalomma* türü keneler tarafından nakledilen lenfoproliferatif karakterde hastalığa neden olan hemoprotozoan bir parazittir (Altay ve Aktaş, 2004, Bishop ve ark., 2004). *T. annulata* yüksek morbidite ve mortalite ile seyretmektedir. Türkiye, Hindistan, Çin gibi hastalığın görüldüğü bölgelerde iki yüz elli milyon sığırın risk altında olduğu tahmin edilmektedir (Chauhan ve ark., 2015; Erdemir ve ark., 2012).

Theileria parazitlerinin sporozoitleri kene sığırdan kan emdiği sırada konakçıda mononükleer hücreleri (makrofajlar/monositler ve B lenfositler) hızla istila ederek vücuda girer

(d'Oliveira ve ark., 1995; Çöl ve Uslu, 2007). Etkenler mononükleer lökositlerde makroşizontlara dönüşür ve konakçı hücrenin proliferasyonunu indüklerler. Makroşizontlar daha sonra meragoni yoluyla mikroşizotlara ve sonunda lökositten salınan merozoitlere dönüşür. Merozoitler eritrositleri istila eder ve piroplazm formu gelişir (Morrison ve ark., 1981; Ullah ve ark., 2021). Hastalığın teşhisi giemsa ile boyanmış lenf nodu aspiratı ve periferik kan frotisinde mikroskobik incelemede piroplazmal formların tespit edilmesiyle doğrulanmaktadır (Omer ve ark., 2003; Fartashvand ve ark., 2013). Bunun yanı sıra PCR (Ma ve ark., 2020), indirekt floresan antikor testi (IFAT) ve enzim bağlantılı immünosorbent (ELISA) gibi analiz yöntemleriyle de hastalık teşhis edilebilmektedir (Bakheit ve ark., 2004).

T. annulata enfeksiyonu klinik olarak akut, subakut ve kronik seyir izlemektedir (Branco ve ark., 2010; Alsaad ve ark., 2013). Hastalığın şiddetini kenenin tükürük bezinden salınan sporozoit miktarı, konağın immun sistemi, aşılama durumu ırk, mevsim, gibi faktörlerin etkilediği ifade edilmektedir (Ahmed ve Mehlhorn, 1999; Inci ve ark., 2007). *T. annulata* ile enfekte hayvanlarda yüzeysel lenf düğümlerinde tek taraflı veya çift taraflı büyüme, anemi, vücut sıcaklığında artış, ekzoftalmi, konjonktiva ve/veya deri yüzeyinde peteşiyal kanamalar, anemik ve/veya ikterik mukoza zarları, lakrimasyon, solunum güçlüğü görülmektedir (Alsaad ve ark., 2013; Ceylan ve ark., 2021). Theileriada yaygın görülen patolojik bulgular arasında nekropside akciğer, dalak ve abomazumun mukozal ve serozal yüzeylerinde (Oryan ve ark., 2013; Ma ve ark., 2020), perikarda ve intestinal kanalda ödem, peteşiyal ve ekimotik kanamalar şekillendiği ifade edilmektedir (Ma ve ark., 2020). Yangısal durumlarda salınan tümör nekroz faktörü alfa, interlökin-1 ve interlökin-6 gibi sitokinlerin ve şizontlarla enfekte makrofajlardan ve monositlerden salınan nötrofil esteraz ve serbest oksijen radikalleri gibi mediatörlerin pıhtılaşma mekanizmasını bozarak iç organlarda meydana gelen kanamaların sebebinin koagülasyon defektleri olduğu ifade edilmektedir (Kılınç ve ark., 2019; Glass ve ark., 2003). T. *annulatada* sık görülen bulguların dışında burun kanaması (Gül, 1999; Keleş ve ark., 2001) ve tracheada peteşilerin bulunduğu sınırlı sayıda vaka bidirilmiştir.

T. annulatada mortaliteye bağlı ekonomik kayıpların azaltılması için hastalıkta görülen klinik bulguların bilinmesi ve tedavi edilmesi gereklidir (Gharbi ve ark., 2017). Vaka raporunda *T. annulata* ile enfekte yaygın görülen klinik bulguların dışında burun kanaması oluşan bir sığırda klinik, endoskobik, hematolojik ve kan gazı analizi bulgularını sunmak amaçlanmıştır.

- **Vaka Tanımı**

Bingöl Üniversitesi Hayvan Hastanesi İç Hastalıkları Kliniğine getirilen 3 yaşında, dişi sığırın 15 gündür devam eden iştahsızlık, halsizlik ve 3 gündür burnundan sızıntı şeklinde sürekli kan geldiği bilgisi anamnezde verildi. Fiziksel muayenenin ardından hematolojik analizler için tekniğine uygun olarak vena jugularisten EDTA'lı tüpe 2 mL, kan gazı analizi için heparinli enjektöre 2 mL kan örnekleri alındı. Kan hücrelerinin sayımı hematoloji cihazında (Benesphera H31, India), kan gazı analizi ise otomatik kan gazı analizatöründe (Wondfo BGA 101, China) yapıldı. Kulak perifer kılcal damarlardan froti yapıldıktan sonra Giemsa ile boyanıp ×1000'lik büyütmede incelendi. Nazal ve oral mukozaya endoskopi (Aohua, VET-OR1200 HD, Çin) muayenesi yapıldı.

- **Bulgular**

Fiziksel muayenede iki taraflı burun kanaması, konjuktivada peteşiler, lenf yumrularında çift taraflı genişleme, solunum (24 nefes/dk) sayısı ve kalp frekansının (56 atım/dk) normal sınırlarda olduğu saptandı. Kan yaymalarında eritrositler içerisinde proplazm formlarının görülmesiyle teşhis konuldu.

Hematolojik analizde sığırdaki lökosit (WBC) ve lenfosit (LYM), eritrosit (RBC), hemoglobin (HGB), hematokrit (HCT), trombosit (PLT), eritrosit çapı (MCV), ortamala eritrosit hemoglobini (MCH) değerlerinin referans aralığında, ortalama eritrosit hemoglobin konsantrasyonunun (MCHC) ise referans değerlerden daha yüksek olduğu tespit edilmiştir (Tablo 1).

Kan gazı analizinde kan pH'ı, bikarbonat (HCO_3) konsantrasyonu, parsiyel karbondioksit (pCO_2), potasyum (K^+), klor (CL^-) sodyum (NA^+), glikoz referans aralıkta, kalsiyumda (Ca^+) ciddi düşüş, laktat seviyesinde artış gözlemlendi (Tablo 2).

Tablo 1: Hematolojik Analiz Sonuçlar

Parametreler	Sonuç	Referans*
WBC ($x10^3/\mu L$)	6.6	.0-12.0
LYM ($x10^3/\mu L$)	2.5	2.5-7.5
RBC ($x10^6/\mu L$)	6.48	5.0-10.0
HGB (g/dL)	12.2	8-15
MCHC ($x10^3/\mu L$)	42.4	30-36
MCH ($x10^3/\mu L$)	18.8	11-17
MCV ($x10^3/\mu L$)	44.4	40-60
HCT (%)	27	24-46

*https://www.msdvetmanual.com/special-subjects/reference-guides/hematology-reference-ranges

Tablo 2: Kan Gazı Analiz Sonuçları

Parametreler	Sonuç	Referans
pCO_2 (mm/Hg)	37.5	35–44*
pH (mm/Hg)	7.47	7.35-7.50*
HCO_3 (mmol/L)	27.3	20-30*
Na (mmol/L)	134	136–144**
K (mmol/L)	3.7	3.6–4.9**
Cl (mmol/L)	95	99–107**
Ca (mmol/L)	0.92	2.0–2.8**
Glikoz (mmol/L	3.6	2.2-5.6**
L-Laktat (mmol/L)	5.61	2.0***

*https://www.msdvetmanual.com/special-subjects/reference-guides/blood-gas-analysis-reference-ranges

**https://www.msdvetmanual.com/special-subjects/reference-guides/serum-biochemical-analysis-reference-ranges

***Omole ve ark., 2001

Endoskopik muayenede ise tracheaobronşial mokoza ve orofarenkste peteşi ve kanama odakları tespit edildi (Resim 1).

Resim 1, a:Tracheobronşial mukozada peteşiyel kanama odakları   b:orofarenkste peteşiyel kanama odakları

Ok işaretleri: Peteşiyel kanama odaklarını göstermektedir.
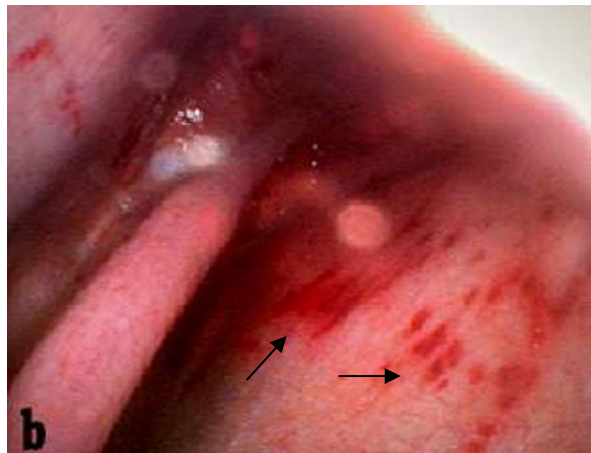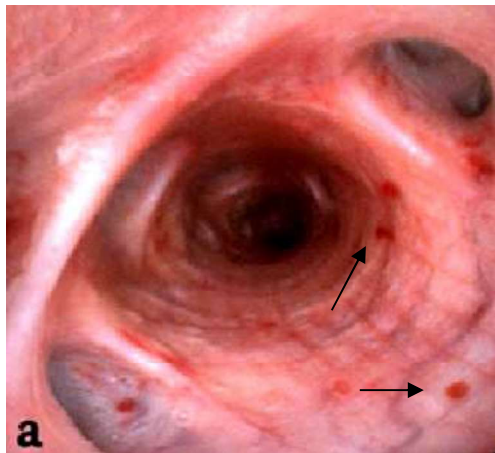
- **Tartışma**

Theileria annulata geniş bir coğrafi dağılıma sahip olan kene kaynaklı önemli hemoprotozoan parazitik bir hastalıktır (Chauhan ve ark., 2015) Hastalık yüksek tedavi masrafları, verim kayıpları ve yüksek mortaliteye sebep olduğundan ekonomik açıdan önem kazanmaktadır (Gharbi ve ark., 2017).

Bu vakada daha önce bildirilen birçok çalışmanın (İssi ve Gül, 2008; Omer ve ark., 2002; Hasanpour ve ark., 2008; İssi ve ark., 2010; Ganguly ve ark., 2015; Yousef ve ark., 2020; Ma ve ark., 2020) aksine hematolojik parametrelerde bir anormallik görülmedi. Bu vakada hematolojik analiz sonuçları Saeed ve ark. (2016), Temiz ve ark. (2014), Selim ve ark. (2020) tarafından bulunanan sonuçlara benzer şekilde referans aralıktadır. Hematolojik değerlerin referans aralığında bulunmasını Temiz ve ark. (2014) aneminin şiddeti ile ilişkilendirmiştir.

Theileriosis'te hipokalsemimin muhtemelen azalan diyet alımı, bağırsaklarda işlev bozukluğu ve böbrek hasarından kaynaklandığı ifade edilmektedir (Hasanpour ve ark., 2008). Bu vakada da yapılan çalışmalarla (Çöl ve Uslu, 2007; Hasanpour ve ark., 2008; Ganguly ve ark., 2015) uyumlu olarak hipokalsemi şekillendi.

Laktat, çeşitli hastalık koşullarında hastalığın şiddetinin ve prognozunun iyi bir göstergesi olarak bilinmektedir (Stevenson ve ark., 2007). *Theileria* ile enfekte hücrelerde moleküler düzeyde yapılan bir çalışmada (Medjkane ve ark., 2014) hipoksi ile indüklenebilir faktör 1 alfa aktivasyonu sonucu artan aerobik glikoliz ve oksidatif stres ile ilişkili glikoz alımında ciddi bir artış ve yüksek laktat üretimi ortaya konmuştur. Sunulan vakada da şiddetli hiperlaktatemi saptandı. Benzer şekilde Nel ve ark. (2004) *Babesiozis*li köpeklerde laktat seviyeleri klinik bulguların şiddeti ile ilişkilendirilmiş ve prognostik bir parametre olduğu ifade edilmiştir. Bunun yanı sıra Uztimür ve Keçeci, (2023) tarafından serebral *Theilerosis*'li bir buzağıda benzer şekilde L-laktat konsantrasyonlarında artış saptanmış ve artışın sebebinin anemiden kaynaklanan oksijen kapasitesindeki azalmaya bağlı hipoksi olabileceği bildirilmiştir. Bu mekanizmalar meydana gelen hiperlaktatemiyi açıklamaktadır.

T. annulata ile enfekte hayvanlarda görülen yüzeysel lenf düğümlerinde tek veya çift taraflı büyüme, anemi, vücut sıcaklığında artış, ekzoftalmi, konjonktiva ve/veya deri yüzeyinde peteşiyal kanamalar yaygın görülen klinik semptomlardır (Alsaad ve ark., 2013; Ceylan ve ark., 2021). Sunulan vakada konjuktivada peteşiler, lenf yumrularında çift taraflı genişleme ve burun kanaması klinik olarak gözlemlenmiştir. Daha önce Gül, (1997) ve Keleş ve ark. (2001) tarafından yapılan çalışmalarda semptomatik çift taraflı burun kanaması bildirilmiş ancak

endoskopik olarak mukozal yüzeylerde bulunan peteşi ve kanama odakları gösterilmemiştir. Sunulan burun kanaması görülen *T. annulata* ile enfekte bir sığırda tracheobronşial bölgede ve orofarenkste endoskobik muayene ile peteşiyel kanama odakları gösterilmiştir.

Sonuç olarak burun kanaması görülen bir sığırda ayırıcı tanıda *T. annulata* enfeksiyonunun mutlaka göz önünde bulundurulması faydalı olacaktır.

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BIOACTIVE PROPERTIES OF *Thymbra spicata* var. *spicata* ESSENTIAL OIL

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ABSTRACT

In this study, the bioactive properties of *Thymbra spicata* var. *spicata* essential oil (**TSSEO**) were investigated. Plant material was collected from Sarıcakaya/Eskişehir, essential oil was obtained by steam distillation method. Gas Chromatography method was used to identify **TSSEO** components. The SwissTargetPrediction database was used to predict the most likely macromolecular targets of a presumed bioactive small molecule. Major components of the essential oil of the plant Carvacrol (56.06%). trans caryophyllene (10.43%), p-cymene (9.67%) and γ-terpinene (6.84%). In addition, the essential oil is Carvone (2.03%), Caryophyllene oxide (1.97%), α-Cadinen (1.78%), α-Copaene (1.72%), α-Pinene (1.04%), α-Terpinene (1.31%), Thymol (0.96%), β-Myrcene (0.81%), Spathulenol (0.74%), Cis-dihydrocarvone (0.64%), Borneol (0.75%) and Ledene (0.71%), α-Amorphene (0.58%). In literature studies on the effects of **TSSEO**, it has been reported that the species has antioxidant, antimicrobial, antifungal, antibacterial and anticancer effects. Carvocrol and Thymol target prediction in the determination of bioactive properties of **TSSEO** phenolic compounds; It indicates the interaction of Cyclooxygenase-1 (PTGS1) with Transient receptor potential cation channel subfamily A member 1 (TRPA1) and Serotonin 2b (5-HT2b) receptor (HTR2B). Possible bioactive target prediction of Caryophyllene oxide, α-Pinene, β-Myrcene, Cadinene and α-Copaene; Shows the interaction of Peroxisome proliferator-activated receptor alpha (PPARA) with Cannabinoid receptor 2 (CNR2). Borneol target prediction, on the other hand, indicates that there may be interaction between Nuclear receptor subfamily 1 group I member 3 (NR1I3) and Androgen Receptor (AR) and Estrogen receptor beta (ESR2). Studies show that **TSSEO** components can have positive effects on human health. However, more studies are needed to determine this effect exactly.

Keywords: Thymbra spicata, bioactive effect, antiproliferative activity

ÜRİNER İNKONTİNANSIN KADIN SAĞLIĞINA ETKİSİ

EFFECT OF URINARY INCONTINENCE ON WOMEN'S HEALTH

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ÖZET

İstemsiz idrar kaçırma şikâyeti olarak tanımlanan üriner inkontonans tüm dünyada sık görülen önemli bir sağlık sorunudur. Yaş, gebelik, gebelik, vajinal doğum, östrojen eksikliği, pelvik organ prolapsusu, obezite, pelvik cerrahi geçirmiş olma ve histerektomi gibi birçok risk faktörü nedeniyle kadınlarda görülme sıklığı daha fazladır. Özellikle postmenopozal dönemdeki kadınları fiziksel, psikolojik, ekonomik ve sosyal yönden olumsuz etkilemektedir. Literatürde Dünyada 250 milyondan fazla kadının üriner inkontinanstan etkilendiği belirtilmekte olup, bu sayının önümüzdeki yıllarda 300 milyonun üzerine çıkmasının tahmin edildiği bildirilmektedir. Dünyada ve ülkemizdeki üriner inkontinans prevalans çalışmalarında kadınlarda üriner inkontinans sıklığının %20-50 arasında değiştiği belirtilmektedir. Üriner inkontinans tipleri arasında stres, urge, miks, taşma, enüresiz nokturna ve koital inkontinans gibi inkontinans tipleri yer almakta olup kadınlarda sıklıkla stres ve urge tipi inkontinans birlikte görülmektedir. Üriner inkontinansın yaşamı tehdit eden bir durum olmadığının düşünülmesi, yaşlanmanın doğal bir sonucu olarak görülmesi, utanma, kaygı ve korku gibi nedenlere bağlı olarak kadınlar sağlık uzmanlarına başvurmayı ertelemektedirler. Bu nedenle ürogenital sistem enfeksiyonları sedanter yaşam, sosyal ortamlardan izole olma, yalnızlık, özgüven kaybı, depresyon ve cinsel işlev bozukluğu gibi fiziksel ve psikolojik sorunlar ortaya çıkarabilmektedir. Tüm bu olumsuz durumlar sonucunda kadınların günlük yaşam aktiviteleri bozulmakta ve yaşam kaliteleri düşmektedir. Literatürde özellikle üriner inkontinasın postmenopozal kadınların yaşam kalitesi üzerine olumsuz etkisi olduğuna yönelik birçok çalışma yer almaktadır. Bu nedenle kadın sağlığı hemşirelerinin özellikle postmenopozal dönemdeki kadınlara üriner inkontinans konusunda bilgilendirme yaparak danışmanlık vermesinin yaşanabilecek sorunların azaltması açısından önemli olacağı düşünülmektedir. Bu doğrultuda, üriner inkontinansın kadın sağlığına olumsuz etkilerini vurgulamak amacıyla bu sunum güncel literatüre uygun olarak irdelenmiştir.

Anahtar Kelimeler: Üriner inkontinans, kadın sağlığı, kadın sağlığı hemşireliği.

ABSTRACT

Urinary incontinence, defined as involuntary urinary incontinence, is a common complaint all over the world. is an important health problem. Its incidence is higher in women due to many risk factors such as age, pregnancy, pregnancy, vaginal delivery, estrogen deficiency, pelvic organ prolapse, obesity, pelvic surgery and hysterectomy. It affects especially postmenopausal women negatively in physical, psychological, economic and social aspects. It is reported in the literature that more than 250 million women in the world are affected by urinary incontinence and this number is estimated to increase to more than 300 million in the coming years. In urinary incontinence prevalence studies in the world and in our country, it is reported that the frequency of urinary incontinence in women varies between 20-50%. Types of urinary incontinence include stress, urge, mixed, overflow, enuresis nocturna and coital incontinence and stress and urge incontinence are frequently observed together in women. Due to reasons such as the belief that urinary incontinence is not a life-threatening condition, being considered as a natural consequence of ageing, embarrassment, anxiety and fear, women postpone applying to health specialists. Therefore, urogenital tract infections may cause physical and psychological problems such as sedentary life, isolation from social environments, loneliness, loss of self-confidence, depression and sexual dysfunction. As a result of all these unfavourable conditions, women's activities of daily living deteriorate and their quality of life decreases. In the literature, there are many studies showing that urinary incontinence has a negative effect on the quality of life of postmenopausal women. For this reason, it is thought that it will be important for women's health nurses to provide counselling by informing women especially in the postmenopausal period about urinary incontinence in order to reduce the problems that may be experienced. In this direction, this presentation was examined in accordance with the current literature in order to emphasise the negative effects of urinary incontinence on women's health.

Keywords: Urinary incontinence, women's health, obstetric and gynecology nursing.

A STUDY TO ASSESS THE EFFECT OF MEDIA IN PROMOTING SELF - MEDICATION USE

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ABSTRACT

Self - medication is the use of drugs to treat self - diagnosed disorders, symptoms or the intermittent or continued use of prescribed drug for chronic or recurrent disease or symptoms. Today's self - medication is one of the biggest socio health and economic problems. This study aimed to find out the importance of media in promotion of self - medication. Self - medication is a common practice Worldwide, particularly among university students and the irrational use of medicines is a cause of concern. Self - medication is defined as taking medication to treat one's own self -diagnosed symptoms without proper medical supervision.With increased access to information and advertisement via the internet, college students are likely to be involved in self - medication practices that may result in increased resistance to antibiotics, adverse drug reactions, interactions and or other complications associated with self - medication. In this community based survey, a pretested questionnaire was circulated through social media to the general population and the data's were collected based on the inclusion and exclusion criteria. After analysing the responses we found that females were practicing self - medications more than males. Self - medication is influenced by many factors such as family, friends, availability of drugs, low perception of risk associated with use of drugs, knowledge of drugs, easy access to internet and wider media coverage on related health issues. Most used drugs were analgesics, antipyretics and antibiotics. The main indications for self medication included head ache, cough and body aches. Pharmacists were the main source of knowledge about the drugs used in self - medication. The leading reason for practicing self - medication was the mildness of the complaint. More than half of the respondents had used paracetamol for self - medication. Media plays an important role in the reception of health risks thus media competence is important in self - medication. Majority of participants use social media to obtain information on self - medication.

Key Words: Self - medication, Knowledge, Pharmacists, Media, Drugs, Practice.

DOMESTIC WASTE DISPOSAL PRACTICES AND ITS IMPACT ON HEALTH OF PEOPLE

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ABSTRACT

Waste is hazardous to public health and the environment if it is not properly kept, collected, and disposed of. Waste has been viewed as an unwanted material with no intrinsic value, which has dominated views towards disposal. In recent years, poor waste management has resulted in a high frequency of sanitation-related illnesses such as cholera, intestinal worms, and typhoid. The present study investigated the waste disposal practices and their impact on the health of people living in peri-urban areas of Faisalabad. Respondents from 40 households from each peri-urban area were selected through convenient sampling technique. The total sample size was 160 households. Data were collected through a structured interview schedule. After data collection, it was analyzed that the majority of the respondents more than half 56.3%, agreed that they always mistreat the waste in their homes. The major proportion of respondents i-e 58.1% pointed out that they faced health hazards due to lack of knowledge about proper waste disposal. A substantial portion 47.5% of the respondents were agree on the point that improper waste disposal impacts their nervous system as well. About 11.3% of respondents were facing diarrheal diseases while 46.9% were facing health issues due to lack of pure drinking water supplies and poor ecological sanitation. In bivariate analysis, it has been clearly shown that there is a highly positive relationship between irresponsible social behavior regarding waste disposal and health status. Government should take serious steps to manage the household waste.. They should provide a proper information and awareness regarding the management of domestic waste and should have a check and balance on municipal workers.

Key Words: Waste Disposal practices, Health hazards, Diseases, Peri-urban areas.

FEMUR DİSTAL PARÇASININ MORFOMETRİK DEĞERLENDİRİLMESİ: PİLOT ÇALIŞMA

MORPHOMETRIC EVALUATION OF THE DISTAL PART OF THE FEMUR: PILOT STUDY

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ÖZET

Patellofemoral eklem oldukça karmaşık bir anatomiye sahip olup biyomekaniğindeki tüm değişiklikler, eklem yüzeylerinde anormal yük ve basınç dağılımına yol açarak kıkırdak bozulmasına, ön diz ağrısına ve ciddi fonksiyonel kayıplara neden olabilmektedir. Patellofemoral eklem patolojisinin yönetimi, bağ ve kemik elemanlarının oluşturduğu statik ve nöromuskuler yapıların oluşturduğu dinamik faktörlerin benzersiz ve karmaşık organizasyonu nedeniyle zordur. Bu çalışmanın amacı, patellofemoral eklemin statik parçalarından femur'un distal parçasının morfolojisini ve anatomisini farklı bakış açısı ile incelemektir. Çalışmada Bilecik Şeyh Edebali Üniversitesi Tıp Fakültesi Anatomi Anabilim Dalı'na ait 8 adet kuru kemik kullanılmıştır. Toplamda belirlenen 10 adet parametre, dijital fotoğraflar üzerinde Image J programı kullanılarak gerçekleştirilmiştir. Elde edilen verilerin istatiksel analizleri için SPSS 22.0 programı kullanılmıştır ($p<0.05$). Tüm parametrelerin betimleyici istatistik verileri değerlendirilmiş olup ve tüm parametrelerin normal dağılım gösterdiği görülmüştür. Pearson korelasyon analizine göre en yüksek korelasyon katsayısı değerleri; facies patellaris derinliği ile medial, lateral kondil derinlikleri ve distal parça alt yüzünün genişliği (sırası ile $r=0.873$, $r=0.886$, $r=0.877$) arasında görülmüştür. Diğer taraftan distal parça alt yüzünün genişliğinin incisura trochlearis genişliği ile incisura trochlearis genişliği ve uzunluğu arasında negatif korelasyonun var olduğu saptanmıştır (sırası ile $r=-0.826$, $r=-0.829$). Patellofemoral eklem özellikle trochlear displazilerde önem arz eden femur distal bölümünün morfometrik yapısı ve birbirleri arasındaki bu yüksek korelasyon değerleri başta cerrahlar olmak üzere farklı disiplinler için önem arz etmektedir. Türk popülasyonuna ait olan bu verilerin endüstriyel alanda da kullanımı olacağını düşünüyorum.

ABSTRACT

The patellofemoral joint has a very complex anatomy and all changes in its biomechanics can cause abnormal load and pressure distribution on the joint surfaces, causing cartilage deterioration, anterior knee pain and serious functional losses. The management of patellofemoral joint pathology is difficult due to the unique and complex organization of static formed by ligament and bone elements and neuromuscular structures that are part of the dynamic. The aim of this study is to examine the morphology and anatomy of the distal part of the femur, one of the static parts of the patellofemoral joint, from a different perspective. In the study, 8 dry bones belonging to Bilecik Şeyh Edebali University Faculty of Medicine, Department of Anatomy were used. A total of 10 parameters were determined using the Image J program on digital photographs. SPSS 22.0 program was used for statistical analysis of the obtained data (p<0.05). Descriptive statistical data of all parameters were evaluated and all parameters showed normal distribution. The highest correlation coefficient values according to Pearson correlation analysis; facies patellaris depth and medial, lateral condyle depths and width of the distal inferior surface (r=0.873, r=0.886, r=0.877, respectively). On the other hand, it was found that there was a negative correlation between the width of the lower surface of the distal part, incisura trochlearis width, and incisura trochlearis width and length (r=-0.826, r=-0.829, respectively). The morphometric structure of the distal part of the femur is especially important in the patellofemoral joint, and these high correlation values between each other are important for different disciplines, especially surgeons. I think that these data belonging to the Turkish population will also be used in the industrial field.

NURSING FOR ALLERGY & ANAPHYLAXIS: A REVIEW

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ABSTRACT

In westernized countries, adverse immune responses to foods affect about 3-5% of young children and adults, and the prevalence appears grow. Drug allergy is a type of adverse drug reaction that covers a wide range of hypersensitivity reactions with different causes and clinical manifestations. Anaphylaxis is a potentially lethal systemic allergic reaction that can happen suddenly after being exposed to allergens such as food, medications, or insect venom. Allergy is an emerging specialty with fast expanding services. Due to a scarcity of allergy training for healthcare personnel, incorrect referrals to the few allergy experts exist. Asthma and allergies are on the rise, compounded by the fact that patient adherence and inhaler use are often less than ideal. Procedures in allergy nursing are important in the development of practical nursing skills.

Keywords: Allergy, anaphylaxis, nursing, nurses

1. Introduction

In westernized countries, adverse immune responses to foods affect about 5% of young children and 3% to 4% of adults, and the prevalence appears to have grown. Food-induced allergy reactions can cause a wide range of symptoms and diseases in the cutaneous, gastrointestinal, and respiratory tracts, and are caused by both IgE-mediated and non-IgE-mediated (cellular) pathways. Oral tolerance may be lost due to genetics and environmental factors, resulting in food allergy. The features of the immune response and the triggering allergen have an impact on disease outcomes. The fact that the presence of food-specific IgE (sensitization) does not always imply clinical allergy complicates the diagnosis. As a result, confirming a diagnosis necessitates a thorough medical history, laboratory tests, and, in many cases, an oral food challenge. New diagnostic approaches are being investigated, including those that focus on immune responses to specific dietary proteins or epitopes of certain proteins. Food allergies are now managed by teaching the patient to avoid eating the allergen in question and initiating therapy (e.g., with injectable epinephrine for anaphylaxis) in the

event of an inadvertent ingestion. Oral and sublingual immunotherapy, Chinese herbal medicine, anti-IgE antibodies, and modified vaccinations are among the improved therapeutic options under investigation (Sicherer & Sampson, 2010).

Drug allergy is a type of adverse drug reaction that covers a wide range of hypersensitivity reactions with different causes and clinical manifestations. The therapy of medication allergies requires a comprehensive history. In the treatment of medication allergies, laboratory testing plays a minor role. When a patient with a drug allergy has a clear requirement for a specific treatment, graded dose challenges and methods to induce drug tolerance may be required. -lactam antibiotics, sulfonamides, local anesthetics, radiocontrast media, angiotensin-converting enzyme inhibitors, nonsteroidal anti-inflammatory medications, and biologic modifiers are examples of specific agents that cause reactions (Khan & Solensky, 2010).

Due to a scarcity of allergy training for healthcare personnel, incorrect referrals to the few allergy experts exist (Kelman et al., 2019). Anaphylactic shock, laryngeal oedema, and sudden severe asthma are all major allergy hazards (Lykowski et al., 2011).

Asthma and allergies are on the rise, compounded by the fact that patient adherence and inhaler use are often less than ideal. As a result, an allergy nurse with proper training is a vital element of the healthcare team. The allergy clinic nurse must be up to date and knowledgeable about asthma (lung functions and asthma education), atopy, allergen avoidance, tests (skin-prick tests and blood tests for allergies, Phadiatop and Immunocap radio-allergosorbent tests (RAST)), eczema (wet wraps), urticaria, and angio-oedema in order to work effectively with a team. She must also be capable of dealing with medical crises such as anaphylaxis and severe acute asthma. Be aware of a clearly distressed patient with hunched shoulders, together with inability to speak full sentences (or inability to feed if a small child) (Baker, 2011).

Anaphylaxis is a potentially lethal systemic allergic reaction that can happen suddenly after being exposed to allergens such as food, medications, or insect venom. Anaphylaxis is on the rise, according to recent studies. Nurse practitioners play an important role in the individualization of care for anaphylactic patients (Hayden, 2018). Within the allergy and immunology speciality, specialist nurses play a critical role that reflects their expertise in an increasingly complicated field of work and capacity to apply modern diagnostic and treatment techniques. All diagnostic and therapeutic allergy procedures, including skin prick testing (inhaled, food, and others), intradermal testing, skin patch testing, penicillin testing, food and

drug challenges, different desensitization protocols, biologics and other medication administration, require nurses to learn and review the written standard operating procedure and protocols. In addition, study the immunotherapy administration protocol and keep up with industry trends and advancements by reading relevant articles, journals, and related material, as well as attending seminars and conferences as needed (Ibrahim et al., 2022).

Allergy is an emerging specialty with fast expanding services. Despite this, the number of patients with allergic diseases outnumbers the capacity of providers to meet their needs (Marriage & Fitzsimons, 2018). Anaphylaxis is a life-threatening illness that necessitates prompt and precise treatment. The literature shows that anaphylaxis knowledge among nursing and emergency medical rescue students is still lacking (Lange et al., 2020).

An allergy-immunology clinic's nurses and personnel have a wide range of specialized skills, including allergy testing, immunotherapy, food challenges, and other procedures. Many of these abilities are not often taught in traditional nursing programs. Furthermore, the allergy-immunology knowledge base is quite distinct and unique. Patient education is critical in the treatment of children with atopic diseases, and nurses are the primary providers of this information to individuals who visit the clinic. Many ways exist to ensure that the staff at an allergy-immunology office has the requisite knowledge, although many people learn on the job. This method may or may not suit the needs of all, does not ensure that all topics are discussed with all staff, and does not guarantee that all staff members have the needed proficiency (DeMuth et al., 2012).

Procedures in allergy nursing are important in the development of practical nursing skills. Skin prick testing and allergen-specific immunotherapy are crucial parts of a nurse's diagnosis and treatment work with patients suffering from allergic disorders, which, according to statistics, are increasingly pandemic in nature, with allergy being referred to as a disease of the twenty-first century. Allergy nursing diagnosis and treatment should be widely promoted and provided in accordance with approved protocols (Bodzak & Krzych-Falta, 2020).

2. Allergy at school

Children are more vulnerable to allergic responses. Because they spend so much time at school or daycare, the chances of developing an allergic reaction are considerable. The management of anaphylactic reactions in schools and daycares is currently inadequate. As a result, a standardized nursing guideline and training for nurses in these contexts are required (Avedissian et al., 2018).

Because anaphylaxis is unpredictable, has a fast start, and can be fatal, school staff must be trained to recognize and respond to its symptoms promptly. Anaphylaxis symptoms can be difficult to distinguish, especially in school-aged children who may have difficulty expressing what they are feeling. The school nurse plays a critical role in giving this training to school workers because of the unique ways in which children describe and display anaphylactic symptoms. To guarantee a safe environment and a quick response to any life-threatening allergic reaction, the school nurse should prepare and coordinate specific emergency care/action plans for kids with known allergies, as well as a comprehensive care plan for all students. This should include having epinephrine stocked and readily accessible so that it can be given promptly in the case of an anaphylactic emergency (Schoessler & White, 2013).

The majority of school food allergy policies include staff training on how to recognize and handle responses. Stock epinephrine was widely available. Policies governing after-school activities were uncommon. Food allergen containment policies in the lunchroom or classroom were found to have the most variation. The majority of school nurses supported the measures, but noted that they would be difficult to implement (Williams, 2018).

Anaphylaxis is a potentially life-threatening allergic reaction that occurs quickly. Anaphylaxis must be recognized early and treated as soon as possible. School nurses are responsible for teaching non-medical school workers how to recognize and manage anaphylaxis, emphasizing that epinephrine is the first line of therapy. Fortunately, numerous epinephrine delivery devices are now available. However, this means that school nurses and nonmedical assistance employees will need to learn about more gadgets in order to administer in an emergency. Emergency medical services must be called after epinephrine has been delivered. It is also vital to educate patients on what to expect after receiving epinephrine in terms of adverse effects and beginning of action. Although antihistamines and inhalers can be used after epinephrine injections, they should not be used exclusively in anaphylaxis. School nurses are uniquely qualified for this function because they are familiar with the school environment and can analyze and reassess the needs of faculty and staff (Bingemann et al., 2021).

Despite the seriousness of food allergy reactions, many schools do not have a nurse on staff at all times, and many of the staff members are untrained. Training a larger group of school employees could help school nurses better manage students with food allergies in the schools (Pham et al., 2017).

The number of school-aged children suffering from life-threatening allergies that trigger anaphylaxis is rising. School nurses require resources to assist them in giving health training to school employees on how to treat potentially life-threatening health issues for children in their care, but these resources are limited (Cavanaugh & Strickland, 2011).

Peanut allergies are responsible for the majority of severe food allergies. As a result, one of the most common healthcare conditions among students that must be handled in the school context is food allergies. Teachers are overwhelmed when they are given the job of caring for these pupils due to a lack of full-time school nurses. When there is no school nurse present, it is critical that teachers receive a complete educational program on peanut allergies. This understanding would raise their awareness of their own responsibility in preventing deaths caused by allergies (Nielsen & Lindsey, 2010).

3. Drug allergy

Hives that appear within a few hours of starting a new medicine might easily be mistaken for drug hypersensitivity. Many clinical presentations of drug hypersensitivity, on the other hand, are more complicated or occur in the context of disease and/or polypharmacotherapy. Two common presentations of drug allergy are the intensive-care patient who gets a rash while receiving many medications and the ambulatory patient with complicated chronic conditions who develops a new and unexplained symptom while taking multiple medications. Patients who acquire drug allergy symptoms while taking various drugs at the same time should be treated in a methodical manner. A careful history of prior and current drug reactions, extra information from the medical record, and study of temporal patterns between drug administration and development of symptoms are all part of the evaluation process. To identify potential culprit agents, this information is paired with knowledge of the types of allergic reactions most commonly caused by specific classes of medications. Past drug allergies, hereditary variables, recurrent drug exposure, and specific disorders (e.g., human immunodeficiency virus [HIV]/ acquired immunodeficiency syndrome) are all risk factors for developing drug allergies. "Multiple drug allergy syndrome" is defined as two or more immunologic drug responses to chemically unrelated drugs. In individuals with a documented drug allergy, there are three therapy options: delivery of an unrelated medication, careful administration of a related medication, and desensitization to the culprit substance (Esmaeili, 2018).

Nursing, medicine, and pharmacy students have limited opportunities during their undergraduate programs to learn and practice together as an interprofessional team (MacDonald et al., 2018).

Antibiotics containing penicillin are considered first-line treatment for many illnesses. Nurse practitioners must consider penicillin allergy when evaluating patients. The distinction between side effects and real "allergic reactions" can help enhance overall patient care. Penicillin and cephalosporin have modest risks of cross-allergy (Nguyen, 2018).

Penicillin allergy is the most frequent medication allergy, affecting 10% of all patients in the United States. The nurse-led penicillin-allergy delabeling questionnaire is a low-cost technique that can successfully identify patients who should be delabelled. Future research should look into the best ways to get nurses and patients to participate in allergy delabeling, as well as the influence on antibiotic use and patient outcomes (Dutcher et al., 2021).

Patients with a penicillin/aminopenicillin (PCN) allergy label are more likely to receive non–β-lactam antibiotics and to experience worse clinical outcomes (Fabre et al., 2020).

4. Computed tomography contrast agents allergy

Anaphylaxis can be caused by contrast chemicals used in computed tomography. Anaphylaxis caused by CT contrast agents is a life-threatening systemic hypersensitivity reaction that requires the administration of epinephrine and other emergency medications very away. Due to the use of contrast agents, early epinephrine administration is a key technique for dealing with anaphylaxis (Shin et al., 2021).

5. Others

Alpha-gal allergy can cause delayed anaphylaxis and is suspected to be linked to tick (Amblyomma americanum) bites. A key concern remains a lack of caregiver expertise. Nurses who are educated on the specific symptoms of Alpha-gal allergy may be better able to avert a potentially fatal anaphylactic reaction (Farmer et al., 2021).

6. Occupational risk of allergy for nurses

Occupationally, healthcare personnel are exposed to allergens found in protective gloves, disinfectants, medications, and skin care products. This exposure poses a significant occupational risk, making caretakers especially concerned about allergic occupational illnesses (Omrane et al., 2020).

Work-related systemic allergic reactions to β-lactam antibiotics may occur in nurses after inhalation of low doses and without perceived association with drug-specific tasks like handling of antibiotics (Merget et al., 2018).

The second most prevalent occupational disease is occupational skin disease. One of the occupational categories most commonly afflicted by hand eczema is health care workers, particularly nurses. According to reports, the prevalence of hand dermatitis (HD) among nurses varies from 18 percent to 57 percent, depending on the type of work they do and the department in which they work, with more nurses in surgical departments and special care units afflicted. Nurses are needed to wash their hands regularly, perform wet labor, wear occlusive gloves for lengthy periods of time, and come into touch with disinfectants, detergents, and medical chemicals due to the nature of their profession. As a result, the most prevalent type of hand dermatitis encountered in this population is irritating contact dermatitis. However, nurses are also exposed to allergens such as rubber accelerators, colophony, fragrances and preservatives which can cause Type IV contact allergy and allergic contact dermatitis (Ngajilo, 2014).

Latex allergy affects millions of individuals worldwide, with a higher number of health care workers being affected. Latex-allergic nursing students present a unique issue for nurse educators. Students may join the program with a latex allergy or develop one during the course of their studies (Katrancha & Harshberger, 2012).

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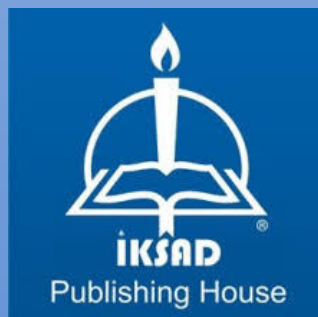
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