2nd INTERNATIONAL HEALTH SERVICES CONGRESS

February 25-26, 2025/ Toros University, Mersin, Türkiye

EDITOR

Assoc. Prof. Efdal OKTAY GULTEKIN

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CONGRESS PROGRAM

OPENNING CEROMONY	
10:00-10:30	Assoc. Prof. Efdal OKTAY GULTEKIN Toros University, Türkiye CHARMING of ORGANIZING COMMITTEE
	Prof.Dr.Ali Murat SEDEF Toros University, Türkiye CHARMING of CONGRESS
	Prof. Dr. Ömer ARIÖZ Toros University Rector HONORARY BOARD

Keynote Speakers	
10:30-13:00	**Pakize DURMAZ** The Royal Wolverhampton Hospital NHS, UK Examples of Digital Technology in Health and Nursing Services - UK Example
	Murat BENLİ St. Elisabeth Hospital, Beckum, Germany Nurse's rights and responsibilities Germany example
	María Ángeles Diego Mantecón San Pablo CEU University, Spain Overview of the Spanish Special Education System

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HALL 1 MODERATÖR: Harika TOPAL ÖNAL

13:00- 14:00

AUTHORS	AFFILIATION	TOPICTITLE
Abdurrahim YILDIZ, Buse Nur KAYA, AslIhan YAKUT, Jehan ALTAMEEMI	Sakarya University	The Effect pf Fatigue and Depression Level on Exercise, Nutrition and Quality of Life in Health Care Personnel Working In Hospital
Mert ÖLMEZ, Orkun ERKAYIRAN	Karamanoğlu Mehmetbey University	Emotional Availability: A Conceptual and Theoretical Review
Muhammet Talha KERMEN, Hülya KULAKÇI ALTINTAŞ	Zonguldak Bulent Ecevit University	Evaluation of the Effect of Social Media Addiction on Sleep Quality in Adolescents
Birol YETİM, Seval SELVI SARIGÜL	Mus Alparslan University	Examination of The Relationship Between Compassion Satisfaction and Compassion Fatigue Among Nurses: A Comprehensive Meta-Analysis Study
Mehmet ÇOLAK, Özlem ŞİRELİ	Sivas Cumhuriyet University	Future Expectations and Psychiatric Symptoms in Earthquake Victim Adolescents
Betül BİLGİN , Yasin ÇETİN	Adıyaman Univesity	Therapeutic Analysis of Ethical Problems Encountered By Student Nurses İn Practice Effect on Communication Skills

HALL 2 MODERATÖR: Tiinçe AKSAK

13:00- 14:00

AUTHORS	AFFILIATION	TOPICTITLE
Nilgün ÇIRAK, Cahidenur KOÇAK	Istanbul Esenyurt University	The Effects of Digital Technology-Supported Exercise Programs in Reducing the Risk of Falls in Older Adults
Seyma OKUTAN, Ebru TURAN KIZILDOGAN	Eskisehir Osmangazi University	Evaluation of Activities of Daily Living in Patients with Ischemic Stroke in the Acute Period
Sercan MANSUROĞLU, Seda TEK SEVINDIK	Kütahya Health Sciences University	Examining the Relationship Between Technology Use and Cyber Security Levels of Nursing Students
Aybüke YURTERİ TİRYAKİ	University of Health Sciences	Examination of the Relationship Between Skills that Increase the Self-Esteem of Children Who are Attending Secondary
Aysu ASLAN , Sevcan TOPÇU	Ege University	Bibliometric Analysis of Publications on Vaccine Hesitism in Disabled Individuals

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HALL 1 MODERATÖR: Deniz YALÇINKAYA 14:00- 15:00

AUTHORS	AFFILIATION	TOPICTITLE
Serpil ÖZBAŞ, Seray GEREY, Şükran ÖZKAHRAMAN KOÇ	Süleyman Demirel University	Internet Addiction in Women's Life
Merve YAZAR, Aslıhan TURAN, Berna BAYIR	KTO Karatay University	The Relationship Between Health Literacy and Psychosocial Health in Pregnant Women
Hafize DAĞ TÜZMEN , Huriye ALTINKAYNAK, Arzu ÇİFTÇİ	KTO Karatay University	Childhood Experiences and Emotional Experiences of Women in the Postpartum Period the Effect of Intelligence Levels on the Role of Motherhood
Yağmur SÜRMELİ, Murat BENLİ, Duygu VEFİKULUÇAY YILMAZ	Toros University	Review of master's Theses with Reflexology Application in the Field of Women's Health Between
Aslıhan TURAN, Merve YAZAR, Berna BAYIR	KTO Karatay University	Reproductive Autonomy, Family Planning Attitudes and Affecting Factors in Married Women of Reproductive Age

HALL 2 MODERATÖR: Güzin AYAN 14:00- 15:00

AUTHORS	AFFILIATION	TOPICTITLE
Aysel DOĞAN , Demet ÖZER	Toros University	Fetal Surgery Current Approaches and Future Perspectives
Mehtap BUGDAYCI	Toros University	Gut Microbiota and Diabetes
Aysun BADEM, Aslıhan AKSU	Kahramanmaraş Sütçü İmam University	The Effect of Natural Disasters on Women's Sexual and Reproductive Health
Demet ÖZER	Toros University	Reproductive Health Policies and Service Models in Around the World and Turkey

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HALL 1 MODERATÖR: Akın ABA 15:00- 16:00

AUTHORS	AFFILIATION	TOPICTITLE
Ayyüce Tuba KOÇAK, Melike DURMAZ	Süleyman Demirel University	Transitioning from Student to Nurse: Readiness for Practice and Influencing Factors
Aslıhan AKSU, Ruveyda Sultan DARĞIN, Gülnisa KÜPELİKILIÇ	Kahramanmaraş Sütçü İmam University	Views, Feelings, and Thoughts of First-Time Mothers Regarding Breastfeeding in Public: A Qualitative Study
Ahmet YILDIZ	Batman University	Bibliometric Analysis of Artıfıcıal Intelligence Studies in Healthcare
Canan BULUT	Istanbul Kultur University	Utilization of Artificial Intelligence-Supported Decision Support Systems in Healthcare Institutions
Aynur CELIK	Toros University	Health Entrepreneurship and Its Importance

HALL 2 MODERATÖR: Yağmur SÜRMELİ 15:00- 16:00

AUTHORS	AFFILIATION	TOPICTITLE
Behire SANCAR	Toros University	Comfort Concept and Its Application in Nursing
Betül TEKİN ALPARGU	King's College London	Link Between Clinical Phenotypes and Disease Mechanisms in Asthma
Zuhal ÇAYIRTEPE, Şenol DEMİRCİ	Presidency of Turkish Health Institutes	Health Accreditation Surveyors According to Five-Factor Personality Traits
Deniz ALTINBAY, Birsen KESIK ZEYREK	Toros University	Current Approach in Childhood Myopia
Birsen KESİK ZEYREK, Deniz ALTINBAY	Toros University	Reasons for Dissatisfaction of Progressive Eyeglass Users

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Keynote Speakers

10:00-10:30	**Sümer MÜNEVVEROĞLU** Medipol Üniversitesi Dijital Dönüşüm ve Sanal PlanlamanIn Ortognatik Cerrahideki Rolü

HALL 1 MODERATÖR: Turgay ARSLAN 10:30- 11:30

AUTHORS	AFFILIATION	TOPICTITLE
Mert KÜÇÜK, Adnan KARAİBRAHİMOĞLU	Süleyman Demirel University	Examining the Effect of Sample Size in Repeated Measures Analysis of Variance: Malpractice Insurance Example
Bahar CELBIŞ, Özlem ÖZAYDIN		Glass Ceiling in the Health Sector: A Systematic Review
Özden GÜDÜK	İstinye University	Incidents of Violence Against Healthcare Workers in Emergency Services in Türkiye
İbrahim ÇINAR, Şilan ŞEN, İkranur BEBEK, Ünzile BARAN, İzel KÖSE, Dilan ÖZEL, Ayşe Nur TOPALOĞLU, Hatice ÖVEN, Merve ÖZGÜR, Petek ALTINDAĞ, Sude KELEŞ, Mustafa AL-KHAFAJİ	İzmir Kâtip Çelebi University	Demographic Factors Influencing Healthcare Preferences
Aynur ÇELİK, Emre KUNDAKÇI, Hande ŞEN	Toros University	Professional Selection in Surgical Technician: Motivations and Affecting Factors
Besime Ahu KAYNAK	Toros University	Early Diagnosis of Oral Cavity Tumors and the Importance of Early Detection

HALL 2 MODERATÖR: Arzu COŞKUN 10:30- 11:30

AUTHORS	AFFILIATION	TOPICTITLE
Aynur ÇELİK, Hande ŞEN, Tuğçe TENEKE, Ayşe GEZER	Toros University	The Importance of Surgical Technicians in the Operating Room
Ayşegül YILDIRIM, AslIhan TURAN, Hasan GERÇEK	KTO Karatay University	Comparison of Different Artificial Intelligence Tools' Answers to Questions Related to Early Intervention: ChatGPT vs. Gemini
Serinay AKYÜREK, Elif Nurdan KAPLAN, Olcay ÖZEN, Nihal KALAYCI OFLAZ	Medipol University	An Evaluation of the Turkish Health System and Health Problems
Vedat CANER	Istanbul Beykent University	The Relationship Between Occupational Health and Safety and International Health Services: Problems, Solutions and Applications
Merve BAYRAKTAR, Canan BULUT	Istanbul Kultur University	Comparative Analysis of Financial Health and Healthcare Expenditures: The Cases of The Usa, Germany, and Japan

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HALL 1 MODERATÖR: Dilek Hande ESEN 11:30- 12:30

AUTHORS	AFFILIATION	TOPICTITLE
İbrahim ÇINAR	İzmir Kâtip Çelebi University	Breaking Barriers: Enhancing Employment Opportunities for People with Schizophrenia
Hidayet Sener, Hatice Kubra SONMEZ	Erciyes University	Characteristics of Conjunctival Tumors in Patients Presenting to Tertiary Ophthalmology Clinic
Aylin DURMAZ EDEER, Özcan DOĞRUEL, Can ÇALIŞKAN	Dokuz Eylül University	Postoperative Sleep Quality of Patients Undergoing Open Heart Surgery and The Effect of Selected Factors on Sleep Quality
Dilek KOLCA		Review of Scale Studies Assessing the Communication Competence of Patients and Healthcare Professionals in Health Services
Deniz BOZKURT	King's College London	The Management of Type 2 Diabetes with Dementia: Case Study from a Nurse's Perspective in the UK

HALL 2 MODERATÖR: Mehtap BUĞDAYCI 11:30- 12:30

AUTHORS	AFFILIATION	TOPICTITLE
Kübra ERDEM	Prof. Dr. Cemil Taşçıoğlu City Hospital	HIV Seroprevalence in Van Province: A Three-Year Retrospective Analysis
Elif OKUMUŞ, Kübra Nur TUTAN	Van Training and Research Hospital	Evaluation of Antinuclear Antibody (ANA) Immunofluorescence Patterns of Clinical Samples
Erhan Caner AKKAYA, Hilal ADİL, Betül GÜNAYDIN	Uşak University	Hepatitis A Seroprevalence in Usak Province: Changes Between 2018- 2024
Zehra YILDIZ, Mustafa Şakir AKGÜL, Tuğba ÇETIN	Karabük University	The Effect of Resistance Exercises Combined with Blood Flow Restriction Method on Muscle Hypertrophy
Tiinçe AKSAK	Toros University	Effects of Herbal Extracts on Male Infertility: Antioxidant and Spermatoprotective Mechanisms
Harika TOPAL ÖNAL	Toros University	The Role and Clinical Significance of AdropIn in the Pathogenesis of Cardiovascular Diseases and Diabetes

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HALL 1 MODERATÖR: Esma GÖKÇE

12:30- 13:30

AUTHORS	AFFILIATION	TOPICTITLE
İdil Esin ÜNLÜ, Ümit YÜZBAŞIOĞLU, Melahat SAYAN	Toros University	Investigation of the Relationship Between Sleep Quality, Emotional State And Academic Achievement in University Students
Yusuf Tuna GÖNEN, Sezen DİNCER	Ankara Medipol University	The Investigation of the Impact of Classification Scores in Wheelchair Basketball Players on Sports Performance and Daily Life Education And Basic Motor Skills
Aylin DURMAZ EDEER, Fatma GÜVENÇ, Onur UYSAL, Edanur YAĞIZ, Murat ALKAN	Dokuz Eylül University	Investigation of Stress Levels and Reactions of Caregivers of Patients Undergoing Orthopedic Surgery on the Day of Surgery
Sevilay ULUTAŞ, Burak MENEK	Medipol University	Effects of Breathing Exercises Combined with Hamstring Stretching Exercises on Muscle Shortening and Balance in Healthy Young Individuals with Hamstring Shortness
Melis PINARCIOĞLU, Ebru GÜLEK KARADÜZ	Medipol University	Investigation of the Effects of Post-Isometric Relaxation and Neural Mobilization in Patients with Nonspecific Neck Pain
Osman KARACA	Karatay University	Current Muscle Strengthening Methods in Stroke Rehabilitation

HALL 2 MODERATÖR: Efdal OKTAY GULTEKIN

12:30- 13:30

AUTHORS	AFFILIATION	TOPICTITLE
Sema ANIK, Vahibe ULUÇAY KESTANE	İstanbul Galata University	What is the Therapeutic Potential of Asian Propolis?
Nuran DELIALIOGLU, Ceren HEKIMOĞLU, Şinasi KARVAR	Mersin University	Comparison of Broth Microdilution and Commercial Methods for the Detection of Colistin Susceptibility in Carbapenem-Resistant Gram-Negative Bacterıa
Şinasi KARVAR	University of Health Sciences	Infections Caused by Candida parapsilosis: Clinical Findings and Antifungal Resistance Trends
Esra SAKALLI, Hakan SAKALLI, Derya Deniz KANAN	Ömer Halisdemir University	The Place of in Vitro and in Vivo Studies in Oncology
Asmin YAVUZA, Bilge Meral KOÇ	Bahcesehir University	Relationship Between Microbiota Awareness, Probiotic Food Consumption Frequency and Orthorexia Nervosa in Health Professional Candidates: Descriptive Research
Abdulkadir SANCI, Gülşen Taşdemir SANCI		Forensic Genetic Health Services
Osman SEZER, Nuran DELİALİOĞLU	Adana Veterinary Control Institute	Molecular Investigation of Anaplasma Phagocytophilum in ixodid TIcks in Mersin Region

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HALL 1 MODERATÖR: Dilan SARPKAYA 13:30- 14:30

AUTHORS	AFFILIATION	TOPICTITLE
Olena BOHUTSKA, Tetyana SEVASTYANOVA	Kherson State University	Problems in the Treatment of Atherosclerosis and Ways to Overcome Them
Yash SHARMA, Liyanaralalage Judith Maleesha Thathsarani Silva, Dhanush Kishore Kamath, Zaid Arif, Laya Chadalawada, Rohit Parab, Luka Kutchava	Tbilisi State Medical University	Interventional Cardiology in Myocardial Infarction
David WORTLEY	United Kingdom	Wearable Technologies and Lifestyle Medicine
K.R.Padma, K.R.Don	Sri Padmavati Mahila Visvavidyalayam	The Current State, Problems and Difficulties of Pisciculture Economic Improvement in Rural Locations
Liubov BODNAR, Liliia VYSHNEVSKA	National University of Pharmacy	3D Printing in Pharmacy

HALL 2 MODERATÖR: Öznur GÜLDAĞ 13:30- 14:30

AUTHORS	AFFILIATION	TOPICTITLE
Sarath JAIRAJ	Tbilisi State Medical University	Interventional Cardiology in Myocardial Infarction
Sophia GUSHPIT, Tetiana ILINA	Ivano-Frankivsk National Medical University	Study of the Mineral Composition of Lavender Herb
Liubov BODNAR, Olena IVANIUK	National University of Pharmacy	Prospects for the Development of New Drugs with Medicinal Plant Materials
Alina DEMIANOVSKA, Liubov BODNAR	National University of Pharmacy	Study of Rheological Properties of Creams Based on Shea Butter

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HALL 1 MODERATÖR: ÖZNUR GÜLDAĞ 14:30- 15:30

AUTHORS	AFFILIATION	TOPICTITLE
Natalia RYBAK, Liubov BODNAR, Liliia VYSHNEVSKA	National University of Pharmacy	Analysis of the Market for Topical Anti-Inflammatory Drugs
Polina PALYVODA, Svitlana ZUIKINA	National University	The Role of Binder Excipients in the Creation of Granules Based on Phytoextracts
Svitlana OLIINYK, Liliia VYSHNEVSKA	National University	Methods for Standardization Extemporaneous Gels
Kateryna BLAHOVISNA, Svitlana ZUJKINA	National University	Research of Gel-Forming Agents in Aspect of Compliance with the Requirements for Antti-Burn Action Drugs
Retem CHAHIRA, Fertas DOUNIA AMANI, Bairi ABD EL MADJID	Badji Mokhtar University	Clinical and Biological Aspect of Sodium Valproate (DepakIne) in Patients with Epilepsy (Polyclonal May 8, 1945)

HALL 2 MODERATÖR: Efdal OKTAY GÜLTEKİN 14:30- 15:30

AUTHORS	AFFILIATION	TOPICTITLE
Sebahat ASLAN TEK, Taylan BOZOK, Nuran DELİALİOĞLU	Mersin University	Antibiotic Resistance of Salmonella Strains Isolated from Stool and Extraintestinal Cultures
AslIhan BEKCİ, Seda TEZCAN ÜLGER, Tuğçe ŞİMŞEK, Eylem Sercan ÖZGÜR, Necdet KUYUCU, Gönül ASLAN	Mersin University	Molecular Characterization of Coronaviruses in Patients with Respiratory Symptoms
Fatma SEKER, Leyla ERSOY, Seyma AKBULUT, AslIhan BEKCI, Nuran DELIALIOGLU, Seda TEZCAN ULGER	Mersin University	Determination And Molecular Characterization of Enteric Adenoviruses in the Stool Samples of Patients with Gastroenteritis Symptoms
Derya Deniz KANAN	Ömer Halisdemir University	Methods to Create an Experimental Alzheimer's Model Using AlCl3
Gülşah KARAKAYA, İlayda KILIÇ	Izmir Katip Çelebi University	Synthesis of A Novel Compound as DIthIocarbamIc Acid Ester and Evaluation of DruglIkeness
Emre ÇETINDAG, IşIl AYDEMIR	Ömer Halisdemir University	The Role and Importance of Two and Three-Dimensional Cell Cultures in In Vitro Studies

HALL 1 MODERATÖR: Umit YUZBASIOGLU 15:30-16:30

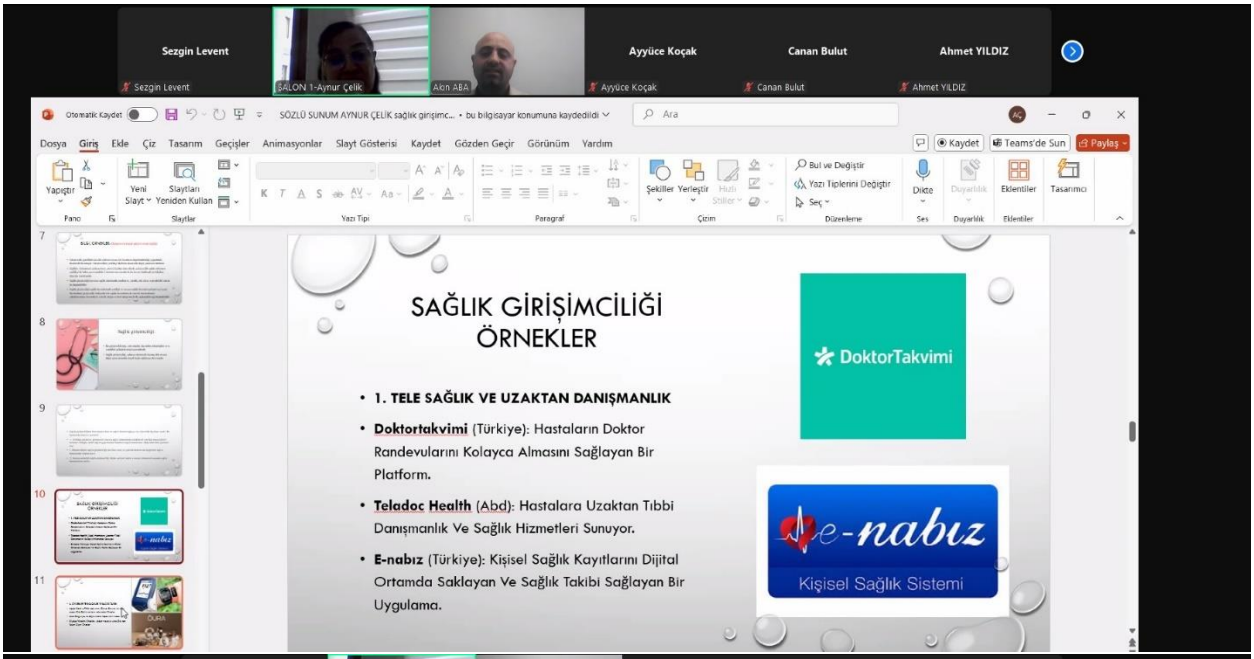
AUTHORS	AFFILIATION	TOPICTITLE
Cahidenur KOÇAK, Nilgün ÇIRAK	Avrasya University	Optimization of Structured Early Mobilization in Intensive Care Patients: A Review
Gamze AKSU BAYSAL	Van Yuzuncu YIl University	Non-Pharmacological Pain Relief Methods in Newborns
Ebru TURAN KIZILDOĞAN, Erdem ATALAY, Nazmiye Nur KÜÇÜKAYDIN	Eskisehir Osmangazi University	Assessment of Upper Extremity Problems in Physically Disabled People Using Walking Aids
Turan Emre ÖZDEMİR, Özgür KAYA, Berkan TORPİL	Medipol University	Comparison of Quality of Life, Kinesiophobia, Perceived Occupational Performance and Satisfaction People with Low Back and/or Neck Pain
Dilek Hande ESEN	Toros University	Heavy Slow Resistance Training as a Novel İntervention for Rotator Cuff Tendinopathy: A Narrative Review
Kevser ELCI	Mersin University	Metabolic Effects of Yoga on Weight Management
Mihriban GOKCEK TARAC	Karabuk University	Coronal Pulpatomy of a Permanent Tooth with Incomplete Root Development and Spontaneous Pain: A Case Report
Eda PARLAK, Tolga DUMAN, Sinem PAKCAN	Toros University	Nutritional Strategies in Athlete Musculoskeletal Injuries

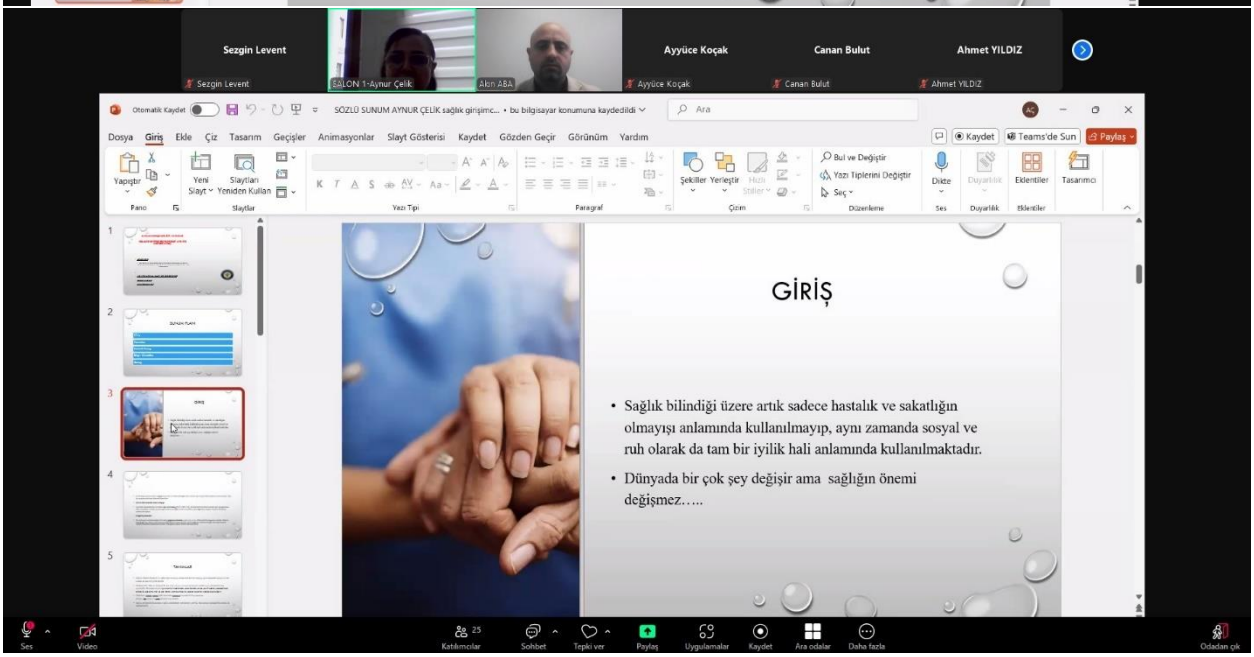
HALL 2 MODERATÖR: Demet ÖZER 15:30-16:30

AUTHORS	AFFILIATION	TOPICTITLE
Merve BAT TONKUŞ, Meryem AKDAĞ, Sungur YILDIRIM, Batuhan YILMAZ	Istanbul Yeni Yüzyil University	The Effect of Nursing Students' Compassion Levels on Their Ethical Sensitivity
Merve BAT TONKUŞ, Betül ÇEKER, Aleyna Gizem DİNÇ	Istanbul Yeni Yüzyil University	The Relationship Between Emotional Intelligence and Educational Stress Levels Among Nursing Students
Melike DURMAZ, Yasemin ŞARA, Şerife KURŞUN KURAL	Selcuk University	Student Nurses' Perceptions of The Concept of Blended Education During the Covid-19 Pandemic: A Metaphor Analysis Study
Ömer Faruk KARABULUT	Hacettepe University	Assignment Status of Dietitians Between Service Regions and Service Groups
Nazife AKAN	Toros University	Effects Of Caffeine-Containing Foods on Fetal Development During Pregnancy
Burcu OKAYER ÖZER, Duygu VEFİKULUÇAY YILMAZ	Mersin University	Innovation in Cosmetic Gynecology

(Bildiri Kodu)----------

PHOTO GALLERY





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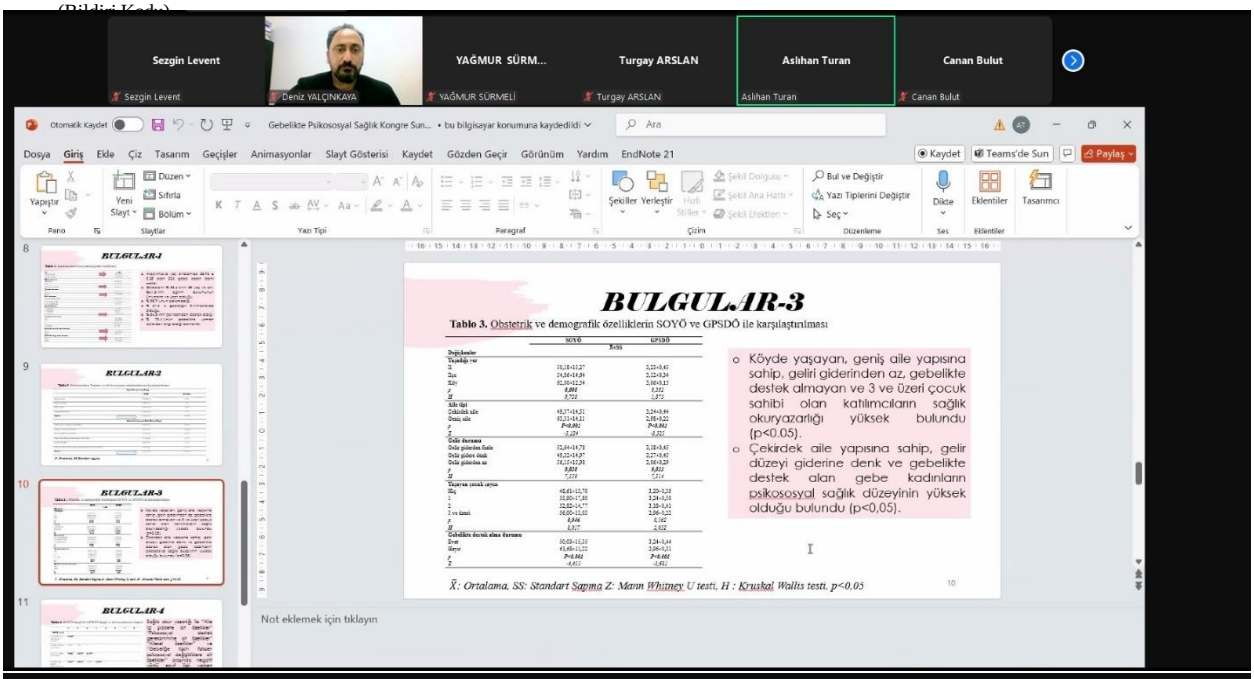

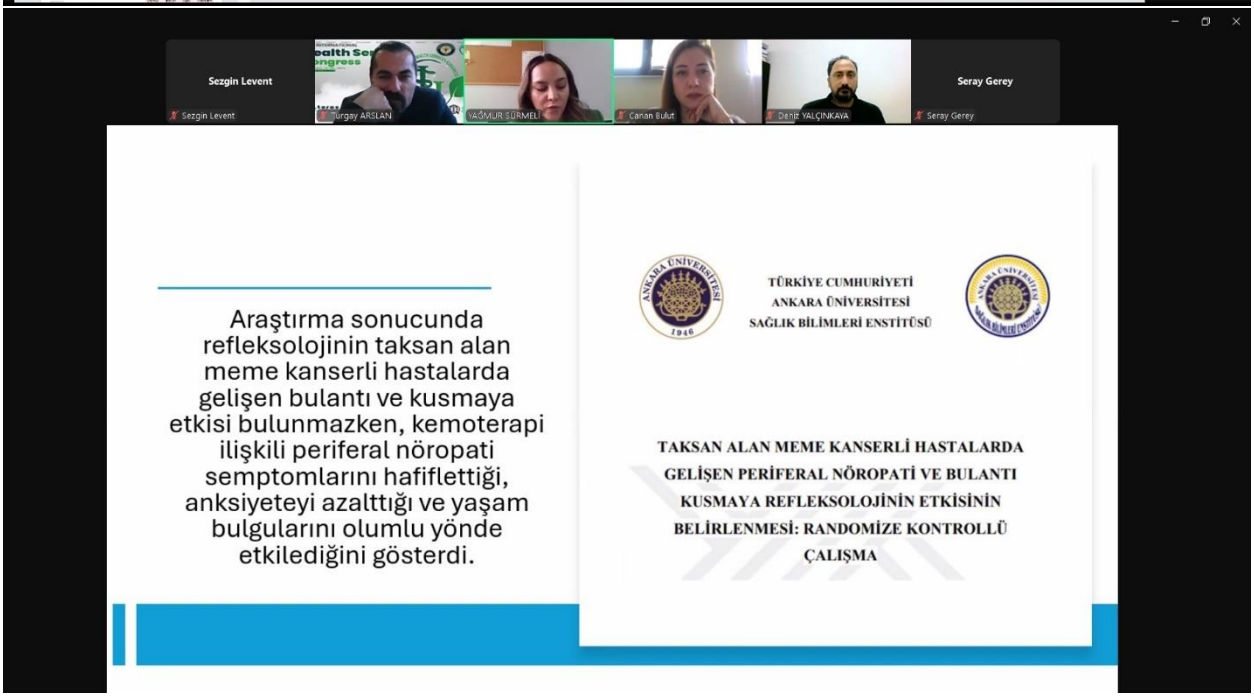

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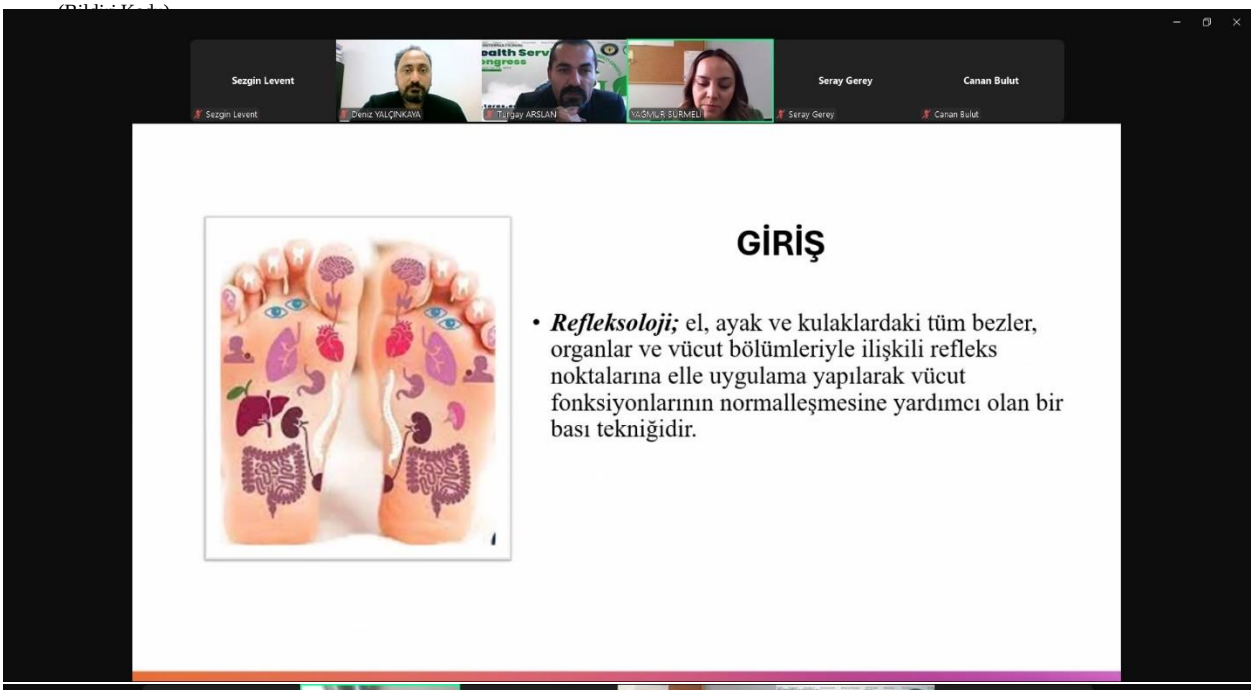

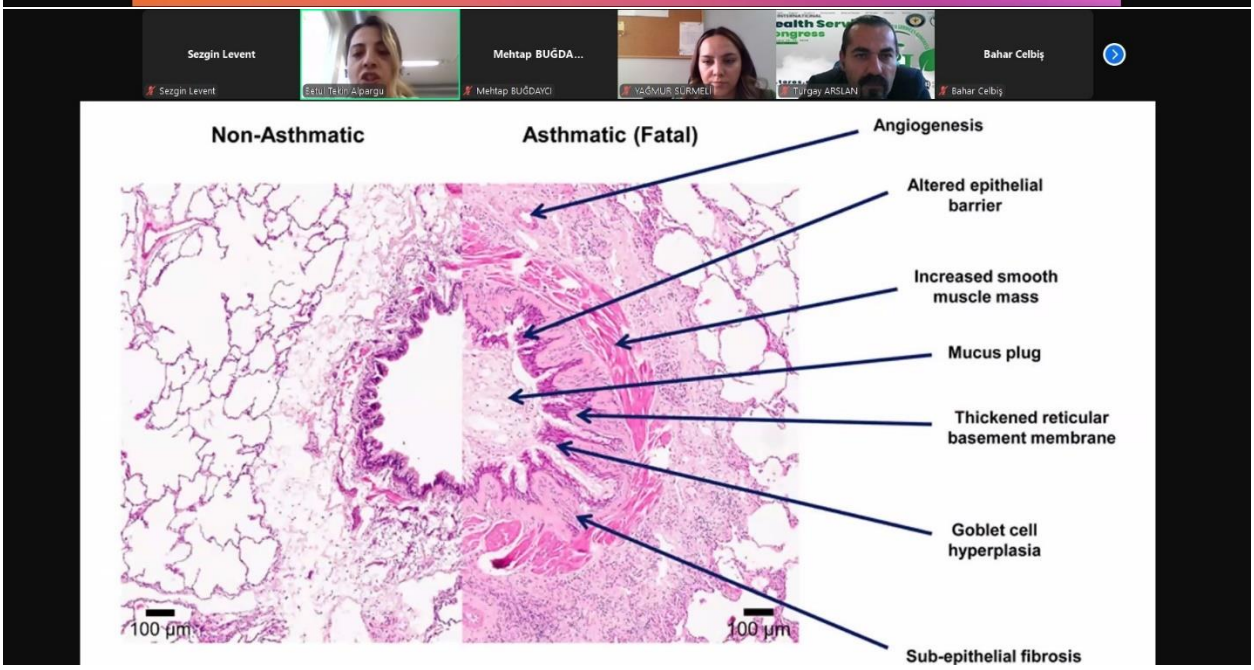

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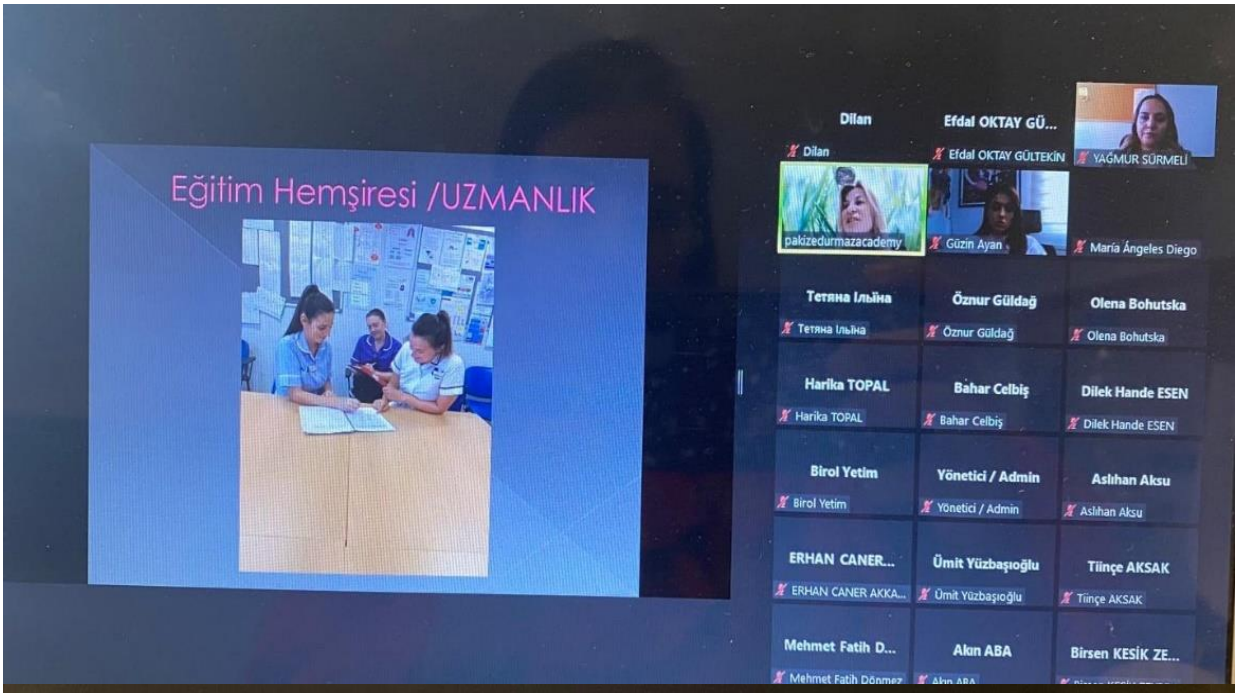

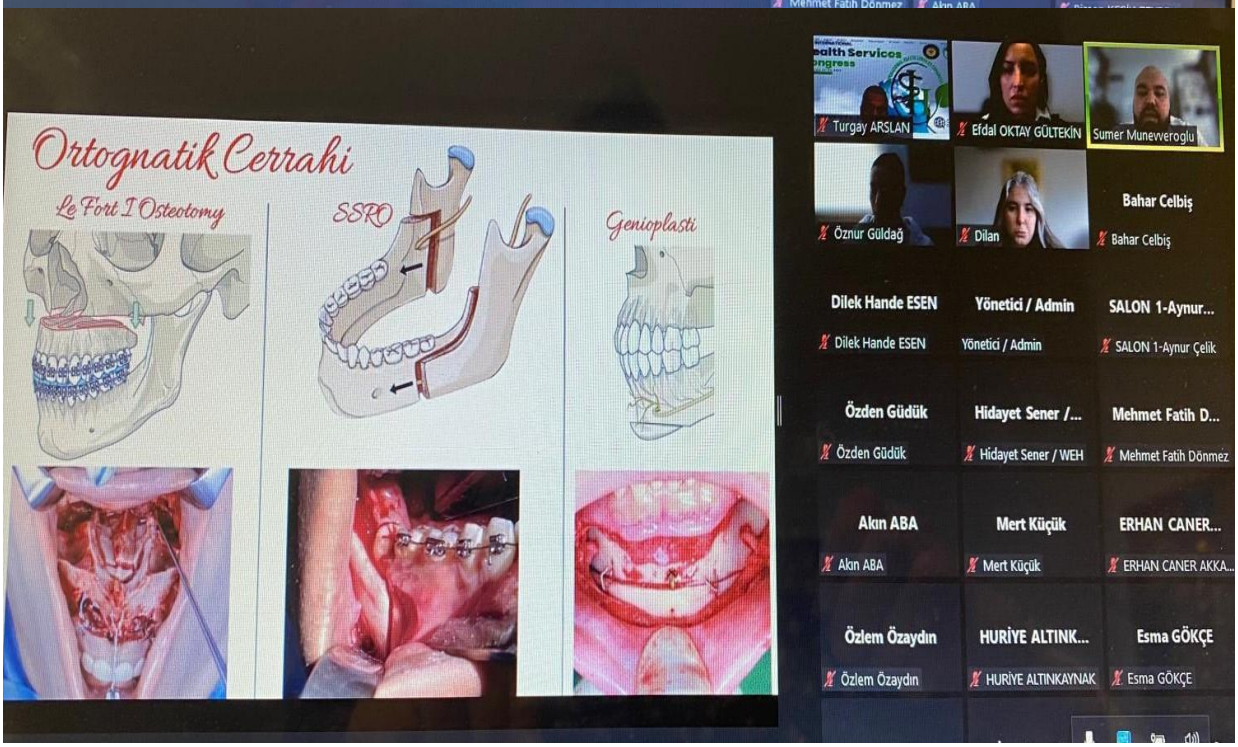

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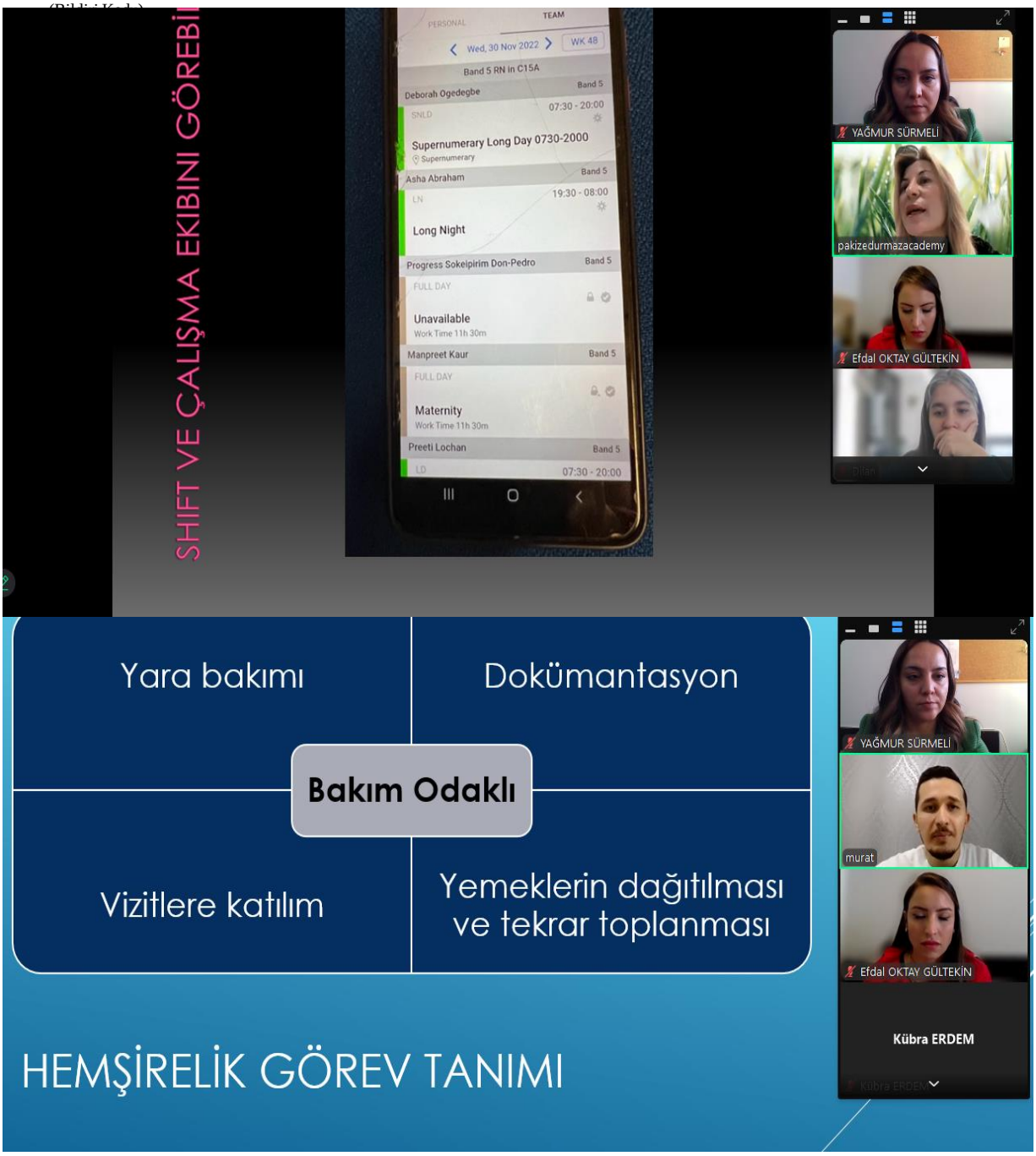

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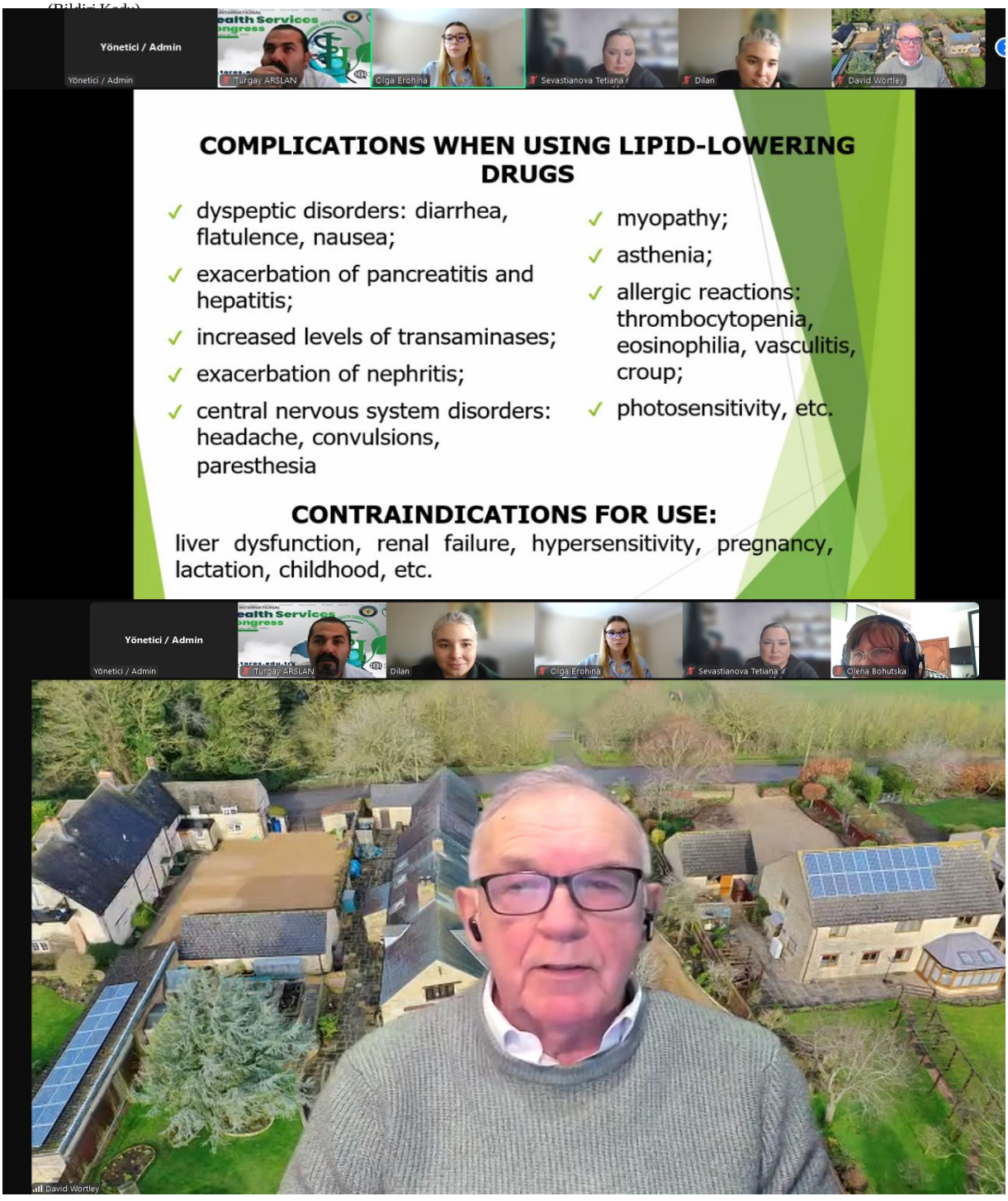

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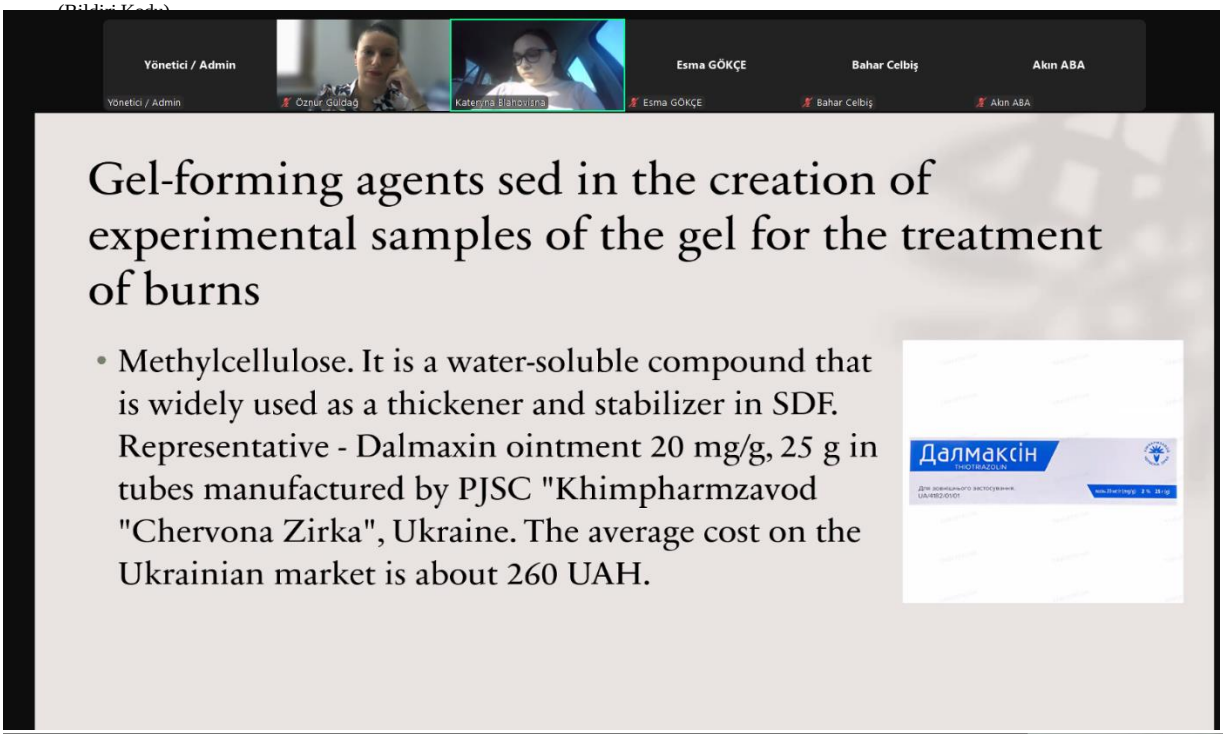

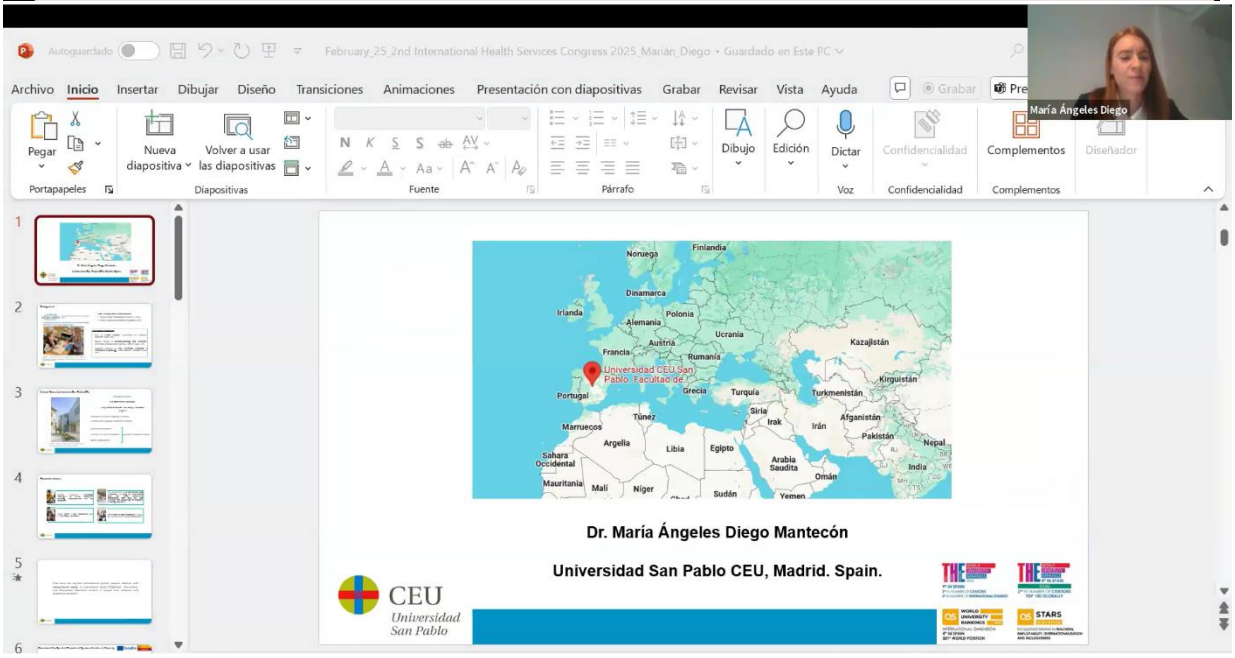

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THE EFFECTS of DIGITAL TECHNOLOGY-SUPPORTED EXERCISE PROGRAMS in REDUCING THE RISK of FALLS in OLDER ADULTS

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ABSTRACT

Falls are a common public health problem among older adults and significantly impact their quality of life. The increasing incidence of falls due to the aging population creates serious health and economic burdens. Digital technologies can enhance the effectiveness of exercise programs in reducing fall risk and improving accessibility. This study aims to examine the effectiveness of digital technology-supported exercise programs in reducing falls among elderly individuals. The study was designed as a literature review. Studies published in the last ten years (2015-2025) focusing on technology-based exercise for fall prevention in elderly individuals were identified through PubMed, ScienceDirect, and Google Scholar. The keywords "fall prevention," "elderly," "older adults," "digital intervention," "technology," "exercise," "balance training," "virtual reality," and "exergaming" were used. Digital technology-supported exercise interventions effectively reduce fall risk in elderly individuals. Studies indicate that virtual reality applications, exergaming systems, and tele-rehabilitation positively affect balance, functional mobility, and fear of falling. These methods were more motivating than traditional approaches and provided advantages in home applicability. The accessibility and user-friendly nature of these programs enabled participants to adapt regardless of their technology literacy. Digital technology-assisted exercise programs are effective approaches to reducing fall risk in elderly individuals. These interventions have positive effects on balance and functional mobility, and their combination with traditional methods may yield best results. Further studies are needed to understand their long-term effects.

Keywords: *Fall prevention, Older adults, Digital interventions, Balance training, Virtual reality, Exergaming*

INTRODUCTION

Falls are a prevalent public health concern among older adults, with one in four individuals over the age of 65 experiencing a fall each year. With aging, declines in functional capacity and balance increase fall risk. Falls can lead to severe consequences, including injuries, fractures, disability, reduced quality of life, higher mortality rates, and increased healthcare costs (Montero-Odasso et al., 2022).

Before developing effective fall prevention interventions, it is crucial to identify risk factors. Research has highlighted multiple risk factors, such as a history of falls, gait instability, vertigo, muscle weakness, unstable gait, cognitive impairment, decreased movement and general decline in function. Among these, musculoskeletal changes—particularly muscle loss and weakness—play a significant role in impairing gait and balance, thereby elevating fall risk. Regular personal physical exercise can significantly reduce injury due to falls; improve mobilization; and enhance the health, strength and balance of older adults (Papalia et al., 2020). Exercise interventions, whether group-based or individually delivered, have been shown to be effective in preventing falls. Although the optimal components of fall prevention programs remain unclear, multi-component programs that target both strength and balance, as well as those incorporating specific balance training, appear to be particularly beneficial (Sherrington et al., 2017). However, older adults often face barriers to physical activity, including physical limitations, lack of motivation, transportation difficulties, and insufficient family or social support. Fear of falling can further discourage participation, especially among those living alone. These challenges not only restrict access to healthcare services and structured exercise programs but also contribute to a cycle of inactivity, leading to further functional decline (Zhou et al., 2024). Falls negatively affect quality of life and have negative implications for psychological well-being. Fear of falling can lead to activity limitations, further reducing physical function and social participation. Ironically, such inactivity can accelerate physical decline, ultimately increasing fall risk (Lee & Kim, 2024). Recent research suggests that technological advancements offer promising alternatives to traditional exercise programs. Digital technology-supported exercise interventions have the potential to enhance motivation, improve adherence, and provide cost-effective, scalable solutions. Therefore, this study aims to examine the efficacy of using digital technology-assisted exercise interventions to prevent and reduce falls in individuals aged 65 years and older.

MATERIALS and METHODS

This narrative literature review examines the effects of digital technology-supported exercise programs on fall prevention in older adults. A comprehensive search was conducted in PubMed, ScienceDirect, and Google Scholar for studies published between 2015 and 2025. The keywords "fall

prevention," "elderly," "older adults," "digital intervention," "technology," "exercise," "balance training," "virtual reality," and "exergaming" were used in various combinations.

The review included peer-reviewed studies involving individuals aged 60 and older that investigated technology-based exercise interventions for fall prevention and reported outcomes related to balance, mobility, or fall risk reduction. Studies focusing solely on theoretical models, expert opinions, or non-exercise interventions, as well as conference abstracts, editorials, or unpublished works, were excluded.

After an initial title and abstract screening, eligible full-text studies were reviewed, and relevant findings were synthesized to provide an overview of the effectiveness of digital technology-supported exercise programs in reducing fall risk.

RESULTS

When the titles and abstract sections of the studies were examined, 7 studies met the inclusion criteria (Table 1).

Table 1. Summary of the qualitative results of the review

Author	**Type of exercises**	**Technology**	**Sample size (n); age (years)[a] (experimental and control groups); gender**	**Duration of intervention and follow-up**	**Outcome measures and results after intervention**
Zak et al. 2022	OTAGO exercises, Dual task exercises, VR games	The VR-based intervention making use of the Oculus goggles	60; 76.6 SD (1.63), 76.6 SD (1.5), 78.06 SD (3.73), 79.13 SD (3.56) male/female: 24/36	3 weeks: 3 times per week; 30 minutes per session	Functional performance, static and dynamic balance
Zhao et al. 2023	Core muscle education, lower extremity strength, balance and gait training, 3 kinds of VR sports games: skiing, diving, and running	VR rehabilitation training intervention	50; 72.16 (SD 3.64) and 73.36 (SD 3.25); male/female: 21/29	12 months: 3 times per week, 50 min each time	Anti-fall ability, increase lumbar spine and femoral neck bone mineral density

Delbaere et al.2021	Balance exercise programme	StandingTall app	503; 77.1 (SD 5.5) and 77.7 (SD 5.5); male/female: 164/339	24 months: Recommended ≥2 hours per week, starting at 40 minutes/week, increased every two weeks by 20 minutes until reaching 2 hours/week in week 9	Rate of falls, balance, mobility, and gait, stepping performance, fall risk, psychological well-being, and quality of life, cognitive performance and executive functions
Bernocchi et al. 2019	Otago Exercise Program	Home tele-rehabilitation	283; 77.9 (SD 6.0) and 79.3 (SD 7.0); male/female: 115/168	6 months: at least twice a week for 30 minutes, The physiotherapist monitored progress via phone calls every two weeks and video conferences	Incidence of falls, functional status, balance, gait performance, quality of life
Fu et al.2015	Conventional balance training, Wii Fit balance training	Nintendo's Wii Fit® balance board	60; 82.3 (SD 4.3) and 82.4 (SD 3.8); male/female: 21/39	6 weeks: three sessions a week, for one hour per session	Fall risk, reaction time, quadriceps strength, body sway
Yi et al.2024	Fall prevention exercises	Smart healthcare technology	60; 71.77 (SD 6.58) and 70.83 (SD 6.58); male/female: 13/47	8 weeks: three times a week, lasting approximately 30 minutes	Balance, physical function
Sadeghi et al. 2021	Balance training	VR, exergaming	58; 70.4 (SD 4.3) and 74.1 (SD 7.0) and 70.5 (SD 5.1) and 72.2 (SD 7.2); male/female: 58/0	8 weeks: three times per week for 40 minutes	Leg strength, balance, functional mobility

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Study Characteristics

This review analyzed seven studies examining digital technology-assisted exercise programs reducing fall risk in older adults. Sample sizes ranged from 50 to 503 participants, with mean ages between 70 and 82 years. The studies utilized various digital approaches, including virtual reality (VR), exergaming, tele-rehabilitation, and smart health technologies. Intervention durations varied from 3 weeks to 24 months, with exercise frequencies ranging from twice a week to three to five sessions per week. Key outcomes assessed included fall risk, balance, muscle strength, functional mobility, and quality of life. The technologies were well-tolerated by participants, and home-based applicability was noted as a significant advantage.

Virtual Reality (Vr) and Exergaming

Virtual Reality (VR), a three-dimensional computer-generated environment where individuals can interact and move as if they are physically present, has emerged as a promising technology in the medical field (Molina et al., 2014). Structured physiotherapy programs, supported by purpose-built VR solutions tailored for older adults, offer a wide range of mentally engaging, goal-oriented training activities. These programs are designed to ensure that the skills acquired in the virtual environment can be effectively transferred to daily life activities, thereby addressing individual physical impairments (Rodríguez-Almagro et al., 2024).

In one study, a self-designed VR-based physiotherapy program was implemented for older adults over 75 years of age. The program, which included four function-focused VR rooms, aimed to improve static balance, cognitive abilities, dual-task functional activities and aerobic capacity. The results showed that the VR-assisted intervention significantly improved balance and functional performance, especially in static balance, compared to traditional methods such as the OTAGO program. The study highlighted that VR-based training not only improved physical outcomes but also provided a more engaging and stimulating experience for participants and was crucial for maintaining motivation and adherence to the program (Zak et al., 2022).

One of the potential complications resulting from falls is osteoporotic fractures. Improving bone mineral density (BMD) is a fundamental component of any program aimed at preventing osteoporotic vertebral fractures (Dautzenberg et al., 2021). A study was conducted to investigate the effect of virtual reality training on fall prevention skills and bone mineral density (BMD) in elderly patients with osteoporosis.

It was found that virtual reality training significantly improved balance as measured by the Berg Balance Scale and Functional Gait Assessment and increased BMD of the femoral neck and lumbar spine

(Bildiri Kodu)----------

over a 12-month period. The VR group demonstrated greater improvements in these outcomes compared to the control group, which underwent traditional fall prevention exercises (Zhao et al., 2023).

Another study investigated the effectiveness of exergaming, specifically using the Nintendo Wii Fit, in reducing fall risk and incidence among frail older adults with a history of falls. The results showed that the Wii Fit balance training group experienced a 69% reduction in falls compared to the conventional exercise group. Additionally, the Wii Fit group showed significant improvements in muscle strength, reaction time, and postural sway, which are critical factors in fall prevention. The study concluded that exergaming, with its real-time feedback and interactive nature, offers a more effective approach to balance training for high-risk elderly populations (Fu et al., 2015).

Another study examined the results of traditional balance training, VR balance training and combined exercise on lower body strength, balance and functionality in older men. The results revealed that the combined exercise group showed the greatest improvements in strength, balance and functional mobility compared to both the traditional and VR groups. In particular, the VR group demonstrated better balance and functional mobility outcomes compared to the traditional balance training group. The study also reported excellent adherence rates (87.9%-92.1%) across all intervention groups, demonstrating high engagement of participants in these exercise modalities (Sadeghi et al., 2021).

These studies show that VR and exergaming technologies offer an alternative to the fall prevention and traditional rehabilitation methods in older adults. The immersive and interactive nature of VR improves physical outcomes while addressing cognitive and motivational aspects. This makes it a promising tool for improving quality of life and functional independence.

Telehealth and Telerehabilitation

Telehealth and telerehabilitation provide effective interventions for reducing fall risk in older adults with chronic conditions. While telehealth improves remote access to healthcare services, telerehabilitation supports the implementation of personalized exercise programs at home (Fadzil et al., 2022).

A multidisciplinary home telehealth program has been shown to be a feasible and effective approach to reduce the risk of falls in older adults. A study evaluating a six-month home-based tele-rehabilitation program found that participants receiving telehealth-assisted interventions experienced fewer falls compared to those receiving traditional treatment. The program included individualized home exercises focusing on strength, balance, and walking, coupled with structured telehealth monitoring by healthcare professionals. Results indicated a 40% reduction in fall incidence within the intervention group, as well as improved functional status, balance, and mobility. Moreover, participants demonstrated high adherence to the program and reported positive outcomes in terms of confidence and quality of life (Bernocchi et al., 2019).

Another study in this field evaluated the effectiveness of the StandingTall program, a home-based, unsupervised telerehabilitation intervention that delivers individualized balance exercises with progressive difficulty. The program allows participants to choose their exercise schedule while adherence is monitored through automatic data transfer. Fall incidence was tracked via digital fall diaries over a 12-month period, revealing a lower fall rate in the intervention group compared to the control group. Additionally, improvements were observed in functional mobility, balance, and psychological outcomes. These findings suggest that self-managed telerehabilitation programs can be an effective and sustainable approach to fall prevention in older adults (Delbaere et al., 2021)

These studies highlight the potential of telehealth and telerehabilitation to transform fall prevention strategies for older adults, particularly those with chronic conditions. By combining personalized exercise programs with remote monitoring and support, these interventions not only reduce fall risk but also enhance overall quality of life and independence.

Smart Health Technologies

Digital health technologies not only reduce healthcare costs but also enhance patients' awareness of their own health, facilitating better health management. These technologies accelerate diagnosis and care processes while strengthening patient monitoring and support systems. Devices such as smartwatches and wearable sensors, when integrated with mobile applications, enable tracking of physical activity, encourage regular exercise, and contribute to fall prevention programs (Ortega-Navas, 2017).

In this context, the "SHe CofFEE" program stands out as a digital health solution aimed at reducing fall risk in older adults. The program enhanced adherence to physical activity through exercise reminders, daily health tracking, and educational videos. A structured exercise regimen, consisting of online group sessions three times per week, individual physical activities, and self-monitoring tools, provided participants with a comprehensive intervention. Group exercises encouraged social interaction, while personalized tracking systems boosted motivation and exercise compliance. Additionally, remote access was facilitated to overcome the physical activity limitations imposed by the pandemic, supporting long-term health management. The study indicated that such digitally-supported programs achieved high adherence rates due to their user-friendly nature and were more effective in maintaining exercise commitment compared to traditional methods (Yi et al., 2024).

The incorporation of smart health technologies into fall prevention programs represents a significant advance in healthcare delivery. By leveraging wearable devices, mobile applications, and remote monitoring systems, these technologies empower older adults to take an active role in managing their health. The ability to track physical activity, receive real-time feedback, and participate in structured exercise

programs from the comfort of home not only improves adherence but also enhances overall health outcomes.

DISCUSSION

The findings of this review highlight the impact of digital technology-supported exercise interventions in reducing fall risk among older adults. Virtual reality (VR), exergaming, and tele-rehabilitation methods have demonstrated improvements in balance, functional mobility, and overall physical function. The incorporation of these digital interventions into fall prevention programs provides opportunities to enhance motivation, adherence, and accessibility for elderly individuals. One of the key advantages of digital exercise programs is that they provide interactive and engaging training environments that are often missing in traditional exercise methods. The studies included in this review reported that participants found VR and exergaming-based interventions more enjoyable, leading to better adherence and better outcomes. Furthermore, these interventions address barriers such as transportation difficulties and fear of falling in unfamiliar environments by allowing implementation in the home environment.

A crucial point to consider is the comparison between digital interventions and conventional balance training. While digital methods showed promising results, particularly in motivation and engagement, some studies indicated that a combination of traditional and digital exercises produced the best outcomes. This suggests that integrating digital tools with well-established physiotherapy programs could offer a more comprehensive approach to fall prevention. An important point to consider is the comparison between digital interventions and traditional balance training. While digital methods have shown promising results, especially in terms of motivation and engagement, some studies have shown that a combination of traditional and digital exercises yields the best results. This suggests that the implementation of digital tools in combination with traditional physiotherapy programs may offer a more comprehensive approach. Despite the positive findings, there are some limitations. First, the long-term effectiveness of digital interventions remains unclear. Furthermore, technological literacy among older adults varies and this affects user engagement. Future research should focus on longitudinal studies and older adults with limited technological familiarity to assess the sustainability of these interventions.

CONCLUSION

The integration of digital technology into exercise-based fall prevention programs is a promising approach to reduce the risk of falls in older adults. This review found that virtual reality, exergaming and tele-rehabilitation interventions significantly improved balance and mobility compared to traditional methods. Digital interventions also offer the advantage of applicability in the home environment, increasing program adherence. However, to maximize effectiveness, a hybrid approach combining traditional

physiotherapy methods with digital tools may be beneficial. Future studies should investigate the long-term impact of these interventions and methods to increase accessibility for older adults with different levels of digital literacy. By leveraging technological advances, healthcare professionals can develop more effective and scalable fall prevention programs. This could improve the quality of life of the ageing population.

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INTERNET ADDICTION in WOMEN'S LIFE

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ABSTRACT

Today, the internet has become an indispensable part of women's daily life. Internet addiction, which has become a worldwide problem, has negative consequences both socially and individually. Excessive and uncontrolled internet use affects people physically, socially and spiritually. Health problems such as smoking, alcohol and substance abuse, sleep and eating disorders, attention disorders, anxiety and depression may occur with internet addiction. Internet addiction also negatively affects women's physical health. Long-term inactivity can lead to physical problems such as obesity, eye strain and posture disorders. Many factors are effective in women's tendency towards internet addiction. Social media platforms, ease and accessibility of online shopping, digital content consumption are important factors that prolong women's internet usage time. Although the incidence of internet addiction is higher in men than in women, women are at risk of addiction with excessive internet use at certain periods of their lives. Internet addiction may cause fear of childbirth in pregnant women, social isolation and loneliness in elderly women. Various strategies are suggested to combat internet addiction. These include digital detox programmes, psychological counselling, activities to strengthen family communication and time management training. In addition, women need to strengthen their social support networks and devote more time to real-life social relationships. This article aims to bring together the current research on this issue by addressing the causes, effects and consequences of internet addiction in women's lives.

Keywords: *Women, Addiction, Internet addiction*

INTRODUCTION

In recent years, with the development of technology, the time spent in the digital world has increased and this has led to an important problem such as internet addiction. Internet addiction generally means an individual's inability to control internet use (Shek et al., 2013). There are many factors that cause internet addiction and one of them is gender (Khan & Awan, 2017; Dinç & Ögel, 2019; Mari et al., 2023). According to Turkey Statistical Institute 2024 data, the rate of internet use is 92.2% for men and 85.4% for women. (TÜİK, 2024). Studies in the literature indicate that not only men but also women are likely to have internet addiction at different stages of their lives (Khan et al., 2017; Sancar, 2017; Varchetta et al., 2024). While men generally use the internet for reasons such as internet searches and digital games, women use the internet for reasons such as social media platforms, and consuming shopping, digital content (TV series, films, videos). In addition, the way women use the internet may not only be to meet their social needs but also to meet their emotional needs, which may cause them to spend more time in digital environments and increase the risk of addiction (Park et al., 2023). For this reason, it is important for individuals to create awareness and manage the time spent on the internet in order to use the internet in a healthy way. In addition, fighting addiction and preventing this situation should be a part of a healthy life.

Internet Addiction

Internet addiction is defined as excessive or uncontrollable behaviours, urges or preoccupations related to computer use and internet access, which leads to problems and distress (Shaw & Black, 2012). Internet addiction is not included in the diagnostic criteria of the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV) as a disease, but it is an issue that needs to be investigated (Pies, 2009; Bottel et al., 2023). Internet addiction is a pathophysiological disorder similar to alcohol addiction (Dinç & Ögel, 2019). Golderberg developed diagnostic criteria by adapting from alcohol addiction (Erden & Hatun, 2015). Later, Young organised eight-item re-diagnostic criteria with the gambling addiction criteria in DSM-IV (Erden & Hatun, 2015; Dinç & Ögel, 2019). Within these criteria; excessive, excessive time on the internet, spending more time on the internet for pleasure, having difficulty in quitting internet use, emotional symptoms experienced as a result of decreasing or stopping internet use, using the internet for a longer period of time than planned, jeopardising work and social life due to excessive internet use, lying to others about the duration of internet use, using the internet to escape from personal problems, and the diagnosis of ‘Internet Gaming Disorder’ was added to DSM-IV diagnoses in May 2013 (Dinç & Ögel, 2019). Although many epidemiological studies and prevalence studies on internet addiction have been conducted in the literature, different values have been found in each study. Some studies, the average prevalence of internet addiction was found to vary between 6-52.3% (Aslan & Yazıcı, 2016; Savcı & Aysan, 2017; Machado et al., 2018; Dinç & Ögel, 2019; Hassan et al., 2020; Brito et al., 2023). When these values are

evaluated by taking into account the population and sample of each study, the prevalence levels show that the susceptibility to internet addiction is high. Many internet addicts are also accompanied by other psychiatric diseases (Dinç & Ögel, 2019). Many studies have found that excessive internet use leads to anxiety, depression, anxiety and there are positive relationships between substance use, attention deficit, hyperactivity disorder (Yücens & Üzer, 2018; Lebni et al., 2020; Yıldız et al., 2022; Zakaria et al., 2023). In addition, internet addiction can cause negative consequences such as disruption of sleep patterns, unhealthy diet, dry eyes, pain around the waist and back, decrease in self-confidence, introversion, and isolation (Dinç & Ögel, 2019; Sağar & Eren, 2022). As a result of studies, it has been revealed that pharmacological treatments are effective as well as applications such as cognitive behavioural therapy, art therapy, positive psychotherapy, family therapy for the treatment of Internet addiction (Dinç & Ögel, 2019; Lukawski et al., 2019; Ayub et al., 2023).

Internet Addiction and Women

Women may turn to the Internet more to develop coping methods both physically and emotionally during periods such as adolescence, pregnancy, postpartum and old age (Yang et al., 2022; Rosell et al., 2023; Niskier et al., 2024). While reasons such as strengthening social relationships and seeking identity during adolescence cause excessive use of the Internet, stress, information seeking, psychological difficulties during pregnancy and postpartum period may lead women to use the Internet (Rachubińska et al., 2021; Costantino et al., 2022). In addition, social isolation and feeling of loneliness in old age may cause excessive internet use by women (Li et al., 2024). Internet addiction may cause multidimensional negative effects on women. Deterioration in social relationships, irregularities in work and family life, physical and mental health problems can negatively affect women's quality of life (Sağar & Eren, 2022; Zengin & Naktiyok, 2022; Rosell et al., 2023). The Internet, as an indispensable part of modern life, occupies an important place in the daily lives of women in particular. The rapid development of technology and the penetration of the Internet into all areas of life have led to significant changes in women's lifestyles. Women spend more and more time on activities such as spending time on social media platforms, online shopping, consuming digital content and virtual communication. These conveniences and accessibility offered by the Internet bring the risk of addiction with excessive and uncontrolled use of the Internet and negatively affect women's lives. Internet addiction is an important problem that decreases the quality of life of women and causes problems in many areas such as psychological problems, weakening of social relations, physical health problems and decreased work performance. There are also studies on internet addiction in women in the literature. In a study on internet addiction, it was revealed that women's internet addiction was higher than men (Muche & Asrese, 2022). Lin et al. found that female students with internet addiction had worse sleep quality than female students without internet addiction (Lin et al., 2019).

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Pawlikowska et al. concluded that 5.68% of women in general are at risk for social media addiction (Pawlikowska et al., 2022).

The Effects of Internet Addiction on Women's Lives

In addition to high-risk lifestyle health behaviours, smoking, alcohol and substance use, eating disorders, eating disorders, poor sleep quality, internet addiction is becoming a problem that needs to be solved in order to change negative reproductive and perinatal problems in women before pregnancy (Toivonen et al., 2017; Rezaee et al., 2022). In studies examining the internet use of pregnant women, it has been observed that the majority of women benefit from the internet (Bjelke et al., 2016; Sayakhot & Olah, 2016; Serçekuş et al., 2021). In Karabulutlu and Aydın's study, 40.5% of pregnant women stated that they could access the birth information they were looking for at any time, and it was also concluded that internet use significantly affected the fear of childbirth in pregnant women (Karabulutlu & Aydın, 2024). Yang et al. found that women with physical illnesses during pregnancy and at the end of labour were more likely to develop internet addiction. It was also found that internet addiction was associated with low quality of life (Yang et al., 2022). In Bozan and Cangöz's study, social media addiction was found in most pregnant women (Bozan & Cangöl, 2023). It has been revealed that variables such as age and depressive symptoms affect internet addictions in women (Rachubińska et al., 2021). In a study conducted in women aged 60 years and older, it was concluded that women with more social interaction use social networks more and as a result, loss of control in internet use is more (Rosell et al., 2023). Internet addiction may cause more emotional burden in women by causing smoking, excessive alcohol consumption, eating and sexual disorders (Sung et al., 2013; Nicola et al., 2017). In addition, in a study, it is seen that age, duration of marriage and employment status affect internet addiction and internet addiction can cause deterioration of the family structure by creating negative effects such as divorce between spouses and domestic violence. (Latifian et al., 2024).

CONCLUSIONS

Internet addiction has become a problem that has significant effects on women with the rapid expansion of the digital world. Women use the internet intensively, especially due to their interest in social media, online shopping and internet-based services, and this situation can turn into addiction from time to time. Research shows that women spend more time using the internet to make social connections and escape the stresses of everyday life. Internet addiction in women, as in men, can negatively affect social life and family relationships. Internet addiction can also negatively affect individuals' mental health and cause problems such as anxiety, depression and loneliness. Excessive use of the Internet outside working hours may cause disruption of sleep patterns and decrease in work performance. Women may find it difficult to balance their professional responsibilities and internet addiction, which may negatively affect their career

development. Social support networks, awareness activities and digital awareness trainings can play an important role in women's coping with internet addiction. Family support and professional help can help women to control their internet use. In addition, digital detox programmes and strategies to limit social media use can also be effective in overcoming this problem. In conclusion, internet addiction is an issue that is effective in many aspects of women's daily lives and should be handled with care. While benefiting from the advantages offered by technology, managing internet use in a controlled and balanced manner will contribute to women's balance in both their personal and professional lives. Awareness, digital literacy and conscious internet use stand out as important steps in combating internet addiction. A healthy balance in women's relationships with the Internet will contribute to their mental and social well-being.

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REPRODUCTIVE HEALTH POLICIES and SERVICE MODELS in AROUND the WORLD and TURKEY

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ABSTRACT

Reproductive health is a broad area that includes individuals' access to health services, level of knowledge and health outcomes on issues such as sexually transmitted infections, family planning, contraception, fertility services and pregnancy. Reproductive health policies and service models are accepted as indicators of the views and attitudes of service providers in a country regarding women's health and reproductive health and the importance attached to this issue. Countries can determine period-specific or city/state-specific policies or include the entire population in this policy. Literature review method was used in the study. The scope, applicability and effectiveness of reproductive health services were analysed by examining publications, official reports and policy documents with national and international support. In addition, the focus was on improving the health outlook and dissemination of service models for vulnerable groups. The study shows that countries' reproductive health policies have a direct impact on the accessibility and quality of health services. In particular, regional and periodic differences were found to be combined in shaping the pattern. For an effective reproductive health policy, the attitudes, training and infrastructure support of health service providers have critical users. In addition, the development and dissemination of service models is considered as an important factor for the sustainability of the health system. Policies are determined according to the needs of the population and it is recommended to prioritise vulnerable groups. In line with the policies, it is important to develop service models and disseminate these models in order to increase functionality.

Keywords: *Reproductive health, Policies, Reproductive health models, Nursing*

(Bildiri Kodu)----------

INTRODUCTION

The Concept of Reproductive Health

The Ministry of Health, General Directorate of Mother and Child Health and Family Planning defines reproductive health as women and men having a satisfying and safe sexual life, having the ability to reproduce, and having the freedom to use their reproductive skills and make decisions about the frequency (Mother and Child Health and Family Planning, 1994). According to the World Health Organisation (WHO) definition, reproductive health is not only the absence of disease, dysfunction or disability in sexual matters, but also a state of complete physical, emotional, mental and social well-being (WHO, 2017).

WHO has established a programme on reproductive health and set some goals for this programme. The objectives of the program are to enable individuals to experience healthy, equal, and responsible relationships and sexuality, to develop their capacity for healthy sexual development and maturation, and to ensure that they can make reproductive decisions (regarding the number and timing of children) in a safe and healthy way (Akın, 2012). It also includes ensuring that individuals can receive appropriate counselling, disease and disability prevention and care and rehabilitation when needed in relation to sexual and reproductive health (Mother and Child Health and Family Planning, 1994).

Developmental Process of Reproductive Health Concept

The concept of reproductive health was first brought to the agenda at the International Conference of Population and Development (ICPD) in Cairo in 1994 with was by attendet by 179 countries. At this meeting, it was pointed out that people in many countries live in conditions that do not allow them to protect their reproductive health and that they cannot exercise their reproductive rights. The principle that states taking necessary measures to increase accessibility to services related to reproductive health was accepted. At the 4th World Conference on Women held in Beijing in 1995, the concept of reproductive health was brought to the agenda again and the concept of gender equality was discussed in addition to the strengthening of women's reproductive health.

Since the world population was approximately 1.6 billion in the 1900s and 6.1 billion in the 2000s, population policies have been developed by states since the 1960s in order to control population growth. Action plans were prepared after the third (1974) of the conferences organised by the United Nations (UN) for the first time in 1954 and held every ten years (UNFPA, 2007).

In the International Conference of Population and Development (ICPD), it was concluded that development in social education and health could be achieved by meeting the health needs of women and empowering them, and that individual development and sustainable development were proportional to population (Toker, 2023; UNFPA, 2007). In ICPD, the objectives of the action plan prepared for 20 years were determined as follows:

-Universal education,

-Family planning

- Reducing maternal mortality

- Reducing infant and child mortality and

- Accessibility to reproductive and sexual health services.

Another action plan created was the 4th World Conference on Women held in Beijing in 1995, where the results of the ICPD conference were emphasised. The main topics of the action plan were determined as empowerment of women, family planning, prevention of gender discrimination, prevention of violence against women, and the relationship between reproductive health and development and population. It is emphasised that reproductive health services should cover individuals of all ages through basic health services (Sert, 2013).

Reproductive Health Policies in Turkey

Reproductive health policies basically aim to prevent sexually transmitted diseases and complications related to sexual/reproductive health in women and men, to reduce morbidity and mortality, to provide the education and counselling needed by individuals, to ensure that every pregnancy is a desired pregnancy, to prevent high-risk pregnancies and to ensure that young people acquire healthy sexual behaviours (Sert, 2013).

Population policies that significantly affect reproductive health have been established in Turkey. It is possible to divide the population policies of our country into three periods as 1923-1963 - the period in which policies to increase the population were implemented (natalist), 1964-1982 - the period in which policies to reduce the population growth rate were implemented (antinatalist), and the post-1982 period in which policies to increase the population were implemented (Ceylan, Azizoğlu, & Mustafa, 2023; Gökburun, 2020).

Countries develop action plans to reduce and eliminate sexual and reproductive health problems. The WHO Reproductive Health Programme, which covers the freedom to make decisions on healthy and safe sexual and reproductive health; the United Nations Millennium Development Goals, which aim to ensure family planning, safe motherhood, women's access to education/health opportunities without gender discrimination, and access to services related to reproductive health and sexually transmitted infections; Cairo Sustainable Development Goals, which aim to provide equal services in line with the 'Sustainable Development Goals', have been the main international themes that countries have benefited from in preparing action plans (Akın, 2012; Kılıçtepe, Saluk, & Mutlu, 2022; Özvarış, 2023).

In line with these three strategic plans, in the 'Sexual and Reproductive Health National Strategic Action Plan 2005-2015' created in our country, the priority problems under four main headings were determined as high maternal mortality, high number of unwanted pregnancies, increasing prevalence of Sexually Transmitted Infection/Human Immunodeficiency Virus/Acquired Immunodeficiency

Syndrome (STI/HIV/AIDS) and low levels of Sexual Health Natioanal in young people (Ceylan, Azizoğlu & Mete, 2023).

Reproductive health services to be provided in order to achieve the objectives of the reproductive health programme proposed by the Ministry of Health;

- Gaining responsible reproductive and sexual behaviour
- Effective control of genital infections
- Prevention of sexually transmitted infections and effective fight against AIDS
- Family planning services (information-education-communication and counselling)
- Information training for adequate parenting
- Healthy motherhood; antenatal care, healthy birth, postnatal care and breastfeeding
- Prevention and treatment of infertility
- Prevention of unsafe abortions
- Prevention and treatment of genital malignancies
- Infant, child and adolescent health
- Adolescent sexuality
- Promoting a healthy lifestyle
- Regulation of environmental factors
- It includes the regulation of environmental, social, cultural and behavioural factors.

Increasing the participation of men, encouraging breastfeeding, developing new treatment methods, and improving gender equality are also within the scope of reproductive health services (Mother and Child Health and Family Planning, 1994; Akın, 2012; Beji, Kaya, & Savaşer, 2021).

Programmes and Projects on Women's Health Implemented by the Ministry of Health

*Pre-Marital Health Counselling: Within the scope of preventive health services, couples applying for marriage are screened for thalassemia and sickle cell anaemia. In addition, trainings on effective family planning methods, pregnancy and prevention of sexually transmitted infections are provided.

*Pre-natal Care Services Programme: includes pregnancy follow-up, which should be performed at least 4 times in non-risk pregnancies during pregnancy. It is carried out to protect the health of the mother during pregnancy and to reduce infant-maternal mortality.

*Iron and vitamin D Support Programme for Pregnant Women: This programme was initiated due to the risk of anemia due to iron deficiency, neural defects in the baby and vitamin deficiency in the mother. ~~With~~ As part of this support programme initiated in 2007, iron preparations are given from the 16th week of pregnancy until delivery and for 3 months after delivery. Vitamin D has been provided to all pregnant women and breastfeeding mothers since 2011.

*Mother-Friendly Hospital Programme: This programme aims to reduce maternal and infant mortality by ensuring healthy pregnancy, delivery under hospital conditions and post-pregnancy follow-up.

*Delivery-Cesarean Section Programme: The aim of this programme is to encourage safe delivery in hospitals in order to reduce the caesarean section rate. Within the scope of this programme, the mother is required to stay in the hospital for 24 hours in the postpartum period.

*Postnatal Care Programme: The aim of this programme is to follow up the possible causes of maternal and infant mortality and to reduce maternal and infant mortality through early intervention. Without a limit of 24 hours, it is ensured that the mother completes the full recovery process in the hospital.

*Maternal Mortality Monitoring Programme: In recent years, the country has become one of the 10 countries with the highest reduction in maternal mortality through increased preconception support and pregnancy preparation, pregnancy follow-up, safe delivery and postnatal care programmes. In 1990, the maternal mortality rate was 68 per 100,000 live births and in 2017 it was 14.4 per 100,000 live births. 'Provincial Maternal Mortality Detection and Prevention Unit' and "Provincial Review Commission" were established in each province, and "Maternal Mortality Preliminary Review Commission" and "Central Review Commission" were established within the Ministry of Health.

*Family Planning Programme: The aim is to provide information on effective family planning methods and to ensure accessibility of contraception methods.

*Providing Male Participation in Reproductive Health Services Programme: Trainings are provided in cooperation with the Ministry of Health, Turkish Armed Forces Health Command and UNFPA to ensure male participation in reproductive health in all military units throughout the country. The trainings are on family planning methods, reproductive health, sexually transmitted diseases, pregnancy and safe motherhood, gender equality and domestic violence.

* Guest Mother Project: With this project, it is ensured that pregnant women are hosted in the hospital in the nearest province 10 days before birth and return to their homes after birth if there is no qualified hospital in their own settlement (Mother and Child Health and Family Planning, 1994; Akın, 2012; Şimşek & Çakmak, 2019).

Reproductive Health Service Models

Individuals' healthy life development skills and disease prevention strategies are affected by health behaviours and each of the factors that change these behaviours. Models prepared and implemented for each age period and various risks have been developed.

Health Service Models in the World

The theoretical models are categorised into 4 thematic areas according to model purpose: generalised models of health service use, models tailored to specific sociodemographic determinants of

health, models tailored to specific diseases or health disciplines, and models tailored to preventive health services and screening. Some of these models are discussed as examples.

Vertical Service Provision Model

This means that health services are provided more intensively to those who need them most. This approach refers to the equitable distribution of costs and benefits among groups with different social or health status. In vertical equity, it is important to distribute resources and provide services taking into account the level of need (Manavgat, 2019). For example, since the needs of a patient with influenza and a patient with pneumonia are different, treatment and care are adapted accordingly. This ensures equality and equity in terms of access and utilization of healthcare services.

Horizontal Service Model

The concept that individuals with equal health needs should receive the same level of care and treatment regardless of their ability to pay is called the horizontal service model. This principle is important for ensuring fairness and equity in the use of health services (Braveman, 2006; Manavgat, 2019).The horizontal service model refers to the principle that individuals with similar health needs receive equal care and treatment services regardless of factors such as socioeconomic status, geographical location, age and ethnicity in health services. This approach forms an important basis for ensuring justice and equality in health services. For example, a patient should be able to receive the same quality and scope of care and treatment for the same illness, regardless of whether they are rich or poor. In this way, a fair environment is created for everyone in accessing and utilising health services.

Whole Healty models (WH Holistic Health Model)

The aim of Whole Health (WH) Models is to move from a disease-focused system to a system that emphasises health promotion and disease prevention, while at the same time promoting the use of Complementary and Integrative Health. The three components of the WH model of care are called the pathway, well-being programmes and clinical care.

The pathway serves as an entry point for patients and aims to engage individuals in their own healthcare. The pathway consists of introductory and health education classes taught by Veteran peers. Well-being programmes include personal care classes and Full Health Coaching. Clinical care includes patient care needs required by the patient. It is thought that sexuality-related communication between the patient and the health professional, which cannot be openly established due to various barriers, creates a gap in data collection. Since the focus of patient care and health professionals is seen as diseases and treatments, deficiencies related to data collection arise. This model, the patient will be able to access their own health database and share the necessary information without feeling inhibited / embarrassed (Phillips, Cockrell, & Parada, 2018; Ring & Mahadevan, 2017; Wolever, et al., 2017).

M-Health Service - Mobile Clinic Service Delivery Model

The mobile clinic service delivery model provides primary healthcare services to Indigenous populations through mobile clinics. It is widely implemented in high-income, colonized countries such as Australia, Canada, and the United States. These mobile clinics aim to reduce health disparities experienced by Indigenous Peoples (e.g., high disease prevalence and barriers to healthcare access such as racism and transportation issues) while incorporating Indigenous perspectives and adhering to rigorous scientific and ethical evaluations. The implementation of service delivery models addressing the healthcare needs of Indigenous Peoples should be community-based and aligned with the role of managed healthcare services.

In Australia, to meet this need, there are more than 140 Aboriginal Community-Controlled Health Organizations (ACCHOs), geographically located within individual communities and managed by Aboriginal and Torres Strait Islander communities. These health organizations are highly valued by Aboriginal and Torres Strait Islander individuals as they provide culturally safe and comprehensive care (Beks, et al., 2022; Malone et al., 2020; Sadegh, et al., 2018).

Integrated Youth Services Delivery Model

The Integrated Youth Services (IYS) delivery model is rapidly expanding worldwide, including in Canada. These models seek to integrate various service components and characteristics deemed youth-friendly, continuously striving to establish themselves as youth-centered environments. The primary goal is to make these service settings as comprehensive as possible. Accordingly, IYS models focus on a wide range of services addressing youth mental health and substance use needs, while also considering crucial factors such as employment, education, housing, and other social determinants of substance use (Hawke et al., 2021; Klymkiw, et al., 2024).

A Community-Based, Co-Designed Genetic Health Service Model

This service delivery model encompasses four key themes:

- Client-led approach,
- Acceptance of perspectives on genetic disease causes,
- Focus on relationships, continuity, and trust between service providers and clients, and
- Inclusivity of the entire family.

The model adopts a community-based, person- and family-centered approach to effectively deliver specialized genetic health services in remote community settings. It primarily targets isolated Indigenous communities, aiming to reduce the prevalence of genetic diseases through community-based genetic education sessions. These sessions are conducted in locations where individuals feel connected, comfortable, and safe, such as under trees or on verandas within their communities (Dalach et al., 2021; Elsum et al., 2020).

CONCLUSION

Globally, policies regarding reproductive and sexual health are established to regulate population policies and ensure healthcare accessibility. Regardless of whether policies are horizontal, vertical, holistic, or specialized, the primary objective is to achieve standardization and provide adequate healthcare services. While patient care involves disease treatment, reproductive and sexual health topics are often stigmatized, leading to insufficient data collection and inadequate counseling.

Nurses, as healthcare professionals, play a crucial role in adopting a holistic approach to reproductive health by collecting comprehensive data and providing care, counseling, and guidance in accordance with national policies. It is recommended that nurses, as both community members and frontline caregivers, conduct research to contribute to the formation and modeling of national policies on women's health and reproductive/sexual health. Furthermore, nurses should assume an evidence-based leadership role by utilizing research findings to inform policy development and improve healthcare services.

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LINK between CLINICAL PHENOTYPES and DISEASE MECHANISMS in ASTHMA

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ABSTRACT

Asthma is a complex, chronic inflammatory disease of the airways, leading to symptoms such as shortness of breath, wheezing, cough, and chest tightness, often associated with variable airflow obstruction and airway hyperresponsiveness (AHR). In severe cases, patients become more sensitive to environmental triggers, including pollutants, tobacco smoke, allergens, and respiratory infections, leading to altered tissue repair mechanisms like mucus cell metaplasia, smooth muscle proliferation, and fibrosis. Genetics play a significant role in asthma development, with gene-environment interactions influencing the disease through epigenetic changes. Understanding the mechanisms behind these processes could help develop more targeted, patient-specific therapies. This systematic review was conducted following the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) guidelines. A comprehensive literature search was performed using PubMed, Scopus, Web of Science, and Embase databases to identify relevant studies. The review examines airway remodeling, immune cell interactions, and molecular pathways contributing to asthma progression. In terms of histological findings, the review focused on identifying and characterizing changes in the airway epithelium, specifically goblet cell hyperplasia, mucin production, epithelial cell proliferation, and thickening of the basement membrane. Additionally, studies investigating immune responses were analyzed, with particular attention given to the roles of Th2 cells, eosinophils, Th1 cells, neutrophils, and the influence of viral and bacterial pathogens on asthma progression. Based on findings from asthma biopsies and bronchial epithelial cell cultures, targeted therapies aimed at regulating airway epithelium function could offer valuable insights into modifying the natural progression of the disease and potentially reducing adverse effects in patients. Therefore, a comprehensive understanding of the molecular mechanisms underlying asthma, including epithelial function and disease progression, is crucial for identifying distinct biomarkers that can inform and optimize therapeutic strategies.

Keywords: *Neutrophilic asthma, Sputum eosinophils, Th2-high asthma*

INTRODUCTION

In the early 1960s, Guy Scadding, the founding Professor of Medicine at the Institute of Diseases of the Chest in London, introduced the first official definition of asthma. He defined the condition as one marked by significant and rapid fluctuations in airway resistance, which could occur over short time spans. This definition was later embraced by the American Thoracic Society (Hargreave & Nair, 2009). By the early 2000s, asthma was increasingly understood as a condition marked by chronic airway inflammation. This ongoing inflammation results in a diverse range of symptoms, such as difficulty breathing, , coughing, wheezing and tightness in the chest (Koczulla et al., 2017). Asthma is typically associated with unpredictable airflow obstruction and airway hyperresponsiveness (AHR), which may occur spontaneously or be reversible with therapeutic intervention (Mims, 2015). This systematic review intends to consolidate existing research on the cellular and molecular mechanisms driving the development and progression of asthma, with an emphasis on key inflammatory pathways, immune cell interactions, genetic influences, and their therapeutic implications. Additionally, this review will explore the challenges in classifying asthma subtypes and how understanding these mechanisms can inform future therapeutic strategies.

MATERIALS and METHODS

This systematic review was conducted in accordance with the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) guidelines. A comprehensive and systematic literature search was conducted across multiple databases, including PubMed, Scopus, Web of

Science, and Embase, to identify relevant studies currently available. The focus of the review was on airway remodeling, immune cell interactions, and molecular pathways contributing to the progression of asthma.

Studies incorporated in this review were chosen based on specific predetermined criteria, focusing on their relevance to asthma pathophysiology, mechanisms of airway remodeling, immune cell participation, and the involvement of molecular pathways in disease progression. Both observational and experimental studies were considered. Data were extracted on key findings regarding asthma subtypes, phenotypic classifications, and molecular biomarkers related to disease progression. The studies included in this review was evaluated using appropriate tools to identify any potential biases.

RESULTS

As asthma progresses, patients with severe forms of the disease become increasingly sensitive to environmental factors, including pollutants, tobacco smoke, chemicals, drugs, allergens, and respiratory infections caused by viruses. Moreover, these patients exhibit a changed repair response, characterized by the secretion of growth factors that trigger metaplasia in mucus- secreting cells,

promote the growth of smooth muscle and nerve cells, and lead to angiogenesis and fibrosis. These processes resemble the characteristics of a chronic wound (Holgate, 2012).

Genetic and Environmental Factors in Asthma Development

Genetics plays a crucial role in the onset of asthma, with heritability estimates ranging from 35% to 95%. The expression of asthma is influenced by gene-environment interactions and epigenetic changes, which affect how genetic information is translated into biological outcomes. However, the exact cause of asthma remains unclear (Carole Ober and Tsung-Chieh Yao, 2012) (Figure 1). Such specific data are valuable for classifying asthma into various syndromes, phenotypes, and diseases, rather than recognizing it as a single condition (Wenzel, 2012).

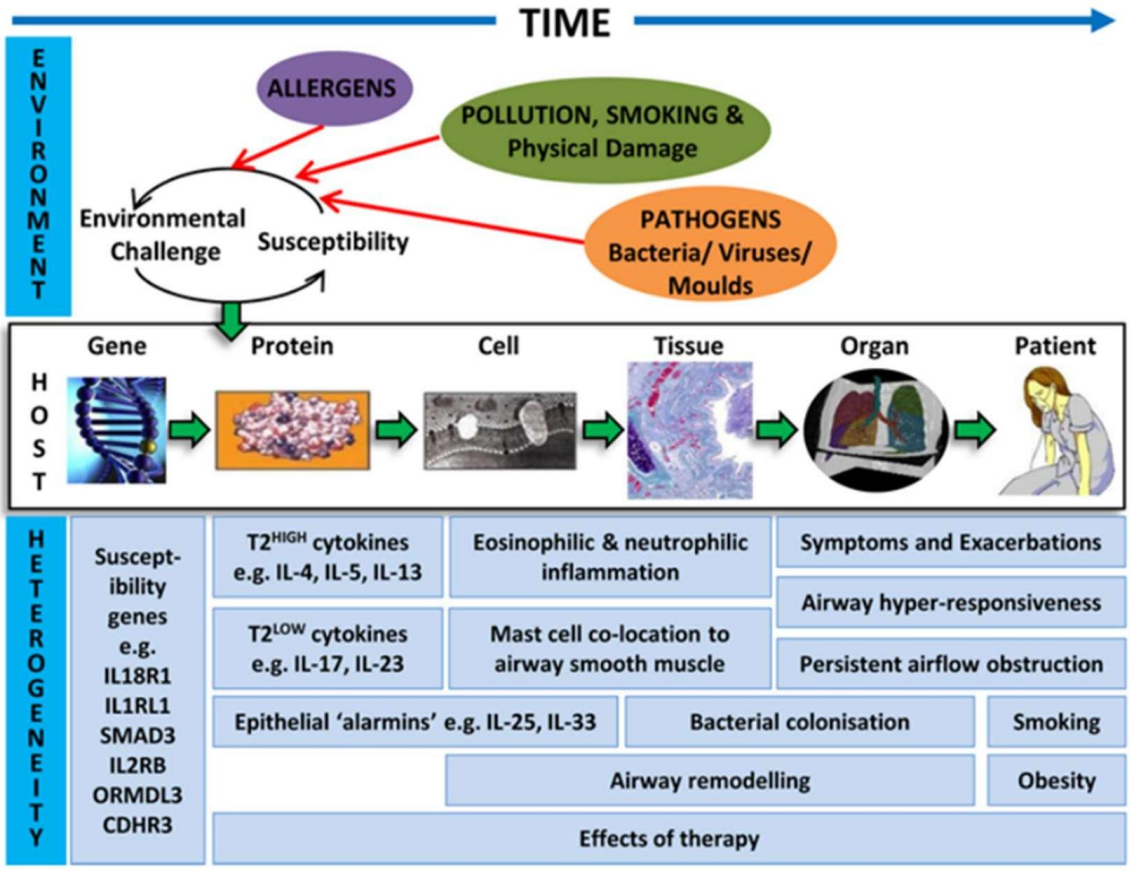

Figure. 1: Illustration of the environmental triggers and genetic influences on asthma, highlighting their impact on individuals with the condition (Russell & Brightling, 2017).

Asthma has become a significant public health issue worldwide due to its economic burden on countries and the challenges associated with its treatment, despite recent advancements in anti-asthmatic therapies. The prevalence, morbidity, and mortality rates of asthma continue to rise globally. According to the Global Asthma Report 2018, over 339 million people are currently affected by asthma, with approximately 1,000 deaths occurring daily. Additionally, it is projected that another 100

million people will develop asthma by 2025 (Nie et al., 2019).

Airway inflammation is a key factor in the development of asthma, with pathological changes occurring due to the release of powerful inflammatory mediators and the activation of structural cells. These processes contribute to changes in the bronchial epithelium's reticular basement membrane, including fibrosis, which is characterized by an increase in smooth muscle cell thickness due to hyperplasia. Additionally, neo-angiogenesis leads to the formation of new bronchial blood vessels, and there is an increase in mucus-secreting cells both on the epithelial surface and in the bronchial glands (Figure. 2).

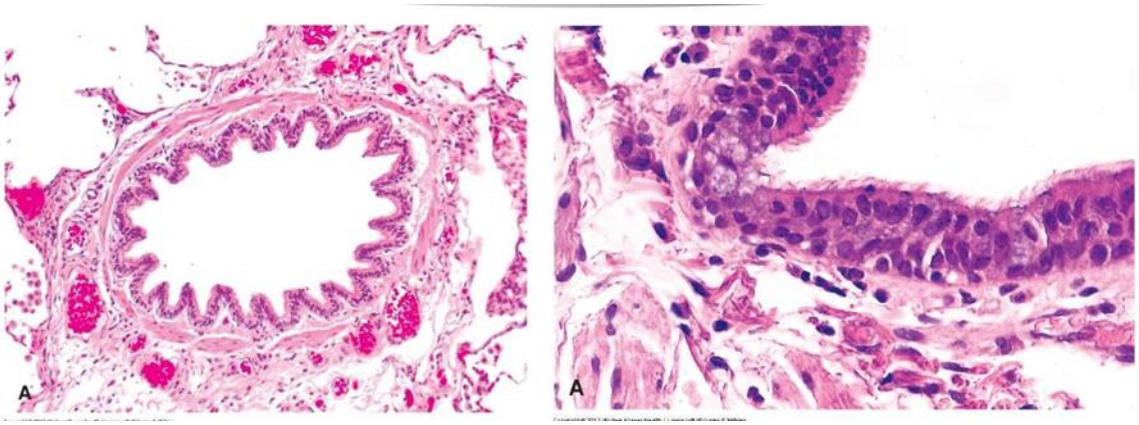

Figure. 2: Normal bronchioles showing a thin layer of connective tissue and the presence of goblet cells (Histology for Pathologists, 4th Ed., Stacey E. Mills).

These changes, collectively referred to as airway remodeling, may become irreversible. Chronic inflammation in the airways is often associated with an elevated presence of T-helper (Th) type 2 lymphocytes, macrophages, dendritic cells, mast cells, monocytes, and eosinophils. In contrast, acute inflammation in asthma is characterized by elevated eosinophils and neutrophils (Caramori et al., 2013).

Histological and Immune Mechanisms in Asthma Progression

A key histological characteristic found in the epithelium of individuals with asthma is the hyperplasia or metaplasia of goblet cells, which occurs regardless of the disease's intensity. MUC5AC, the predominant mucin in the airways, is secreted by cells that produce mucinous glycoproteins (MUC). Asthmatic patients often show increased levels of epithelial cells in sputum and bronchoalveolar lavage (BAL) fluid. The hyperplasia in bronchial epithelial cells is thought to contribute to mucosal thickening, although the precise mechanisms underlying this hyperplasia are not fully understood. The increased Ki-67 proliferation index indicates that asthma is linked to greater epithelial cell proliferation. The thickening of the reticular basement membrane (RBM) is mainly

caused by the deposition of immunoglobulins, collagen types I and III, fibronectin, and tenascin (Rubin, 2014). It has been proposed that allergen-induced asthma is mainly linked to Th2 immune responses and the involvement of eosinophils in both children and adults. However, in older patients, the progression of asthma may be influenced by epigenetic factors and exacerbated by viral and bacterial infections, rather than allergens. In these cases, Th1 and/or Th2 responses, along with neutrophil involvement, are more dominant (Brar et al., 2012). Epithelial cells express pattern recognition receptors that trigger the release of cytokines and chemokines (Lambrecht & Hammad, 2012). Therefore, understanding the underlying molecular mechanisms, including epithelial function and the progressive stages of asthma, is crucial for identifying unique biomarkers. These biomarkers can then guide the selection of appropriate therapeutic strategies.

Asthma is commonly marked by the accumulation of eosinophils, mast cells, and CD4+ T lymphocytes, which secrete interleukin-4 (IL-4) and interleukin-5 (IL-5) into the epithelium and lamina propria (Lambrecht & Hammad, 2012). The inflammatory response, mediated by Th2 cytokines, leads to eosinophilic airway inflammation and bronchial hyperresponsiveness. This response has been seen in about 50% of individuals with asthma (Lloyd & Hessel, 2010). IL-13 also plays a role in activating inflammation within the epithelium, enhancing the recruitment of eosinophils by upregulating chemokines like CCL11. Other chemokines, such as CCL2, CCL3, and CCL6, have been implicated in lung fibrosis in various studies. Moreover, chemokines like CCL5 and CCL11 contribute to the recruitment of eosinophils to the airways. Once eosinophils are recruited, they present antigens to T cells and interact with growth factors like TGF-β, which plays a crucial role in the inflammatory process (Ishmael, 2011). Conversely, in some patients with a poor response to steroids, airway infiltrates are predominantly made up of neutrophils. This may result from the activation of cells like Th17 lymphocytes or γδT cells, which secrete IL-17 into the airways (Lambrecht & Hammad, 2012). Additionally, the epithelial cells in the airways release interferon-β and interferon-λ as a response to rhinovirus infection (Hartley et al., 2014). Furthermore, thymic stromal lymphopoietin (TSLP), along with the release of IL-25 and IL-33, activates downstream T cells and type 2 innate lymphoid cells (ILC2s). TSLP also stimulates dendritic cells, fostering an environment that enhances Th2 responses. In addition, IL-4 activates B-cells, prompting the production of specific IgE. This IgE binds to the surfaces of mast cells and basophils, initiating the release of inflammatory mediators such as serotonin, histamine, and tryptase, which contribute to mucus hypersecretion. Mast cells also release prostaglandin D2, a lipid mediator that intensifies the inflammatory response via CRTH2, leading to an increase in eosinophils and their degranulation by T2 cytokines (Kaur & Chupp, 2019).

Classification of Asthma Subtypes and Phenotypes

Various efforts have been made to categorize asthma subtypes, with phenotypes defined by observable and measurable characteristics shaped by both genetic and environmental influences. Over

the years, the nature of the disorder, its triggers, and aggravating factors have been used to distinguish different asthma phenotypes (Tyler & Bunyavanich, 2019). Recent research utilizing cohort analyses and clustering methodologies has identified four primary asthma phenotypes: mild allergic asthma with early onset, moderate-to-severe remodeled allergic asthma with early onset, eosinophilic non-allergic asthma with late onset, and non-eosinophilic non-allergic asthma with late onset (Figure 3).

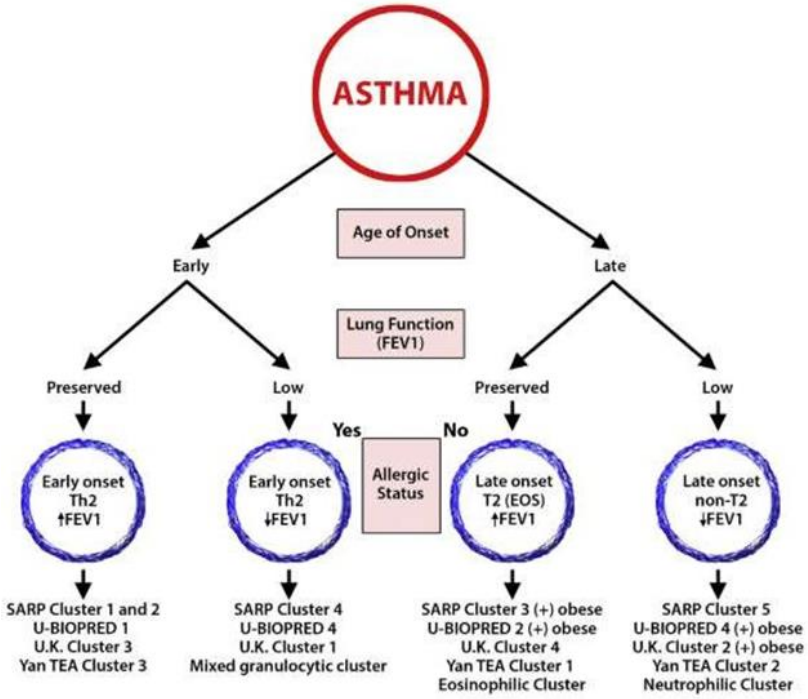

Figure 3: Asthma phenotypes classified based on clustering analysis (Kaur & Chupp, 2019).

These phenotypes are associated with factors such as the patient's age at disease onset, atopic conditions (allergic), and lung function, with eosinophil presence serving as a key biomarker. Over time, these phenotypes have been further refined into: mild early-onset allergic asthma, moderate early-onset allergic asthma, late-onset eosinophilic non-allergic asthma, severe early-onset eosinophilic allergic asthma, and late-onset non-allergic neutrophilic severe asthma. These refinements reflect persistent airflow obstruction and a corresponding inflammatory response (Kaur & Chupp, 2019).

The connection between asthma and allergy-sensitive loci, especially the 17q21 chromosome, along with the ORMDL3 and GSDML genes, provides valuable insights into phenotypic subtypes, particularly in childhood-onset asthma, and may help inform the development of targeted or effective therapies (Carole Ober & Tsung-Chieh Yao, 2012). Asthma phenotypes are typically divided into two main categories: non-allergic (intrinsic) asthma and allergic (extrinsic) asthma. Early-onset allergic asthma is usually progressive, affecting children and young adults, while non-allergic asthma is more prevalent in older individuals. The early-onset allergic phenotype can be recognized by elevated

levels of serum-specific IgE and positive allergy skin tests. However, skin tests may not always be accurate, as up to 50% of patients may show positive results that are not clinically significant. The Th2 immune response in this group is not as well understood when compared to non-allergic forms. Late-onset eosinophilic asthma in adults is often resistant to corticosteroids and is characterized by significant eosinophilia in both blood and sputum. While atopy is generally absent, this phenotype can be identified by increased levels of IL-5 and IL-13, particularly from ILC2 cells (Caitlin A. Moran, 2017).

Diagnosis and Biomarkers in Asthma Management

Accurate diagnosis and monitoring of asthma are crucial for identifying patients with different subtypes, as improper recognition of the disease increases the risk of mortality (Jones et al., 2018). Peak expiratory flow rate (PEFR) is a crucial tool in managing asthma, particularly for evaluating inadequate control due to fluctuating airflow obstruction. Pre- and post- bronchodilator spirometry are valuable in evaluating reversibility, which is typically shown by an increase in expiratory volume (Jones et al., 2018). Biomarkers are becoming more essential for distinguishing between asthma phenotypes and endotypes. Various Th2 inflammatory biomarkers, including eosinophil analysis in blood, sputum, and bronchoalveolar lavage (BAL) fluid, exhaled nitric oxide (FENO) levels, and specific IgE tests, are helpful for identifying Th2-driven inflammation (Figure 4).

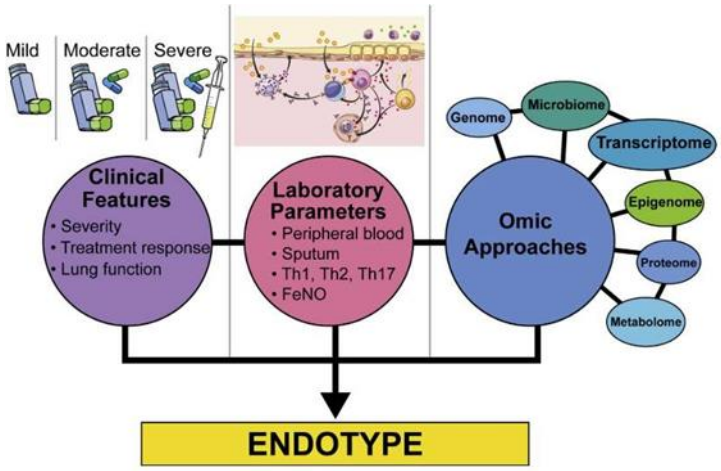

Figure 4: Approaches for clearly analyzing asthma endotypes (Tyler & Bunyavanich, 2019).

However, at present, there is no dependable method to differentiate between endotypes or predict their inflammatory responses (Fig. 3) (Agache & Akdis, 2019). Periostin, an extracellular matrix protein that plays a role in fibroblast activity and is expressed in response to IL-4 and IL-13, has been identified as a biomarker for chronic eosinophilic airway inflammation in asthma. While it is linked to corticosteroid use, it is not specifically associated with severe asthma. Consequently, serum periostin could serve as a useful marker for evaluating responses to anti-Th2 therapies (Kim et al.,

2013). On the other hand, airway epithelial cells, along with other cells residing in the airways, produce nitric oxide via nitric oxide synthase, which can be measured in exhaled breath as part of the assessment of eosinophilic airway inflammation. However, fractional exhaled nitric oxide (FENO) levels do not provide direct insight into the percentage of eosinophils present in sputum. Atopy biomarkers, such as serum IgE levels and skin tests, have been shown to correlate with specific IgE levels in individuals with allergic asthma (Kaur & Chupp, 2019). For non-Th2 asthma, the biomarkers are more limited. Key markers include IL-6, YKL-40, and sputum and serum IL-17. IL-6 has been clinically associated with obesity-related asthma by modulating the Th17 pathway, while serum YKL-40, a chitinase-like protein, is linked to neutrophil levels (Peters et al., 2016).

Current and Emerging Asthma Therapies

Asthma treatment currently involves a standard approach of inhaled corticosteroids combined with a long-acting bronchodilator. While these therapies are effective in controlling symptoms, they do not tackle the underlying progression of the disease. Inhaled corticosteroids are particularly effective in patients with Th2-driven asthma, which is marked by IL-13 activation in bronchial epithelial cells. These cells express genes such as Serpin B2, periostin, and CLCA1, which are associated with Th2 inflammation (Ramadas et al., 2011). Cytokines such as TSLP, GM-CSF, IL-25, IL-33, IL-1, EGF, and TGF-β represent potential therapeutic targets for reducing allergic susceptibility and slowing the progression of asthma. Targeted therapies focusing on controlling the airway epithelium, informed by asthma biopsy and bronchial epithelial cell cultures, could offer valuable insights into altering the disease's natural progression while minimizing unwanted side effects for patients (Lambrecht & Hammad, 2012). In efforts to better understand severe asthma, new molecular targets identified through human omics are being tested for their roles, functionality, and interactions with various pathways. These integrated approaches hold promise for developing more personalized, phenotype-specific asthma treatments (Wenzel, 2012). Phenotype-driven therapy began with the development of mepolizumab (an anti-IL-5 monoclonal antibody) for eosinophilic asthma. However, patients without a Th2 signature tend to show poor responses to treatments such as inhaled fluticasone (Fajt & Wenzel, 2015).

DISCUSSION

The findings from this systematic review underscore the complexity of asthma's pathogenesis. The chronic airway inflammation, driven primarily by Th2 responses, is a critical factor in the disease’s progression. Cytokines such as IL-4, IL-5, and IL-13 play essential roles in promoting eosinophilic inflammation and mucus production, which contribute to airway remodeling and fibrosis. However, the increasing recognition of non-Th2 asthma phenotypes, including neutrophilic asthma, calls for broader research into alternative immune pathways and the development of therapies that

target these different inflammatory mechanisms.

Asthma's genetic underpinnings are still being explored, but emerging evidence suggests that gene-environment interactions, particularly those involving immune response genes, are pivotal in determining disease susceptibility and progression. This finding has important implications for identifying individuals at risk for developing asthma and for developing targeted therapies. The phenotypic classification of asthma has advanced significantly, with distinct subtypes now recognized based on age of onset, atopy, and eosinophilic or neutrophilic inflammation. These distinctions are vital for personalized medicine, as they enable clinicians to better tailor treatments to individual patients based on their specific inflammatory profiles.

Despite the progress, several gaps remain in understanding the complete molecular mechanisms of asthma. In particular, the role of the epithelium and other structural cells in the disease process requires further investigation. Moreover, the variability in treatment responses highlights the need for improved biomarkers to guide therapeutic decisions, particularly for non-Th2 asthma subtypes, which are often less responsive to current treatments.

CONCLUSION

This systematic review highlights the complexity and heterogeneity of asthma, emphasizing the role of cellular inflammation, genetic factors, and phenotypic subtypes in its pathogenesis. While significant advances have been made in understanding the disease mechanisms, particularly in Th2-mediated asthma, more research is needed to fully elucidate the molecular processes in non-Th2 asthma. The identification of biomarkers and the continued development of personalized treatment strategies are essential for improving asthma management and outcomes. Future research should focus on unraveling the molecular pathways involved in different asthma phenotypes, with the aim of developing more effective and targeted therapies for all patients, regardless of their inflammatory profile.

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CURRENT APPROACH in CHILDHOOD MYOPIA

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ABSTRACT

Myopia is a refractive error that begins in childhood and continues to progress until the body stops developing. It has been reported that the incidence of myopia is gradually increasing and by 2050, half of the world's population will be myopic and 10% of them will be high myopic. In this review, we discuss current approaches to reduce the incidence and slow the progression of myopia. 'Pubmed' databases were searched and studies between 2000- 2025 were analyzed. In the literature, it has been reported that environmental risk factors such as close activity duration, close working distance and spending time indoors cause an increase in the axial length of the eye, initiating myopia and causing myopia progression. It has also been reported that standard lenses used in myopia correction cause hypermetropic defocus in the retinal periphery, leading to an increase in axial length. It has been shown that the progression of myopia can be slowed when environmental risk factors are reduced by behavioral measures and that atropine drop therapy, red light therapy, specially designed contact lenses and myopia control lenses can slow axial elongation and progression of myopia. The success rate of specially designed myopia control lenses for myopia control is over 50%. The current approach is to prevent or delay the onset of myopia and to slow down the rate of progression if myopia has already started. Informing opticians and the general public about this issue may reduce the expected increase in the incidence of myopia.

Keywords: *Axial length, Eye health, Glasses lenses, Myopia, Myopia control*

INTRODUCTION

Myopia is a refractive error that begins in childhood and continues to progress until body development stops, and its frequency increases with modern living conditions. Predictions indicate that by 2030, one-third of the global population will be myopic, and by 2050, half will be affected, with 10% classified as highly myopic (Holden et al., 2016). High myopia-related complications can lead to permanent blindness (Bullimore et al., 2021; Dolgin, 2015). This review discusses current approaches to reducing the incidence and slowing the progression of myopia.

Genetic, ethnic, and environmental risk factors play a role in myopia development. These factors are interdependent, but the only independent risk factor is an early onset of myopia (Eppenberger et al., 2024). Therefore, our first aim should be to prevent or delay the emergence of myopia, especially in risky cases, by reducing environmental risk factors. Known environmental risk factors include prolonged near work, close viewing distances, insufficient outdoor time, and inadequate lighting (Cooper et al., 2018; Morgan et al., 2021). If myopia cannot be prevented, the secondary aim should be to slow its progression. Current strategies include myopia control spectacle lenses, myopia control soft contact lenses, orthokeratology rigid gas permeable lenses, atropine eye drops and red light therapy (RLRL) (Eppenberger et al., 2024).

MATERIALS and METHODS

This review includes studies and reviews investigating risk factors for childhood myopia and methods to slow the progression of myopia, and evaluating the increase in axial length and spherical equivalent as criteria for myopia progression. The keywords 'Myopia', 'Atropine', 'Eyeglasses', 'Contact lenses' and 'Orthokeratology' were used and studies in the 'Pubmed' database between 2000 and 2025 were searched. Studies investigating risk and progression in index myopia and adult myopia were excluded. Statistical data analysis was not performed in this review.

RESULTS

Risk Factors for Myopia

Studies have reported that early education, excessive homework in preschool, frequent near activities, and examination periods contribute to myopia progression (Cooper et al., 2018; He et al., 2021). Spending less time outdoors is the most effective modifiable risk factor (Dhakal et al., 2022). Research suggests that spending at least one hour per day outdoors slows myopia progression (Li et al., 2024). A recent systematic review indicates that increased exposure to outdoor light reduces the incidence of myopia; however, its effect on myopia progression remains uncertain (Dhakal et al., 2022).

Insufficient ambient lighting is also a modifiable risk factor. Typical indoor lighting ranges from 100-500 lux, while optimal study conditions recommend 1000 lux or more (Wu et al., 2018).

Additionally, closer working distances are associated with higher myopia risk.

According to the Sydney Myopia study, a working distance closer than 30 cm (Ojaimi et al., 2005), and according to the International Myopia Institute report, closer than 20 cm (Gifford et al., 2019) increases the risk. Continuous near-work activity is also a modifiable risk factor. According to the Sydney Myopia Study, the risk of myopia increases when the duration of near work is more than 30 minutes without a break (Ojaimi et al., 2005), and according to the report of the International Myopia Institute, more than 45 minutes (Gifford et al., 2019).

Children with myopic parents are at a significantly higher risk of developing myopia. The prevalence of myopia is approximately 7% in children without myopic parents, 14.9% if one parent is myopic, and 43.6% if both parents are myopic (Ip et al., 2017). Other risk factors are birth order, season, urban life, less sleep, good socioeconomic status, height-intelligence, physical activity, smoking, diet, pollution, but there is not enough evidence.

Binocular vision disorders are also a risk factor for myopia. However, the relationship between accommodation and convergence and the development of myopia is poorly understood. It has been reported that myopic children have a higher accommodative convergence/convergence ratio (AC/A) and that children with esophoria and a high AC/A ratio are 20 times more likely to develop myopia in one year (Mutti et al., 2000). There is no consensus on the effect of managing these disorders on myopia development.

Some children may be predicted to have myopia in the future during eye examinations. If the refractive error in the child is not normal for the child's age, that is, if the amount of hyperopia is low for the child's age, these children are candidates for myopia (Premyopia) (Gifford et al., 2019).

Myopia Management Options

Myopia Control Spectacle Lenses

There are many options for myopia management. Spectacle lenses should be the first choice because they are simple and safe, easy adaptation, no rebound, randomized controlled studies and long-term studies. Defocus Incorporated Multiple Segments (D.I.M.S.) and Highly Aspherical Lenslets (H.A.L.) technology myopia control lenses are myopia control lenses with long-term results. In the 6-year results of D.I.M.S. technology lenses, it was reported that myopia increased less than -1.00 diopter in 6 years, axial elongation was 0.60 mm, the effect continued for 6 years, no side effects were observed, visual functions were not impaired and there was no rebound effect (Lam et al., 2023). With H.A.L. technology lenses, it was reported that myopia control continued at the end of the 3rd year, with an average effect of 1.06 diopters in myopia and 0.49 mm in axial elongation (Li et al., 2023).

In clinical studies with these lenses, it was reported that peripheral retinal contrast decreased, which may have a positive role in myopia control (Papadogiannis et al., 2023), moderate peripheral blurred vision may occur 1-2 times a day (Lu et al., 2020) and contrast sensitivity may be 0.12±0.20

logCS lower in nasal gaze and -0.18±0.20 logCS lower in temporal gaze (Kaymak et al., 2022).

Myopia Control Soft Contact Lenses

There are daily, monthly and annual types. Of these, only daily lenses have FDA approval. They are bifocal concentric ring lenses. The myopia control effect is approximately 50% (Chamberlain et al., 2022). As with myopia control lenses, there is no rebound effect in myopia control soft lenses. They can be used alternately with myopia control lenses (Bullimore et al., 2025). Care should be taken especially in terms of hygiene.

Orthokeratology (Sleep lens / Night lens)

They are rigid gas permeable lenses with an inverted geometric design. It is an effective treatment (˜50%) option for myopia control. There is temporary flattening in the central cornea and steepening in the periphery. The cornea is reshaped. However, the ocular surface should be healthy, the patient's compliance should be good, attention should be paid to infection and regular follow-up should be performed (Cooper & Tkatchenko, 2018). It can be preferred especially in patients with myopia in one eye and children and young people who do water sports. It has a rebound effect.

Red light therapy (RLRL)

It is a simple and effective treatment. 650 nm red light is used at 1600 lux light intensity. The application is done at home. The child looks at the red light inside the device for 3 minutes twice a day, 5 days a week. A decrease in spherical equivalent was observed in 16% of the cases and a shortening in axial length in 23%. The effect is thought to be related to thickening of the choroid by reducing scleral hypoxia (Dong et al., 2023). In one study, a low-level red light therapy device was examined for thermal and photochemical damage at the maximum permissible exposure and 3 minutes of continuous gaze was reported to be risky for the retina (Ostrin & Schill, 2024).

Atropine eye drops

It is an effective option, the effect is not through accommodation. There is remodeling in the sclera. Side effects and rebound effects increase as the dose increases. In a meta-analysis, the most useful dose to control myopia in terms of efficacy and safety was reported to be 0.05% (Ha et al., 2022). Myopia control is above 50%.

DISCUSSION

In this review, it was reported that there are some modifiable and non-modifiable risk factors in the development and progression of myopia and that the risk of myopia can be reduced by changing environmental risk factors (Cooper et al., 2018; Dhakal et al., 2022; He et al., 2021; Li et al., 2024). It has also been stated that myopia control lenses, which are among the options that slow the progression

of myopia, should be preferred first.

Studies have reported that increasing the time spent outdoors is the most important modifiable risk factor (Dhakal et al., 2022). The effect of daylight is multifactorial. The mechanism is believed to involve increased retinal dopamine release, slowing axial elongation, and reducing aberrations by constricting the pupil. At the same time, less near-work activity and less need for accommodation may also play a role in myopia control (Rose et al., 2008). Continuous near-work activity and short working distances increase the risk of myopia, but the mechanism is not clear. Delayed accommodation and hyperopic defocus may contribute to myopia progression.

The presence of myopia in the child's parents has been reported to increase the risk of developing myopia (Ip et al., 2017). However, this is not an independent risk factor, as lifestyle and environmental influences play a role. Myopia management should be started earlier, especially in children with a high genetic risk for myopia. The cause of myopia progression is multifactorial. Progression of myopia needs to be managed well. Because increasing degree of myopia makes life difficult. In addition myopic maculapathy increases by 58%, glaucoma by 20%, posterior subcapsular cataract by 21%, and retinal detachment by 30% with an increase of 1 diopter (Bullimore 2021).

Myopia control glasses are the first choice for myopia management. They have long-term studies, are effective, safe and have no rebound (Lam et al., 2023; Li et al., 2023). However these lenses are not suitable for children with high myopia, amblyopia, strabismus, nystagmus, low vision, children under 6 years of age, children who cannot adapt to the lens design, children who cannot wear glasses regularly and cannot attend follow-up, and children with index myopia such as keratoconus and spherophakia. In the examination, cycloplegia and subjective examination should be performed, axial length should be measured if possible, the number should be prescribed exactly, stereopsis and foria tests should be performed.

Myopia control soft lenses and orthokeratology may also be preferred for myopia control. However, parents and ophthalmologists should be more careful about contact lens infections. Red light therapy is also an effective treatment for myopia management. However, there are question marks about safety (Ostrin & Schill, 2024). It may be preferred more when the reliability problem is solved. Atropine treatment was quite popular until recent years. However its popularity has declined since the introduction of myopia control lenses. There is no FDA approval yet and there is ethnic variation in efficacy. In one study, 0.01% atropine did not show the expected effect in terms of myopia control in US children (Repka et al., 2023). In a recent study, patients who had previously used 0.01%-1.0% atropine drops for 2-4 years were reevaluated 10-20 years later and no difference was observed in terms of refractive errors and increased frequency of ocular complications (Li et al., 2024).

CONCLUSION

Myopia has become an epidemic, increasing with modern living conditions. Myopia control spectacle lenses, contact lenses, red light therapy and atropine drops can slow the increase in myopia. Of these options, spectacle lenses should be the first choice. However, there are still some knowledge gaps. Therefore, our first aim should be to prevent or delay the onset of myopia.

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REASONS for DISSATISFACTION of PROGRESSIVE EYEGLASS USERS

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ABSTRACT

Presbyopia is an age-related near vision problem in individuals over the age of 40. Progressive eyeglass can be recommended for those with presbyopia. These lenses have optical designs that provide the ability to see far, medium and near distances simultaneously. The adaptation process of users to progressive lenses varies depending on individual factors and is of great importance in terms of visual adaptation. In this study, the reasons for dissatisfaction of patients using progressive lenses and suggestions for solving these problems will be discussed. We analyzed articles published in Google Scholar, Pubmed, Science Direct and Web of Science electronic databases using the keywords "Progressive", "Presbyopia", "Multifocal lenses". When the literature is reviewed, the main reasons for dissatisfaction in the use of progressive lenses are divided into categories such as adaptation process, visual impairments, narrow field of view, measurement error, frame selection and incompatibility between price and expectation.The adaptation process to progressive lenses takes between 1-4 weeks and may take a long time, especially for first-time wearers. As blurred vision and image disturbances occur in the peripheral region, dizziness and nausea may occur. Frame selection and correct mounting are very important. Choosing a small frame is not appropriate for high-addition eyeglass users. Errors made during assembly directly affect vision. The adoption of progressive lenses by users requires proper management of the adaptation process, correct measurement and frame selection, informing users and setting realistic expectations.

Keywords: *Adaptation, Multifocal, Presbyopia, Progressive lenses*

INTRODUCTION

Presbyopia usually occurs in people over the age of 40 when the lens of the eye loses its elasticity, leading to a loss of accommodation (Wolffsohn and Davies, 2019, Zamora et al., 2020). Multifocal lenses are used to correct this situation. The most commonly used multifocal lenses today are progressive lenses. This study discusses the reasons for patient dissatisfaction with progressive lenses [Other names: progressive eyeglasses, progressive additional lenses (PALs)] and proposes solutions to these problems.

Progressive lenses

Multifocal lenses are an option for presbyopic patients with optical designs that provide the ability to see distance, intermediate and near objects simultaneously (Fogt. et al., 2022, Büyükyıldız, 2011). Progressive lenses were first patented by Owen Aves in 1907 (Meister et al, 2008). Progressive lenses provide clear vision at different distances (Koç Kaçmaz & Yılmaz, 2012). This allows presbyopic patients to see using one pair of glasses without having to wear separate glasses for near and far vision. (Akbari et al., 2022). Compared to bifocal lenses, it offers a more natural appearance due to the lack of a distinct line at the bottom. It therefore offers a more aesthetic appearance. There is also a smooth transition between distance, intermediate and near, and more comfortable vision when switching (Fogt. et al, 2022). One eyeglass lens can provide clear vision for distance, near, and intermediate ranges. (Akbari et al, 2022). In progressive lenses, the distance vision segment is located at the top of the lens. The diopter difference from distance to near is not as sharp as in bifocal or trifocal lenses, but has a smooth transition. There is no line between the segments as the refraction increases continuously from top to bottom. As there is no separate interface between the distance and near segments, there is no image jumping (Erdoğan, 2022). Since there are no segments on the surface of progressive lenses, their appearance is aesthetic (Akdağ, 2017). The lower part of the lens contains a single power zone for reading. These two zones are connected by a certain corridor (Figure 1). The wide of the corridor and the amount of lens power allocated to intermediate vision may vary depending on the lens design and manufacturer used. The areas to the left and right of the corridor are areas of progressively more oblique astigmatism on the inside and outside of the lens that do not provide clear focus at any distance. These areas are known as blur or irregularity zones (Erdoğan, 2022).

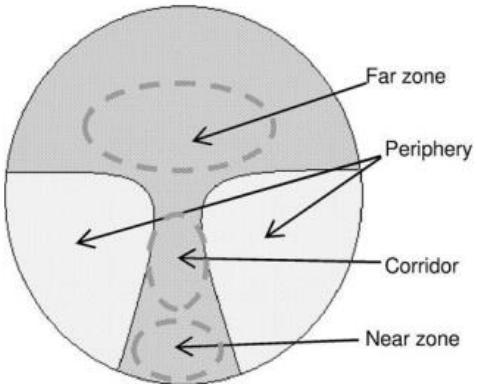

Figure 1: Anatomy of progressive lenses (Chamadoira et al., 2015)

Indication For Prescribing Progressive Glazing

Progressive lenses are recommended by opticians for people who use both distance and near glasses, and people who are uncomfortable with bifocal glasses. People with refractive errors such as myopia, hyperopia or astigmatism who also develop presbyopia may be recommended to use progressive lenses instead of wearing two separate glasses Progressive lenses help reduce requring for near and for glasses by providing a gradually access between far and near zones (Sheedy et al., 2005).

Advantages of Progressive Lenses

The advantages of progressive lenses are that they provide an aesthetic appearance, visual comfort and ease of use by using one lens instead of multiple lenses. It has been reported that there is no record in the literature that people who previously used bifocal lenses switched back to bifocal lenses after using progressive lenses. (Akbari et al, 2022). Because bifocal lenses are often associated with age, many presbyopes prefer progressive lenses to bifocal lenses (Alvarez et al, 2017).

Progressive lenses are more advantageous from an aesthetic point of view. It also provides a more comfortable and functional solution for viewing medium distance objects such as computer screens.Everyone has different viewing habits. Some people use head movements to see, while others move their eyes more. There are types of multifocal lenses with limited side vision. These lenses require the user to turn or tilt their head to the side they want to see. Progressive lenses do not have segments on the surface and their appearance is aesthetic.

Disadvantages of Progressive Lenses

The disadvantage is that they are expensive compared to bifocal lenses. The mistakes made during the fitting process significantly complicate the adaptation period. (Mezer, 2015).

When viewed from the optical center of a lens, there is no prismatic effect. When viewed from outside the optical center, the prismatic effect occurs with different characteristics depending on the point of the lens (Özer, 2006). Therefore, if the prismatic effect is not desired in progressive lenses, the pupillary distance and fitting height values should be determined very carefully when mounting the lens to the

frame. In hard-designed progressive lenses, the far and near fields are wider, the progressive channel is narrower and has hard transitions (Büyükyıldız, 2010). For this reason, if lenses with narrow channels are not dispensed in accordance with the user's needs, the adaptation process will be prolonged and this can lead to disadvantages. Such multifocal lenses are ideal for presbyopes and narrow spectacle wearers who frequently use both distance and near vision. In soft designs, the distance and near fields are not as wide, but the visual clarity of the lens is better and the surface astigmatism is more proportionally distributed (Büyükyıldız, 2010).

Reasons for Dissatisfaction with Progressive Lenses

There are irregular zones of astigmatism under the distance zone, in the transition zone and in the nasal and temporal parts of the near zone; when the eye moves around these zones, confusion and a feeling of floating occur in the brain. Both the astigmatic areas on the sides and the blurriness in the near region with the transition to the near region may give the person a feeling of shaking. (Koç Kaçmaz & Yılmaz, 2012). This situation makes the adaptation process very difficult. Blurred vision in the peripheral area, inability to control eye and head movements (Hutchings, 2007), preference for low quality glass and high expectations of users play an important role in determining user dissatisfaction. The lower reading (near) segment in progressive lenses (Figure 2) impairs contrast sensitivity and depth perception when looking beyond the typical reading distance of approximately 40 cm. This may prevent the correct perception of stair positions and/or obstacles in the lower part of the visual fields, increasing the risk of falls. (Johnson, 2007). If people who have problems with the adaptation process do not use progressive glasses regularly, the adaptation period is prolonged (Alvarez, 2017). This situation increases user dissatisfaction.

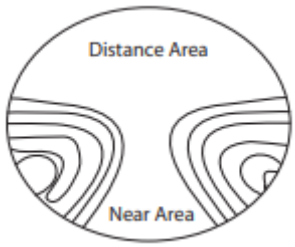

Figure 2: Progressive eyeglass lens (Johnson, 2007).

Recommendations for progressive lens wearers

Patients who wear progressive lenses should be carefully instructed in the proper use of their spectacles, especially when viewing near objects (Akbari, 2022). In particular, it is very important that patients wearing multifocal lenses be decentered horizontally and vertically, depending on the PD distance, fitting height values and frame dimensions, so that the patient can look at the optical center and become accustomed to the spectacles. If the prismatic effect is not desired in progressive glasses, the lenses should be mounted on the frame according to the pupil distance and appropriate mounting

height.Therefore, it is necessary to make the necessary precise measurements for multifocal lenses for these patients and to inform the patient well about the use of the lenses (Acer, 2021). Multifocal lenses that extend both the distance and near vision fields increase the near vision field and reduce the blurred field. Lenses with extended distance vision allow large areas to be seen with only one eye movement. These lenses provide a high level of comfort for users and reduce the time it takes to become accustomed to wearing glasses. These lenses also allow for the selection of smaller frames. With today's technology, multifocal lenses can even be customized. By knowing the user's personal parameters, the lenses can provide smooth and clear vision from near to far. In this way, vision is provided without image jumps or transitions (Akdağ, 2017). Users should be informed by the optician in order to manage the mounting process correctly. The optician should select the lenses according to the user's needs and determine the user's realistic expectations. The process of controlling the user's head and eye movements can be accelerated by supporting the adaptation process with training. Proper training in head position and gaze control can help prevent problems such as image shift and dizziness.

CONCLUSION

Proper training and mounting support should be provided to increase user satisfaction and minimize discomfort. The better the individual characteristics of the wearer are recognized in the design of progressive lenses, the better the quality of vision and the shorter the adaptation period. Progressive lenses are very useful for presbyopic patients, and future technological advances may further improve the performance and accessibility of these lenses. Lack of awareness about eye health can directly affect individuals' access to and use of appropriate vision solutions. This can limit the uptake of progressive lenses. Raising awareness would be beneficial to improve spectacle wear habits.

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DEMOGRAPHIC FACTORS INFLUENCING HEALTHCARE PREFERENCES

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ABSTRACT

This study aims to understand the relationship between individuals' preferences for types of healthcare services (public, private, mixed, or free model) and demographic variables, as well as to examine the reasons underlying these preferences. The research was conducted using data collected through surveys from university employees and evaluated through various analytical methods, including number, percentage, chi-square tests and post hoc analyses. The analysis results indicate that satisfaction with healthcare services and having private health insurance significantly influence healthcare service preferences. It was observed that individuals with a lower education level tend to choose public health services, while those with higher income and education levels prefer mixed or private services. Moreover, individuals with low incomes reported lower satisfaction levels, which directly affected their preferences. Understanding the socio-economic factors affecting healthcare preferences can help reshape healthcare systems to meet the needs of different demographic groups. These findings could provide a guide for creating equitable and sustainable health policies.

Keywords: *Health economics, Demographic variables, Healthcare preferences*

INTRODUCTION

Access to healthcare services is a critical factor that directly impacts the quality of life at both individual and societal levels. The question, "What type of healthcare services would you prefer?" offers an important framework for understanding perceptions and expectations of the healthcare system. The answers to this question relate to preferences for different types of services, such as public healthcare, private sector-focused systems, mixed models, and entirely free healthcare services. These preferences are influenced by many factors, including socio-economic conditions, trust in the healthcare system, satisfaction levels, and demographic characteristics (Mamedov et al., 2020; Nosratnejad et al., 2024; Rahman, 2020).

Public healthcare services support the principles of social equity by aiming to provide broad access. However, limited resources and long waiting times can constrain the effectiveness of these systems (Msacky, 2024; Rahman, 2020). On the other hand, private healthcare services have the capacity to provide fast and personalized care, although high costs are among the drawbacks (Flores-Hernández et al., 2024). Mixed healthcare systems aim to combine the positive aspects of both approaches to offer a wider network of services, although their effectiveness depends on the healthcare policies of the countries where they are implemented (Kehinde Emmanuel Agbeni et al., 2024; Kumar, 2024). Public-private partnerships also make significant contributions to healthcare systems, particularly in areas such as access to medicines and economic sustainability (Ciccocioppo & Cuende, 2024). All these findings demonstrate that the complementary features of public and private healthcare are essential for creating an effective and sustainable healthcare system.

In healthcare service preferences, individuals prioritize high-quality, accessible, and cost-effective services. A study conducted in Lagos, Nigeria, found that people tend to prefer public healthcare services but perceive them as lower in quality compared to the private sector (Kehinde Emmanuel Agbeni et al., 2024). Similarly, a study in Mexico reported that public healthcare services generally offer cost advantages but fall short in terms of rapid access and service quality compared to the private sector (Flores-Hernández et al., 2024). In impoverished regions of India, people prefer public healthcare services but express a demand for the fast and personalized services offered by the private sector (Kumar, 2024). A comprehensive review in South Asia revealed that people desire an equitable healthcare system but that deficiencies in quality and inclusiveness lead to a shift from public services to the private sector (Sharma et al., 2024). Research conducted in the Democratic Republic of Congo highlighted that quality deficiencies in public healthcare facilities drive individuals toward the private sector (Kyomba et al., 2024).

Although cost and access play crucial roles in preferences for public healthcare services, expectations regarding service quality significantly influence these preferences. A study conducted in

Faisalabad, Pakistan, demonstrated that quality differences between public and private healthcare services impact the choice of public facilities. It was observed that while public healthcare services are easier to access, limited resources in the public sector lead individuals to prefer the private sector. Conversely, the high costs of some private sector services restrict access (Anbreena Rasool et al., 2024). Research examining the perceptions of individuals experiencing chronic pain regarding physiotherapy services highlighted that access, continuity, and quality issues in public healthcare systems significantly increase the shift to private healthcare services (Gervais-Hupé et al., 2024). These findings reveal that while economic factors drive people to prefer public healthcare services, features such as modern infrastructure, fast service, and expertise make the private sector more attractive for meeting quality demands. To address these demands, healthcare systems must take steps to improve quality in public services, offering a more balanced and sustainable solution.

Demographic and socio-economic characteristics play a significant role in the preference for public or private healthcare services (Batbold & Pu, 2021). Age is a notable factor in healthcare service preferences; older individuals tend to prefer public healthcare services, whereas younger people gravitate toward the private sector for fast access and modern treatment options (Gervais-Hupé et al., 2024; Kyomba et al., 2024). Gender also influences healthcare service preferences; women are more inclined toward public services, while men seek private sector services driven by expectations of speed and expertise (Anbreena Rasool et al., 2024).

Marital status, especially among married individuals, prompts a higher preference for public healthcare services due to social support mechanisms (Sharma et al., 2024). Education level is another significant factor; individuals with higher education levels tend to prefer private sector services due to quality expectations (Anbreena Rasool et al., 2024; Gabrani, 2023; Kumar, 2024; Msacky, 2024). Income level is one of the most critical determinants of preferences for public or private healthcare. Low-income individuals choose public services for cost advantages, whereas higher-income groups are more likely to opt for the private sector (Flores-Hernández et al., 2024; Kayaoğlu & Gülmez, 2020; Msacky, 2024; Sharma et al., 2024; Sigüeza & Artabe, 2022). These findings demonstrate that public and private sectors offer different advantages and that individuals' preferences are shaped by their needs and socio-economic conditions.

Satisfaction with healthcare services directly influences individuals' trust in the healthcare system and their participation in it. Positive experiences, such as professional and friendly approaches by healthcare workers, clean and organized service environments, and timely services, increase satisfaction levels. However, negative experiences, such as misdiagnoses, long waiting times, and insufficient information, adversely affect satisfaction. These factors often lead individuals to substitute public healthcare services with private sector healthcare services (Adhikari et al., 2021; Amoah et al., 2021; Jahan, 2024; Msacky, 2024; Zawisza et al., 2020).

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This study aims to understand the relationship between the types of healthcare services preferred by individuals (public, private, mixed, or free models) and demographic variables, as well as to uncover the underlying reasons for these preferences. Healthcare service preferences vary according to individuals' age, gender, education level, income status, and trust in the healthcare system. By analyzing the impact of these variables on preferred healthcare services, this study seeks to contribute to restructuring healthcare systems to better meet individuals' needs and expectations. The findings obtained in this context will serve as a valuable guide for policymakers, particularly in promoting equity and accessibility in healthcare services.

MATERIALS and METHODS

Purpose of the Study

This study aims to understand the relationship between the types of healthcare services preferred by individuals (public, private, mixed, or free models) and demographic variables, as well as to uncover the fundamental reasons behind these preferences.

Research Hypothesis

H1: "There is a relationship between the type of preferred healthcare services and demographic variables."

Sampling and Data Collection

This descriptive study was conducted between December 1, 2022, and January 5, 2023, among university employees. After informing participants about the study, face-to-face data collection was carried out with volunteers. The survey questions were developed based on the literature and included multiple-choice questions.

During the study period, the university employed 1,745 individuals, including academics, administrative staff (civil servants, workers, canteen staff, cleaners, cafeteria staff, etc.). A finite population sampling method was used, ensuring equal inclusion probabilities for all individuals in the population. The sample was randomly selected as a representative of the entire population. The sample size calculation was conducted as follows:

$$n = \frac{Z^2 \cdot p \cdot (1-p)}{e^2 \left(1 + \frac{Z^2 \cdot p \cdot (1-p)}{e^2 \cdot N}\right)}$$

Z=1.96 (95% confidence level)

p=0,5 (maximum uncertainty)

e=0,05 (margin of error)

N=1745 (population size)

Based on this calculation, the sample size was determined to be 315 participants. However, 611 employees participated in the study.

Statistical Analysis

The findings were analyzed using ChatGPT 40 and supported by additional interpretations. The analyses included descriptive statistics such as frequencies and percentages. Chi-square tests were applied to examine the relationships between the preferred type of healthcare services and demographic variables. The chi-square test is a fundamental method used to test the independence between two categorical variables.

Ethical Considerations

The ethical approval for the study was obtained from the Social Research Ethics Committee of the relevant university (Decision No: 2002/19-06; Decision Date: November 29, 2022). The study adhered to the principles of scientific research and publication ethics throughout the process.

RESULTS

The findings of the study are presented in tables in this section. The tables show the numbers, percentages, and results of chi-square analyses.

Table 1. Participants' Demographic Characteristics, Satisfaction with Healthcare Services, and Preferred Type of Healthcare Service

	Number (n)	Percentage (%)
Age		
18-25	58	9.4
26-35	200	32.7
36-45	247	40.4
46-55	88	14.4
56 and above	18	2.9
Gender		
Famela	282	46.2
Male	329	53.8
Marital Status		
Married	364	59.6
Single	247	40.4
Education Level		
High school or below	100	16.4
Associate/Bachelor's degree	204	33.4
Master's degree	126	20.6
Doctorate/Postdoctorate	181	29.6

Income		
Income less than expenses	171	28.0
Income equal to expenses	324	53.5
Income greater than expenses	116	19.0
Ownership of Private Health Insurance		
Yes	123	20.1
No	488	79.8
Are you satisfied with healthcare services in Turkey?		
Yes	100	16.3
No	193	31.5
Partially	318	52.0
Preferred Type of Healthcare Service?		
Free public healthcare services (high-quality public services)	157	25.7
Healthcare services provided by both the private and public sectors (mixed)	215	35.2
Entirely private healthcare services	14	2.3
Entirely public healthcare services	225	36.8
Total	**611**	**100.0**

Table 1 shows the participants' responses to survey questions on demographic characteristics, satisfaction with healthcare services, and their preferred type of healthcare service.

According to Table 1, the largest age group is 36-45 years (40.4%). The gender distribution is nearly equal (46.2% female, 53.8% male). Regarding marital status, 59.6% of participants are married. For education level, the highest proportion is among associate/bachelor's degree holders (33.4%). In terms of income, 53.5% reported their income equals their expenses. Ownership of private health insurance is relatively low (20.1%). Regarding satisfaction with healthcare services in Turkey, the highest percentage of participants (52.0%) expressed partial satisfaction. For healthcare service preferences, the most selected option was "entirely public healthcare services" (36.8%), followed by "mixed" services (35.2%), with entirely private healthcare services being the least preferred (2.3%).

Table 2. Relationship Between Preferred Type of Healthcare Service and Demographic Variables and Satisfaction with Healthcare Services

Variables	**Ki-Square**	**sd**	**p**
Age	15.1048	12	0.2358
Gender	5.1939	3	0.1581
Education Level	22.6173	9	0.0071 *
Marital Status	3.4980	3	0.3210
Income	7.9608	6	0.2410
Are you satisfied with healthcare services in Turkey?	24.2807	6	0.0046 *
Ownership of Private Health Insurance	12.9765	3	0.0047 *

* Significant at 0.05 level with 95% confidence ($p<0.05$)

Table 2 summarizes the results of the chi-square tests analyzing the relationship between the question "What type of healthcare service would you prefer?" and demographic variables as well as satisfaction with healthcare services.

The analysis shows that education level ($p = 0.0071$), satisfaction with healthcare services in Turkey ($p = 0.0046$), and ownership of private health insurance ($p = 0.0047$) are statistically significant at the 5% level. These findings indicate that these variables significantly influence healthcare service preferences. Post hoc analyses were conducted for these significant variables. It was found that individuals with high school or lower education levels mostly preferred free public healthcare services, while those with doctorate/postdoctorate education preferred mixed healthcare systems. Satisfaction with healthcare services influenced preferences, with satisfied individuals favoring budget-friendly mixed services, while dissatisfied individuals preferred entirely free public services. For ownership of private health insurance, those with insurance tended to choose private healthcare services.

Demographic variables such as age ($p = 0.2358$), gender ($p = 0.1581$), marital status ($p = 0.3210$), and income level ($p = 0.2410$) were not found to have a statistically significant effect on healthcare service preferences. These findings suggest that certain demographic and socioeconomic factors influence healthcare service preferences, while others do not play a significant role.

DISCUSSION

This study aimed to examine the relationship between individuals' preferred types of healthcare services (public, private, mixed, or free models) and demographic variables, as well as the underlying reasons for these preferences. The findings indicate that education level, satisfaction with healthcare services in Turkey, and ownership of private health insurance significantly influence healthcare service preferences. However, age, gender, marital status, and income level were found to have no significant effect on healthcare service preferences. Nevertheless, income level was found to affect variables such as education, preference for private healthcare services, and ownership of private health insurance. These results suggest that certain demographic and socioeconomic factors shape individuals' healthcare preferences, while others do not play a decisive role.

Education level was found to have a significant impact on healthcare service preferences. Individuals with high school or lower education levels tend to prefer public healthcare services due to cost advantages and ease of access, while those with master’s or doctorate-level education were more inclined toward mixed systems provided through public-private partnerships. This finding suggests that individuals with higher education levels may have expectations for service quality and speed that differ from what public healthcare services offer. These results align with previous findings in the literature

(Anbreena Rasool et al., 2024; Kumar, 2024). Additionally, individuals with higher education levels are likely to have higher income levels, as academic staff typically earn more than civil servants and workers in the sample. To confirm this, an analysis was conducted between participants' income and education levels. The findings revealed a significant relationship between these variables ($p<0.05$). The analysis showed that individuals with high school or lower education levels mostly reported their income as less than their expenses, whereas those with doctorate/postdoctorate education were the least likely to indicate their income was insufficient. Furthermore, the results suggested a potential relationship between income and satisfaction with healthcare services. A chi-square analysis was conducted to examine this relationship, and the variables were found to be related ($p<0.05$). Post hoc analysis revealed that this relationship stemmed from the group who reported their income as less than their expenses. This suggests potential issues with accessing public healthcare systems in Turkey, as dissatisfaction with the healthcare system often increases preference for the private sector (Kyomba et al., 2024; Msacky, 2024). However, financial barriers to accessing private sector services may exacerbate dissatisfaction. This finding is also supported by the literature (Flores-Hernández et al., 2024; Kayaoğlu & Gülmez, 2020; Msacky, 2024; Sharma et al., 2024; Sigüenza & Artabe, 2022).

Ownership of private health insurance was also found to be a significant variable influencing the type of healthcare service preferred. Individuals with private health insurance were more likely to seek services from the private sector, indicating that private health insurance provides cost advantages and broader access to services (Batbold & Pu, 2021). Considering that private health insurance ownership might be related to education level, an analysis was conducted between these two variables. The analysis showed a significant relationship between education level and private health insurance ownership ($p<0.05$). Post hoc analysis revealed that individuals with doctorate/postdoctorate education levels were more likely to have private health insurance. Consequently, these individuals were expected to use private healthcare services more frequently. This relationship may also be associated with income levels, as individuals with high school or lower education levels often reported their income as less than their expenses. These findings suggest that education level affects income, which in turn influences the demand for public or private healthcare services. This conclusion is consistent with previous studies indicating that low-income individuals prefer public services due to cost advantages, while high-income groups are more likely to choose private services (Flores-Hernández et al., 2024; Msacky et al., 2024).

The lack of a significant effect of age on healthcare service preferences contradicts some previous studies. For example, it has been stated that older individuals generally prefer public healthcare services, while younger individuals gravitate toward the private sector due to faster access and modern treatment options (Gervais-Hupé et al., 2024; Kyomba et al., 2024). However, the absence of significant differences by age group in this study may suggest that participants have similar healthcare expectations or that other factors influence the preferences of different age groups.

The absence of a statistically significant effect of gender on healthcare service preferences also differs slightly from findings in the literature. Previous studies have highlighted that women tend to prefer public healthcare services, while men are more likely to opt for the private sector due to expectations of speed and expertise (Rasool et al., 2020). The results of this study suggest that gender differences are not prominent in access to healthcare services and that public and private sector services are evaluated similarly by both genders.

The lack of a significant effect of marital status on healthcare service preferences contrasts with earlier findings that married individuals prefer public healthcare services more due to social support mechanisms (Sharma et al., 2024). However, in this study, the lack of significance for marital status suggests that other variables may influence healthcare preferences for both married and single individuals.

CONCLUSION

Based on the analyses conducted and the literature reviewed in this study, significant relationships were found between the preferred type of healthcare service and variables such as education level, satisfaction with healthcare services, and ownership of health insurance. A detailed analysis of these relationships revealed that income level is a critical variable affecting many other factors. It was concluded that the type of healthcare service preferred is most strongly associated with income. Therefore, improving income levels and increasing access to healthcare services are deemed essential. Future research should focus on examining the impact of income level on healthcare utilization.

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BREAKING BARRIERS: ENHANCING EMPLOYMENT OPPORTUNITIES for PEOPLE with SCHIZOPHRENIA

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ABSTRACT

This review explores the employment processes and challenges faced by individuals with schizophrenia, a chronic mental disorder marked by cognitive impairments, emotional flattening, and lack of motivation. These symptoms severely hinder individuals' ability to adapt to social and economic life, restricting their workforce participation. Studies reveal that unemployment rates among individuals with schizophrenia are close to 30%. Supported employment programs, structured mental health services, and education-focused rehabilitation initiatives play a significant role in improving their workforce integration. These programs are critical in enhancing vocational skills and ensuring job retention, thereby fostering greater independence for individuals with schizophrenia. To address barriers such as societal stigma and self-stigma, awareness campaigns and flexible work models are proposed as effective strategies to promote economic independence. The review emphasizes the need for tailored support mechanisms that cater to individual needs, the importance of fostering inclusive workplace practices, and implementing steps to reduce stigma. These measures aim to improve the quality of life for individuals with schizophrenia and enable meaningful participation in both social and economic spheres. The article concludes by highlighting the necessity of sustainable employment policies designed to empower individuals with schizophrenia and support their long-term integration into the workforce and society.

Keywords: *Schizophrenia, Employment, Health economic, Health management.*

INTRODUCTION

Schizophrenia is defined as a chronic mental disorder that causes profound impairments in fundamental cognitive functions such as emotion, thought, behavior, and perception. This illness significantly restricts not only individuals' personal lives but also their social adaptation and economic activities. Patients with schizophrenia struggle to establish a sustainable presence in education, employment, and social life, leading to profound individual and societal consequences (Shalev et al., 2025).

Three main symptom groups stand out in individuals diagnosed with schizophrenia: positive, negative, and cognitive symptoms. Positive symptoms, such as hallucinations and delusions, disrupt individuals' perception of reality, while negative symptoms, including emotional blunting and lack of motivation, make it difficult for individuals to maintain continuity in social and professional life. However, cognitive impairments, in particular, directly affect functions such as memory, attention, and planning, which are essential for work life, making workforce participation significantly more challenging compared to healthy individuals (Kadakia, Fan, Shepherd, Bailey, et al., 2022; Sauvé et al., 2024).

Employment is highly important for individuals with schizophrenia, as it provides financial and psychological relief. Through work, they can establish a daily routine, increase their self-confidence, and contribute to society. However, work-related stress can sometimes exacerbate symptoms of the illness (Ørtenblad et al., 2025). While employment may worsen symptoms in some cases, unemployment also negatively affects patients. Losing a job not only leads to a loss of economic independence but also deteriorates mental health. Studies indicate that unemployment among individuals with schizophrenia leads to worsening symptoms, reduced adherence to medication, and an increased risk of relapse (Eneh & Eneh, 2024). Additionally, it has been reported that individuals with schizophrenia have low workforce participation rates (Bhogal et al., 2024).

In this context, systematically planned and structured mental health services can support individuals' participation in employment and reduce healthcare-related costs. Such services play a crucial role in facilitating social and economic integration and increasing the workforce participation rate of individuals with schizophrenia (Greenwood et al., 2024).

This review examines the employment processes of individuals with schizophrenia and the challenges they face, evaluating methods that can be developed to support their workforce participation. The aim is to provide a guide on how individuals with schizophrenia can integrate into society and economic life while also proposing methods to enhance personal independence. In this framework, discussions will focus on how employment policies can be improved, how inclusive workplace practices can be promoted, and how approaches that enhance social integration can be implemented.

The Costs of Schizophrenia to the Healthcare System

Schizophrenia is a chronic mental disorder that imposes a significant economic burden on healthcare systems. Due to the nature of the illness, it requires long-term treatment, frequent hospitalizations, and intensive care services, all of which constitute a major portion of healthcare-related costs. Among mental health disorders, schizophrenia ranks among the highest in healthcare expenditures (Milliken et al., 2024). These costs can be categorized into two main groups: direct and indirect costs.

Direct Costs

Direct costs refer to healthcare expenditures and medication costs associated with treating schizophrenia. The high demand for healthcare services by individuals with schizophrenia constitutes a large portion of these direct costs. For example, hospitalizations, psychotherapy, counseling, rehabilitation programs, and pharmacological treatments are the primary components of direct expenditures (Calzavara Pinton et al., 2024). Research suggests that early access to treatment for schizophrenia can reduce healthcare service utilization and consequently lower costs (Ibarrondo et al., 2024). However, medication costs remain a significant expense in the treatment of schizophrenia. Long-acting antipsychotic medications, in particular, play a crucial role in reducing relapse rates and preventing hospital readmissions. Nonetheless, the high cost of these drugs places an additional financial burden on healthcare budgets (Luo et al., 2024).

Indirect Costs

Indirect costs arise from job losses, decreased productivity, and caregivers withdrawing from the workforce. Families often experience lost work hours and financial strain while navigating treatment options before receiving a proper diagnosis. Throughout the illness, frequent relapses lower workforce participation rates and limit the economic independence of families. Additionally, caregivers who are deeply involved in long-term treatment processes often have to leave their jobs or put their careers on hold. Studies indicate that caregivers spend approximately 78 hours per month attending to individuals with schizophrenia. Beyond providing direct care, families may also experience financial losses that force them into debt (Bhogal et al., 2024; Chaudhary & Asmat, 2025). Furthermore, antisocial behaviors such as vandalism and social maladaptation among individuals with schizophrenia contribute to another dimension of indirect costs. Property damage, increased law enforcement expenses, and social service usage add to these financial burdens (Luo et al., 2024)).

The Impact of Hospitalization Durations

The severity of cognitive impairments in individuals with schizophrenia leads to increased healthcare service utilization. Patients with more severe cognitive impairments tend to have longer hospital stays, which increases hospital bed occupancy rates and overall healthcare system costs

(Kadakia, Fan, Shepherd, Dembek, et al., 2022). Poorly planned hospital discharge processes, combined with a lack of social support mechanisms, further escalate these expenses (Selick et al., 2024).

The Role of Prevention and Early Intervention

Early diagnosis and intervention in schizophrenia treatment can significantly reduce healthcare costs. Providing intensive treatment during the first episode of psychosis lowers relapse rates and reduces long-term care expenses (Ibarrondo et al., 2024). Long-acting antipsychotic medications improve treatment adherence, preventing relapses and alleviating the financial burden on the healthcare system (Luo et al., 2024).

Barriers to Employment for Individuals with Schizophrenia

Schizophrenia is a chronic mental disorder that deeply affects individuals' lives. It not only disrupts cognitive and emotional functions but also significantly restricts access to education, employment, and social life. Research indicates that individuals with schizophrenia have low workforce participation rates. For example, a study conducted in Ethiopia reported an unemployment rate of 29.9% among individuals with schizophrenia (Samuel Berhanu et al., 2023). In Indonesia, this rate was 28.6%. These findings highlight the significant employment challenges faced by individuals with schizophrenia. Such difficulties often persist throughout life. However, research also shows that employment loss occurs shortly after a schizophrenia diagnosis, with recovery in employment rates typically beginning within two years. If the illness develops at a young age—when individuals are acquiring essential life and professional skills—employment-related challenges can become even more severe (Elistiana et al., 2024).

Cognitive and Motivational Challenges

Cognitive impairments associated with schizophrenia represent one of the most significant barriers to employment. Deficits in attention, memory, and problem-solving skills make it difficult for individuals to fulfill their job responsibilities (Kadakia, Fan, Shepherd, Bailey, et al., 2022). Additionally, lack of motivation hinders individuals from maintaining employment continuity and adhering to work schedules, leading to higher job turnover rates and lower retention in the workforce (Yang, 2024).

Lack of Education and Professional Skills

Individuals with schizophrenia often have lower levels of education, which limits their access to skilled jobs and forces them into low-wage, short-term employment. A lack of education makes it more difficult for these individuals to compete in the job market and restricts their social mobility (Elistiana et al., 2024; Ringbom et al., 2022). Research suggests that individuals with a family history of mental health issues experience even greater difficulty in overcoming these disadvantages (Ringbom et al., 2022).

Self-Stigma

Another major barrier to employment for individuals with schizophrenia is self-stigma. Internalizing societal prejudices, individuals with schizophrenia may develop a negative self-image, which discourages them from applying for jobs or participating in workplace social environments (Mısır & Cengisiz, 2024). Those with high levels of self-stigma are more likely to experience social isolation and miss out on job opportunities. As self-stigmatization deepens, individuals may start seeing themselves as unworthy of returning to work and may hesitate to seek employment. A key reason for this reluctance is the fear of being negatively perceived or discriminated against in the workplace (Henriksson et al., 2025).

Lack of Workplace Support

Sustaining employment for individuals with schizophrenia requires adequate support mechanisms in the workplace. However, in many cases, workplaces fail to provide sufficient professional support and health services (Ryland et al., 2024). Difficulties in maintaining regular treatment and medication adherence directly affect workforce participation. The lack of supported health programs makes treatment adherence more difficult and negatively impacts employment outcomes (Luo et al., 2024). The absence of workplace support programs also increases job turnover rates, making it harder for individuals with schizophrenia to retain employment (Ryland et al., 2024). Studies suggest that providing workplace health support and vocational training can help overcome these barriers (Reitan et al., 2024). Moreover, employment for individuals with schizophrenia is often hindered by employers' lack of awareness about the illness and their reliance on misconceptions and stereotypes (Craven et al., 2024). Supported employment programs, cognitive rehabilitation methods, and social awareness campaigns aimed at combating stigma support the integration of these individuals into work and social life (Iderapalli et al., 2024; Yang, 2024).

Socioeconomic Barriers

Schizophrenia is significantly influenced by socioeconomic factors. Mental health problems are more prevalent in low-income communities, contributing to a higher incidence of severe mental disorders like schizophrenia (Deng et al., 2024; Sugg et al., 2024). Individuals with a stable family environment and strong social support—such as those who are married—tend to cope with the illness more effectively. Moreover, higher education levels are linked to increased employment opportunities and better job retention rates, enabling individuals to handle life's challenges more effectively (Elistiana et al., 2024). However, low socioeconomic status can hinder access to education. The necessity to contribute to household income at an early age may prevent individuals from continuing their education, making long-term employment more difficult. Education level is a key determinant of employment stability and income level. Individuals with higher education tend to secure better-paying, stable jobs.

However, those who withdraw from the workforce due to schizophrenia often experience greater economic losses (Majuri et al., 2024).

Economic Challenges Faced by Caregivers of Individuals with Schizophrenia

Caregivers of individuals with schizophrenia face not only emotional and physical burdens but also significant economic challenges. Schizophrenia imposes a substantial financial strain on families due to the lifelong care requirements of the affected individuals. Caregivers often experience serious financial losses due to long-term treatment processes, frequent hospitalizations, rehabilitation needs, and medication expenses (Chaudhary & Asmat, 2025).

Loss of Employment and Income

Caregivers of individuals with schizophrenia frequently have to leave their full-time jobs or reduce their working hours to provide care. The withdrawal of caregivers from the workforce reduces household income and threatens long-term financial stability. This burden is even more pronounced in low-income families, where caregiving responsibilities significantly impact the economic and social lives of other family members (Andualem et al., 2024). The inability of caregivers to pursue career opportunities results not only in financial loss but also in the disruption of their personal and professional development. Caregiving responsibilities often force individuals to interrupt their education and career progression (Bhogal et al., 2024).

Financial Costs

The financial costs of caring for individuals with schizophrenia can be categorized as direct and indirect expenses. Direct costs include expenditures on medications, hospital stays, doctor visits, and treatment-related expenses. Indirect costs involve income loss, time spent on caregiving, transportation expenses, and additional living costs incurred by family members while accompanying patients during treatment (Deng et al., 2024). Research indicates that these costs are particularly high for families living far from healthcare facilities. Moreover, relapses and recurrent episodes increase healthcare expenses over time. While some direct costs may be covered by health insurance, there is no structured system to compensate for indirect costs. Consequently, indirect costs often exceed direct medical expenses. Studies have found that during the initial stages of the illness, transportation expenses represent the highest financial burden, although these costs may decrease as families adapt to the condition. Telemedicine solutions have been suggested as a way to reduce transportation, accommodation, and meal-related expenses (Bhogal et al., 2024).

Economic Consequences of Social Stigma

Caregivers often experience social exclusion due to the stigma surrounding schizophrenia. This stigma not only limits their job opportunities but also exacerbates their economic difficulties. Stigma prevents caregivers from accessing social support networks, further intensifying financial burdens

(Chaudhary & Asmat, 2025). In addition to external stigma, caregivers may also suffer from self-stigma, which can lead to emotional exhaustion and caregiver burnout. Many caregivers experience feelings of guilt, inadequacy, or social rejection, leading them to withdraw from social interactions and isolate themselves. In some cases, families may attempt to hide the illness from others, delaying necessary medical intervention. Late diagnosis and treatment of schizophrenia ultimately increase healthcare costs for both families and public health systems (Tozoğlu & Gürbüzer, 2024).

Caregiver Burnout and Healthcare Expenses

Caregivers of individuals with schizophrenia frequently experience burnout syndrome, which can lead to additional health problems and increased medical expenses. Caregiver burnout has been shown to negatively impact family relationships and contribute to social isolation among caregivers. These challenges not only pose psychological risks but also create economic burdens by increasing the need for additional healthcare services (Andualem et al., 2024). To mitigate the economic challenges faced by caregivers, social policy improvements are crucial. Government-supported care programs can help alleviate financial burdens. Additionally, flexible working hours and workplace support mechanisms can enable caregivers to balance employment with caregiving responsibilities. Psychosocial support and counseling services can also help caregivers manage burnout, improving their overall well-being and financial stability (Andualem et al., 2024; Bhogal et al., 2024; Chaudhary & Asmat, 2025).

Strategies to Support Workforce Participation of Individuals with Schizophrenia

Enhancing the workforce participation of individuals with schizophrenia is essential not only for improving their quality of life but also for promoting social and economic sustainability. Achieving this goal requires a combination of individual, social, and systemic interventions. Below are some key strategies that can be implemented to support individuals with schizophrenia in the workforce.

Early Diagnosis and Treatment

Early diagnosis and treatment play a critical role in increasing workforce participation among individuals with schizophrenia. Effective interventions during the first episode of psychosis can slow disease progression and help preserve individuals' ability to work. Intensive treatment programs and long-acting antipsychotic medications can reduce relapse rates, making it easier for individuals to adapt to work life (Ibarrondo et al., 2024; Luo et al., 2024). However, cultural stigma and social isolation surrounding mental health conditions often discourage individuals from seeking early medical attention. This delay in treatment can lead to more severe symptoms and greater difficulty in workforce integration (Chui et al., 2024).

Supported Employment Programs and Psychosocial Rehabilitation

Supported employment programs are highly effective in helping individuals with schizophrenia secure and maintain jobs. These programs provide career guidance, job search assistance, and workplace adaptation support. Studies indicate that supported employment can enhance working memory function and social skills, enabling individuals to remain employed for longer periods (Hasbollah et al., 2022; Reitan et al., 2024). To further improve workforce participation, employers should implement inclusive workplace policies within supported employment frameworks. Providing occupational support and health services at the workplace can increase job retention rates among individuals with schizophrenia. Psychosocial support programs are also crucial, as they help develop social and professional skills, improving workplace behavior and reducing healthcare costs (Calzavara Pinton et al., 2024; Kadakia, Fan, Shepherd, Bailey, et al., 2022). Public sector employment opportunities have been found to reduce unemployment risks and enhance job retention rates among individuals with schizophrenia (Rydland et al., 2024). Creating a supportive work environment where individuals feel safe disclosing their illness without fear of stigma can significantly improve employment outcomes (Baldwin et al., 2023). Moreover, employment programs should be designed with individualized approaches that consider the personal strengths and limitations of each patient. However, individuals with severe health conditions may face additional barriers in accessing employment support programs (Pennington et al., 2024).

Education and Vocational Rehabilitation

Education and vocational rehabilitation are essential in equipping individuals with schizophrenia with the necessary skills to secure and maintain employment. Research indicates that education programs directly enhance job prospects (Eneh & Eneh, 2024). Vocational rehabilitation helps individuals prepare for the labor market, increasing employment continuity. Since schizophrenia often emerges at a young age, affected individuals may struggle to complete their education and acquire job-related skills. Therefore, ensuring that young patients remain in education and training programs is essential for long-term employment success (Lindblad et al., 2024).

Combating Stigma and Reducing Self-Stigma

Social stigma and self-stigma are major barriers to workforce participation among individuals with schizophrenia. Fear of discrimination discourages individuals from applying for jobs or engaging in social interactions, leading to higher unemployment rates (Mısır & Cengisiz, 2024). Public awareness campaigns aimed at reducing stigma can facilitate social and workplace integration for individuals with schizophrenia. Educating employers about the disorder can also help dismantle prejudices and create a more inclusive work environment (Craven et al., 2024).

Flexible Work Models

Flexible work arrangements can help individuals with schizophrenia better manage their workload while maintaining productivity. Adjusting work hours and tasks based on individual needs allows employees to balance treatment schedules with job responsibilities. Research indicates that flexible work models reduce job turnover rates and enhance employment stability (Yang, 2024).

CONCLUSION

Schizophrenia is a disorder that significantly impacts not only affected individuals but also their families and society as a whole. Research on schizophrenia continues to evolve, with employment loss emerging as one of its most critical consequences. This employment loss can occur either during active work life or as a barrier to entering the workforce. Employment challenges may stem from limited educational opportunities due to the illness or delayed diagnosis, which prevents early intervention. Therefore, early detection and timely intervention are crucial for ensuring successful employment outcomes. After the initial treatment phase, ongoing monitoring is necessary to minimize untreated periods and to preserve functional abilities. Maintaining functional abilities makes workforce integration significantly easier. Psychosocial support plays a key role in reducing self-stigma and promoting social adaptation among individuals with schizophrenia. One of the primary employment barriers is workplaces being unprepared to accommodate individuals with schizophrenia. As a result, affected individuals may not receive adequate support or fair treatment. To address this issue, it is essential to develop supported employment opportunities and educate employers about schizophrenia. By doing so, individuals with schizophrenia can be provided with job accommodations, such as mental health leave and task modifications, without facing discrimination. Ensuring workplace acceptance and support can also help in managing symptoms more effectively and provide access to necessary healthcare services.

In addition to the individuals affected, their families also experience economic and emotional burdens. Many individuals with schizophrenia require ongoing care, which places a significant responsibility on families. This burden is not only financial but also psychological and social. Caregivers may face employment loss, educational disruptions, and socioeconomic decline. To alleviate these challenges, governments must play an active role by implementing supportive policies that do not place the full burden of care on families. Expanding community mental health services, home-based care programs, and telemedicine solutions can help reduce caregiving responsibilities and employment losses among family members. Moreover, the public sector should promote remote and part-time work opportunities for individuals with schizophrenia. Encouraging flexible employment models can help individuals reintegrate into the workforce while minimizing stress and symptom exacerbation. By implementing comprehensive mental health policies, societies can enhance the economic independence and social inclusion of individuals with schizophrenia.

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(Bildiri Kodu)----------

THE MANAGEMENT of TYPE 2 DIABETES with DEMENTIA: CASE STUDY FROM a NURSE'S PERSPECTIVE in the UK

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ABSTRACT

Insulin resistance leads to high blood glucose levels in type 2 diabetes, which requires comprehensive management. This case study aims the management of the patient is 67 years old and has type 2 diabetes, hypertension, dementia, obesity, wound and peripheral artery disease to demonstrate the barriers and facilitators in care. The patient was managed using a combination of detailed assessment and self-management following personalised care framework, Care Quality Commission UK and National Institute for Health and Care Excellence guidelines UK. Interventions included such as and intensive blood glucose control with medication and diet adjustments, wound assessment and improvement of social interactions towards multidiscipline team. Following assessment tools were used such as Ipswich toe and touch toe tests, Waterloo score, MUST tool, HbA1c screening and Memory Impairment Screen. Following one year, the patient demonstrated significant improvements in HbA1c (from 96 mmol/mol to 46mmol/mol) and blood pressure levels (from 176/104 mmHg to 130/82 mmHg). Additionally, the patient reported improved self-care and adherence to management Additionally, the patient reported improved self-care and adherence to management guidelines, leading to a reduction in wound complications and a commitment to a more active lifestyle with socialising. The patient's attitude to life improved further as a result of regular dementia therapy sessions at a local day-care facility. The detailed assessments of revealed self-care challenges associated with dementia, and it is impact on diabetes management. This case presents the effectiveness of individualised care plan in achieving glycaemic control in type 2 diabetes with multiple long-term complications. It also highlights the importance of nurses play a crucial role in designing and implementing effectively to improve quality of life of patients.

Keywords: *Type 2 Diabetes, Dementia, Nurse, Quality of life, Self-management*

INTRODUCTION

Diabetes mellitus is recognised as one of the predominant chronic diseases with potentially life-threatening complications, impacting a significant portion of the global population. The prevalence of diabetes among individuals aged 18 and above has escalated dramatically, rising from 4.7% in 1980 to 8.5% in 2014 (WHO, 2020). It is estimated that around 463 million individuals were living with diabetes in 2019 (IDF, 2020), with projections indicating an increase to 578 million by 2030, and a staggering 700 million by 2045 (Saeedi et al., 2019). In the United Kingdom, approximately 3.8 million individuals have been diagnosed with diabetes (Diabetes UK, 2018), with a further estimated 1 million undiagnosed cases (Diabetes UK, 2018). The condition contributed to 1.6 million fatalities in 2016, while earlier figures from 2012 indicated 2.2 million deaths (WHO, 2020). In Turkey, the prevalence is reported at 13.2%, attributed to associated risk factors such as overweight, obesity, and physical inactivity (WHO, 2016).

Diabetes is classified as a chronic condition that arises when the pancreas is unable to produce adequate insulin, or when the body fails to utilise the insulin effectively (RCN, n.d.). Of the various types of diabetes, Type 1 and Type 2 are the most common. Type 2 diabetes is characterised by insulin resistance, wherein the body does not respond adequately to the insulin produced, leading to elevated blood sugar levels (Diabetes UK, 2017). This form of diabetes is often associated with obesity, physical inactivity, and being overweight. Recent studies indicate a concerning trend of increasing Type 2 diabetes diagnoses in children, a condition previously seen predominantly in adults (Agbre-Yace et al., 2015). Conversely, Type 1 diabetes is marked by the pancreas's failure to produce insulin needed for blood sugar regulation (Ndisang et al., 2017). This case study aims to critically examine the management of care for a patient with Type 2 diabetes, evaluating the interplay between diabetes management and other co-existing health concerns. It will advocate for an individualised approach to diabetes care to enhance health outcomes, focusing on key quality of care issues such as hyperglycaemia, wound healing, and dementia. The concluding section will synthesize a critical analysis of individual diabetes management and propose potential areas for improvement to bolster evidence-based care practices.

MATERIALS and METHODS

Case presentation

The case study presents an analysis of care management for a 67-year-old male patient, referred to as the patient, who has been diagnosed with Type 2 diabetes for the past 11 years. While conducting this examination, strict adherence to confidentiality and privacy protocols was observed to ensure the patient's anonymity. In accordance with the Nursing and Midwifery Council (NMC) guidance (2018), it is imperative to maintain the confidentiality of patient health data to avert potential stigma or

unauthorised utilisation of such information. The patient's diagnosis aligns with the broader statistic, as Type 2 diabetes accounts for approximately 90-95% of all diabetes cases (Rojas et al., 2018). According to a Public Health England report (2016), the incidence of diabetes is notably higher in men than in women, with Nordström et al. (2016) suggesting that this disparity may be attributed to elevated obesity rates observed in men. The analysis will explore the pathophysiology of the patient's Type 2 diabetes and assess appropriate care strategies for the crucial areas impacting his day-to-day life.

The patient has been actively seeking medication for his Type 2 diabetes, which has been evident since its onset 11 years ago. The primary aetiology of the patient's condition is linked to pancreatic dysfunction resulting from the destruction of insulin-secreting beta cells. This deterioration has led to a significant reduction in insulin levels, consequently causing elevated blood sugar levels (Lee and Halter, 2017). The destruction of beta cells, which can be exacerbated by a form of cellular damage induced by high glucose levels and ultimately leads to a complete lack of insulin secretion to counteract hyperglycaemia (Rojas et al., 2018). The patient's medical history is representative of a broader pattern seen in metabolic disorders, as he has managed to lead an independent life with diabetes until experiencing a marked decline in health over the last two years.

His medical complications now include hypertension, dementia, hypercholesterolemia, obesity, a recent wound on the right foot, and peripheral artery disease. The patient's hypertension is characterised by blood pressure readings of 176/104 mmHg (NHS, 2019). He was being treated with Amlodipine and Ramipril to manage these symptoms. For individuals with diabetes, controlling both blood glucose and blood pressure is critical for survival, necessitating continuous monitoring and adherence to prescribed treatments to avoid acute complications and fatalities (NICE, 2016). A thorough consultation between the patient and nursing staff took place to gain insights into the patient's physical symptoms, recent examinations, emotional state, and social circumstances. While Type 2 diabetes can manifest at any age, the majority, including the patient, develop the condition after the age of 45, with the age group of 45-64 years exhibiting the highest prevalence. Comparatively, diabetes prevalence among those aged 18-45 and over 65 is relatively equal (CDC, 2020). Although historically older adults have displayed a heightened risk for Type 2 diabetes, recent lifestyle changes and rising obesity levels have led to increasing incidence rates in younger demographics (Kasmauski, 2018).

Pathophysiology of Type 2 Diabetes

The patient exhibits various symptoms, including fatigue, unintended weight loss, slow wound healing, and impaired vision, which highlight underlying health complexities. The endocrine system plays a pivotal role in regulating blood glucose levels in concert with the central nervous system, a process known as homeostasis (Melenovsky et al., 2017). Slow wound healing is suggestive of inadequate cellular regeneration crucial for tissue repair. Glucagon, released by alpha cells, facilitates

glycogenolysis and promotes both renal and hepatic gluconeogenesis to elevate blood sugar levels (Rojas et al., 2018). Insulin, upon secretion, binds to target cell receptors, activating the glucose transporter protein GLUT4, which enables glucose uptake into cells for metabolic utilization (Xu et al., 2015). Consequently, impaired insulin function results in fatigue, as insufficient glucose is available for energy production.

RESULTS

Management of Hyperglycaemia

The patient consistent attended regular monitoring appointments until 2016, after which he discontinued annual check-ups, resulting in difficulties in detecting management issues associated with his diabetes, a common concern among many patients with diabetes (Karinja et al., 2019). The lack of regular monitoring undermines timely interventions needed to adequately manage diabetes symptoms. The Care Quality Commission's report highlighted that most patients between 18 and 65 years receive appropriate annual evaluations as per prescribed guidelines (CQC, 2017). Significant evidence underscores the benefits of managing elevated blood glucose levels, demonstrating a reduction in the incidence of sight-threatening diabetic retinopathy and potentially fatal complications (Diabetes UK, 2017). After conducting a comprehensive assessment, such as Ipswich toe and touch toe tests, Waterloo score, MUST tool, HbA1c screening and Memory Impairment Screen were used, the patient's condition and provided recommendations for effective disease management. Waterloo score was 15 which is high risk, MUST tool score due to a high BMI (greater than 20) is assigned a score of 0, indicating low risk of malnutrition, Memory Impairment Screen were used to assess memory lapses condition.

Nevertheless, improved collaboration between primary and secondary care settings is crucial to facilitate the effective management of diabetes (Nazar et al., 2016). The World Health Organization acknowledges that glycated haemoglobin (HbA1c) is a useful diagnostic metric for Type 2 diabetes and monitoring blood glucose levels (WHO, 2011). The optimal target HbA1c level is 48mmol/mol (6.5%) (Diabetes UK, 2018). The patient s HbA1c results recorded indicated a level of 96 mmol/mol, above the recommended range. Regular glucose profiling was performed, particularly during weekly reviews, requiring frequent interaction with specialist nurses due to episodes of hyperglycaemia that necessitated close observation and timely intervention (NICE, 2016). Following a hospital admission, education on self-monitoring became imperative for patient's management, facilitating understanding of blood glucose control in the home environment. Self-monitoring, which NICE (2016) defines as an essential skill, equips patients with the capability for timely diagnosis and tailored insulin therapy in diabetes management. This approach significantly enhances the patient’s quality of life, especially considering his living arrangement with his daughter, which occasionally leads to feelings of loneliness. Missed glucose checks or meal omissions can lead to hypoglycaemic or hyperglycaemic episodes (NICE,

2016). Therefore, it is critical for the patient to understand the symptoms of hypoglycaemia, which may include hunger, anxiety, irritability, palpitations, and sweating.

In extreme cases, severe hypoglycaemic reactions can lead to seizures, unconsciousness, or coma, necessitating immediate assistance from his daughter to elevate his blood glucose levels. The provision of appropriate pharmacotherapy remains a vital strategy in mitigating potential long-term microvascular and macrovascular complications associated with diabetes (Diabetes UK, 2010). The prescribing physician recommended Byetta (exenatide) at a dose of 5 micrograms twice daily, alongside metformin, to improve glycaemic control for the patient (NICE, 2019). Studies by Guo (2016) and Bridges et al. (2020) confirm the safety and effectiveness of combining Byetta with metformin in Type 2 diabetes management. Nonetheless, the potential for side effects, including hypoglycaemia, anxiety, nausea, headaches, and dizziness, underscores the importance of supervised administration to avert significant health complications. the patient previously used a short-acting insulin injection preceding meals to manage meal-related insulin needs and address pre-prandial hyperglycaemia, in accordance with recommendations from NICE (2019). Consequently, regular blood glucose monitoring is imperative (NICE, 2019).

The patient 's deteriorating condition has led to additional health complications, notably cardiovascular disease due to the accumulation of fatty deposits, cholesterol, and other materials within arterial walls. Beckwith (2014) notes that individuals with diabetes are at heightened risk of accelerated atherosclerosis, often exhibiting vascular lesions. Kovatchev (2017) attributes this condition to fluctuating glycaemic levels and lipid imbalances that arise within the body. Additionally, the presence of dehydration from osmotic diuresis, the patient at an increased risk of renal complications. Effective diabetes management can decrease elevated blood glucose and blood pressure, thereby diminishing complications (Nazar et al., 2016). Consequently, the patient is prescribed chlorthalidone, a diuretic, which improves hypertension management. As Shah et al. (2014) explain, diuretics play a role in sodium retention, a factor critical for lowering blood glucose levels and alleviating diabetes symptoms (Brands and Manhiani, 2012).

Throughout the 11 years managing diabetes, the patient has faced an increased risk of tissue damage, necessitating prompt treatment to avert dire complications such as blindness, foot ulcers potentially requiring amputation, heart failure, or fatal outcomes (NICE, 2016). Control of the patient 's blood pressure remains a significant aspect of his care strategy. The continuous monitoring of blood pressure is vital to ensure it remains below recommended thresholds (Grossman and Grossman, 2017). As indicated by NICE (2016), treatment should be initiated when clinic blood pressure exceeds 140/90 mmHg. Furthermore, lipid-lowering therapies are imperative to reduce bodily lipids and mitigate cardiovascular risks. The use of angiotensin-converting enzyme (ACE) inhibitors and antiplatelet therapies may further lower the risk of adverse cardiovascular events (Beckman et al., 2002). In

conjunction with pharmacological measures, the patient is advised to adopt a healthy diet to improve overall physical health outcomes. Following one year, the patient demonstrated significant improvements in HbA1c (from 96 mmol/mol to 46mmol/mol) and blood pressure levels (from 176/104 mmHg to 130/82 mmHg).

The patient's body mass index (BMI) of 35 categorises him as obese, per World Health Organization (WHO, 2019) criteria, which defines obesity as a BMI of 30 or above. Obesity is a significant contributor to morbidity and premature mortality (RCN, 2019). Consequently, managing hyperglycaemia has necessitated the implementation of a low-carbohydrate diet to maintain blood glucose within acceptable limits. Carbohydrates have the most profound effect on blood sugar levels, thus reducing carbohydrate intake proves beneficial for individuals with diabetes (Diabetes.co.uk, 2019). Additionally, dietary patterns such as the Mediterranean diet are shown to lower the risk of developing Type 2 diabetes, especially when paired with regular physical activity (Diabetes.co.uk, 2019). However, further evidence is needed to comprehensively examine the Mediterranean diet's effectiveness in diabetes management (NHS, 2011). The complexities surrounding the patient's condition pose challenges for effective management within community settings, thus necessitating regular monitoring of his glucose levels and adherence to dietary recommendations.

Wound Healing

Patients with diabetes frequently experience delayed wound healing, which may manifest as painful wounds accompanied by malodour due to pus discharge (Okonkwo and DiPietro, 2017). In the patient's case, a recent wound on his right foot posed a risk of developing an ulcer. Consequently, he received regular wound care treatment during his hospital visits and was advised on appropriate footwear to enhance his condition (NICE, 2016). Additionally, the patient suffered from peripheral artery disease (PAD), a condition that compromises blood flow to the extremities, particularly affecting areas such as the legs. Hyperglycaemia is a known contributing factor for PAD, as elevated glucose levels can lead to neuropathy, resulting in nerve damage that disrupts blood vessel function (Thiruvoipati et al., 2015). Scott (2015) explains that hyperglycaemia induces hyperosmolality, which results in diminished blood perfusion and oxygenation. Furthermore, high glucose concentrations hinder oxygen delivery, thereby impeding cellular function and inflammatory response, ultimately compromising the body's ability to heal wounds effectively (Diabetes.co.uk, 2019).

Patients experiencing hyperglycaemia necessitate timely and adequate wound care to prevent secondary infections (NICE, 2019). Due to the patient's dementia, meticulous monitoring of his movements was requisite to mitigate the risk of self-inflicted injuries that could result in wounds resistant to healing; therefore, his family was made aware of potential advanced complications. Proper management of hyperglycaemia is paramount in reducing the incidence of PAD among individuals

diagnosed with Type 2 diabetes (Thiruvoipati et al.,2015). Additionally, it is essential for patients to manage their blood pressure and cholesterol levels to minimise lipid accumulation within vascular structures (NICE, 2016). Given the patient's diagnosed PAD, a comprehensive treatment plan was established to maintain his glucose levels within acceptable limits, alongside adherence to a nutrition plan designed to provide critical nutrients (Kamil et al., 2019). Effective management of hyperglycaemia has been demonstrated to diminish the risk of wound formation, as a well-functioning immune system enhances the healing process (Strbo et al.,2014).

Impact of Dementia

The patient 's prolonged suffering from diabetes has led to the onset of dementia, a condition often prevalent in patients with diabetes. Gudala et al. (2013) noted that individuals with Type 2 diabetes are significantly predisposed to developing dementia, particularly forms associated with Alzheimer's disease. As the patient 's primary next of kin, his daughter has been instrumental in his care, particularly following the loss of several family members, which, coupled with his diabetes, has profoundly affected his mental health. Research by Feng and Astell-Burt (2017) indicates that individuals living with diabetes frequently experience deteriorating mental health, characterised by forgetfulness and diminished social interactions, consequently leading to a reduced quality of life. The patient was diagnosed with vascular dementia in 2015, a condition that may be traced back to 2005 when he first exhibited symptoms of memory loss. Memory Impairment Screen were used to assess the patient's condition by his GP and referred to the hospital due to high score as a result of unmanaged diabetes, high blood glucose levels had occurred.

Dementia has a considerable impact on glucose regulation, with levels of hyperglycaemia often remaining elevated in the context of poorly controlled diabetes (Tuligenga, 2015). Elevated hyperglycaemia rates are commonly attributed to a failure to adhere to appropriate eating schedules (TREND-UK, 2013). Moderate cognitive dysfunction is a frequent complication of diabetes, although the correlation between severe hyperglycaemia and cognitive decline remains a topic of ongoing debate (Ryan et al., 2016). Recurrent hyperglycaemia leads to vascular damage, particularly affecting cerebral circulation (Xu, 2015). Having endured diabetes for numerous years, the patient exhibits cognitive impairment, as glucose is fundamental to optimal brain function. Treatment for the patient must focus on the severity of his cognitive dysfunction, as articulated by Puttann and Padinjakara (2017). A treatment strategy geared towards mitigating vascular risks and achieving stringent blood glucose control is vital to prevent potential cardiac issues (Upadhya et al., 2017). The patient has a history of depression and consequently was prescribed sertraline to address his depressive symptoms, particularly as he struggled to maintain independent living. While the patient occasionally missed scheduled hospital appointments, his frustration escalated with the recognition of his dementia. According to Britneff and

Winkley (2013), the presence of depression often leads to non-compliance in attending medical appointments, thereby further intensifying feelings of frustration and guilt among affected individuals. A closer assessment revealed that the patient's family lacked active support to ensure attendance at essential hospital check-ups, resulting in frequent missed appointments for eye examinations and podiatry assessments.

Kalra et al., (2018) concluded that patients with diabetes frequently require substantial psychological support throughout their diagnosis and subsequent treatment phases to aid in coping with their condition. Despite his challenges, the patient actively participates in dementia therapy sessions at a local day-care centre, which has positively influenced his outlook on life. Living independently in a flat, he has limited assistance from a warden who facilitates transportation to the day-care centre, especially after the revocation of his driving licence. The driving authority may revoke the licences of individuals experiencing extreme hyperglycaemia, ensuring their safety and the safety of others (Hamdy et al., 2018).

Nevertheless, the patient appreciates the option of public transport, which he uses to visit relatives and friends. The restrictions on his mobility have consequential social implications, often resulting in isolation and dependency, both of which can exacerbate mental health challenges (Britneff and Winkley, 2013). Consequently, the patient's living conditions render him a suitable candidate for psychological support. For the past nine years, the patient has managed his diabetes largely independently until interventions from nursing staff became necessary. Ultimately, the support provided by registered nurses (RNs) has somewhat diminished the patient's autonomy in managing the patient's diabetes health. Considerable discussions with diabetes specialist nurses addressed the patient's ability to self-administer his insulin dosages, as evidenced by subcutaneous lipohypertrophy observed at injection sites on his arms and abdomen—a sign of tissue stress from repeated injections (Meece, 2016). Health professionals must adhere to ethical guidelines concerning consent and ensure adherence to ethical standards during mental health assessments for individuals lacking decision-making capacity (NHS, 2019). The patient complied with all necessary procedural guidelines to protect his rights as a patient. A significant concern arises from the occasional exacerbation of vascular dementia symptoms when the patient is away from home and delays administering his insulin. He has taken precautions to carry insulin whenever he leaves the house. However, the lead nurse expressed concerns regarding the reliability of self-administration during these instances. Missed insulin doses among patients with dementia can lead to compensatory behaviours that result in dangerous double dosing (TREND-UK, 2013). This situation prompted the decision to secure the patient's insulin, allowing access only during administration times, coupled with a robust monitoring framework to prevent potential lapses.

According to the Care Quality Commission (CQC, 2017), there is a pressing need for tailored plans that assist patients like the patient in managing their insulin therapy and overall health needs

effectively. Engagement with the patient was crucial in developing a personalised care plan that ensures meticulous management of his condition, thus safeguarding both his well-being and that of the community (CQC, 2017). The essential decisions regarding safe diabetes management were reached through a collaborative meeting involving case stakeholders, including social workers, care managers, and diabetes specialist nurses. All parties concurred on a cohesive approach to facilitate the patient's quality of life while managing his chronic condition. This collaboration centres on three key dimensions: timely medication administration, self-management of diabetes, and enhancement of social engagement. Social workers play an integral role in ensuring the patient's psychological stability to help mitigate the impact of his dementia. Additionally, the patient reported improved self-care and adherence to management Additionally, the patient reported improved self-care and adherence to management guidelines, leading to a reduction in wound complications and a commitment to a more active lifestyle with socialising. The patient's attitude to life improved further as a result of regular dementia therapy sessions at a local day-care facility. The detailed assessments of revealed self-care challenges associated with dementia, and it is impact on diabetes management.

DISCUSSION

Diabetes care management remains a critical focus within the healthcare systems, particularly in the UK, where financial resources are significantly allocated to address this pressing health issue. According to Diabetes UK (2014), the costs associated with diabetes management are substantial, necessitating effective strategies to mitigate risk factors such as obesity, which complicates diabetes management. The effectiveness of healthcare systems is foundational to improving diabetes care outcomes. Adequate investment in human and technological resources is essential. Haw et al., (2015) emphasize that healthcare organizations must maintain proper staffing levels to facilitate high-quality patient care. Insufficient staffing directly correlates with negative health outcomes, creating barriers to optimal diabetes management. Additionally, expanding professional roles within healthcare settings can enhance patient monitoring and medication adjustments (Watts and Sood, 2016). The implementation of electronic patient registries improves medical record management and fosters better communication among healthcare providers (Brumm et al., 2016). Competence among healthcare providers is vital for the effective management of diabetes. Gold et al. (2015) assert the necessity for healthcare professionals to possess up-to-date knowledge and skills for accurate diagnosis and treatment. By focusing on enhancing healthcare provider competencies, organizations can ensure that patients receive individualized care that meets their unique needs. Adequately trained nurses, for example, are crucial in supporting patients' self-care initiatives, contributing significantly to positive health outcomes (TREND-UK, 2013). A patient-centred approach to diabetes management plays an essential role in improving care outcomes. Mukerji et al. (2019) highlight the importance of involving patients as active participants in their care, which has been shown to lead to better health outcomes. Furthermore,

promoting self-care among diabetes patients is critical, as effective self-management has been associated with improved quality of life and reduced healthcare costs (Russell et al., 2017). Healthcare professionals are encouraged to engage patients in discussions regarding lifestyle adjustments and blood glucose monitoring, empowering them to take charge of their health. In conclusion, addressing diabetes care challenges in the UK requires a multifaceted strategy focused on optimizing healthcare systems, fostering provider competence, and supporting a patient-centre model of care. By tackling these issues, the healthcare system can enhance the quality of diabetes management and ultimately improve patient outcomes.

CONCLUSION

Diabetes represents a multifaceted condition that profoundly impacts individuals' quality of life, with heightened challenges faced by patients with concurrent dementia. For the patient, Type 2 diabetes has stemmed from a combination of sedentary lifestyle factors and obesity. The body requires glucose levels to be maintained within a narrow range for optimal metabolism. Furthermore, effective management of hyperglycaemia demands continuous blood glucose monitoring and prompt administration of medications. The patient's experience with diabetes, paired with dementia, illustrates the negative ramifications on his quality of life, primarily due to challenges in self-care capabilities. Therefore, it is imperative to educate the patient on self-care practices, which can significantly influence the development and management of his diabetes. Regular adherence to antihypertensive medications and diligent management of diabetes-related wounds is also vital. An individualised care strategy for the patient would serve as a critical reference for nursing objectives and evaluations.

The UK possesses a relatively advanced healthcare infrastructure, characterised by telehealth capabilities, well-informed nurses with delineated roles, and collaborative frameworks aimed at optimising diabetes management. The knowledge and training acquired over the years have substantially enhanced my professional competencies, including self-awareness, responsible decision-making, and teamwork through relationship-building skills. This case study contributes to professional development by providing valuable insights into diabetes management and care strategies that yield improved patient outcomes. The findings presented herein hold significant implications for nursing, advancing awareness of diabetes risk factors, co-morbidities, and holistic care approaches to elevate patient experiences. A principal recommendation for future practice is for healthcare systems to prioritise the development of nursing competencies and foster environments that support holistic care to enhance diabetes management and mitigate mortality.

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HEPATITIS a SEROPREVALENCE in UŞAK PROVINCE: CHANGES between 2018-2024

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ABSTRACT

Hepatitis A is a contagious infection and continues to be a significant global public health issue. This study aimed to retrospectively assess current hepatitis A cases and the seroprevalence of hepatitis A in Uşak. Data from patients who underwent anti-HAV IgM and anti-HAV IgG testing at a hospital in Uşak between January 1, 2018, and December 31, 2024, were retrospectively analyzed. A total of 11,598 anti-HAV IgM and 11,552 anti-HAV IgG test results were analyzed. The number of patients with positive anti-HAV IgM and anti-HAV IgG results was 37 (0.32%) and 7,592 (65.72%), respectively. Among the anti-HAV IgM-positive patients, 20 (54%) were male and 17 (46%) were female. No significant differences were observed in terms of age group or gender among patients who tested positive for anti-HAV IgM. Among the anti-HAV IgG-positive patients, 3,521 (46.4%) were male and 4,071 (53.6%) were female. The anti-HAV IgG seropositivity was 68.9% in males and 63.2% in females. The lowest anti-HAV IgG seropositivity was observed in the 6–14 (44.7%) and 15–34 (33.5%) age groups. A significant difference was observed in anti-HAV IgG seropositivity among different age groups and between genders. The significantly lower seropositivity for hepatitis A in the 6–14 and 15–34 age groups indicate that the age of exposure to the virus has shifted to older ages. This is likely associated with the nationwide hepatitis A vaccination program launched in 2012. Developing catch-up vaccination programs for these age groups is crucial for enhancing community immunity.

Keywords: *Hepatitis A, Seroprevalence, Vaccination*

INTRODUCTION

Hepatitis A virus (HAV) is an RNA virus that spreads through the fecal-oral route. Although a highly effective vaccine against hepatitis A has been developed, HAV infection remains a significant cause of acute viral hepatitis worldwide. Hepatitis A does not cause chronic liver disease, but it can cause severe symptoms and, in rare cases (around 0.35%), can lead to fatal fulminant hepatitis (Jeong and Lee, 2010). The most critical determinant of disease severity is age. Approximately 70% of adults develop symptomatic infection, whereas this rate is around 30% in children and adolescents. Between 4% and 20% of symptomatic patients experience relapsing HAV infections, and approximately 10% develop cholestatic hepatitis (Kemmer and Miskovsky et al.,, 2000).

Hepatitis A occurs worldwide, either sporadically or in outbreaks associated with contaminated food or water. HAV is prevalent globally but is more common in low-income regions and developing countries. The virus is endemic in South Asia and sub-Saharan Africa, where exposure in early childhood results in high levels of immunity. In contrast, developed countries such as the United States and Western European nations have lower HAV infection rates, yet the susceptibility of the non-immune adult population is significantly higher than in low-income countries (Abutaleb and Kottilil et al., 2020)

The World Health Organization (WHO) reported that over 7,000 people worldwide died from hepatitis A in 2016. Data from the Centers for Disease Control and Prevention (CDC) show that HAV outbreaks have occurred in several U.S. states since 2016, primarily due to person-to-person transmission. Despite a roughly 60% decline in newly reported HAV cases in the United States between 2021 and 2022, the incidence in 2022 was still nearly twice as high as it was in 2015.

In Turkey, the hepatitis A vaccination program was launched at the end of 2012. It is administered in two doses to children born on or after March 1, 2011, at 18 and 24 months of age. Although HAV remains endemic in Turkey, its incidence has gradually declined, and the age of exposure to the virus has shifted towards adolescence and young adulthood. In Uşak, the anti-HAV IgM seropositivity was reported as 0.77%, while the anti-HAV IgG seropositivity was 73.89% between 2009 and 2017 (Güngör et al., 2021).

This study aims to assess the current (2018–2024) hepatitis A seroprevalence in Uşak province and compare it with nationwide data. The findings will provide valuable insights for healthcare professionals to establish regional adult vaccination targets.

MATERIALS and METHODS

In this retrospective study, data of patients who underwent anti-HAV IgG and anti-HAV IgM antibody testing in a hospital in Uşak province between January 1, 2018 and December 31, 2024 were

analyzed. If a patient had multiple test results, only the first test result was included in the study, and repeated tests were excluded.

The independent variables of the study included gender (male or female), age groups (0–5, 6–14, 15–34, 35–44, 45–54, 55–64, and >64), and year. The distribution of anti-HAV IgM and anti-HAV IgG seropositivity between 2018 and 2024 was examined. Frequency and percentage analyses were performed for categorical independent variables. Descriptive statistics for continuous variables were expressed as mean ± standard deviation according to the data distribution.

The Pearson chi-square test was used for comparisons between categorical variables. A p-value of less than 0.05 was considered statistically significant. All statistical analyses were conducted using IBM SPSS Statistics 23 (NY, USA).

The study received approval from the Uşak University Ethics Committee for Non-Interventional Clinical Studies (approval date: 12/09/2024, approval number: 429-429-11) and was carried out in accordance with the Declaration of Helsinki.

RESULTS

A total of 11,598 anti-HAV IgM and 11,552 anti-HAV IgG test results were analyzed. The number of positive cases for anti-HAV IgM and anti-HAV IgG was 37 (0.32%) and 7,592 (65.72%), respectively. The annual distribution and positivity rates of these cases are presented in Table 1 and Figures 1 and 2.

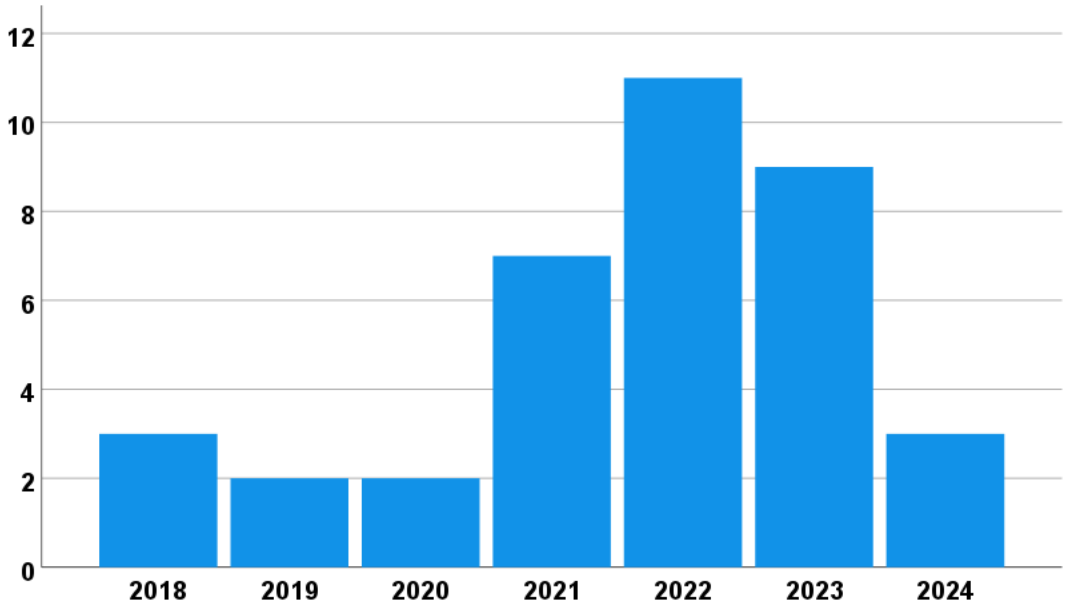

Figure 1. Yearly distribution of anti-HAV IgM (+) patients

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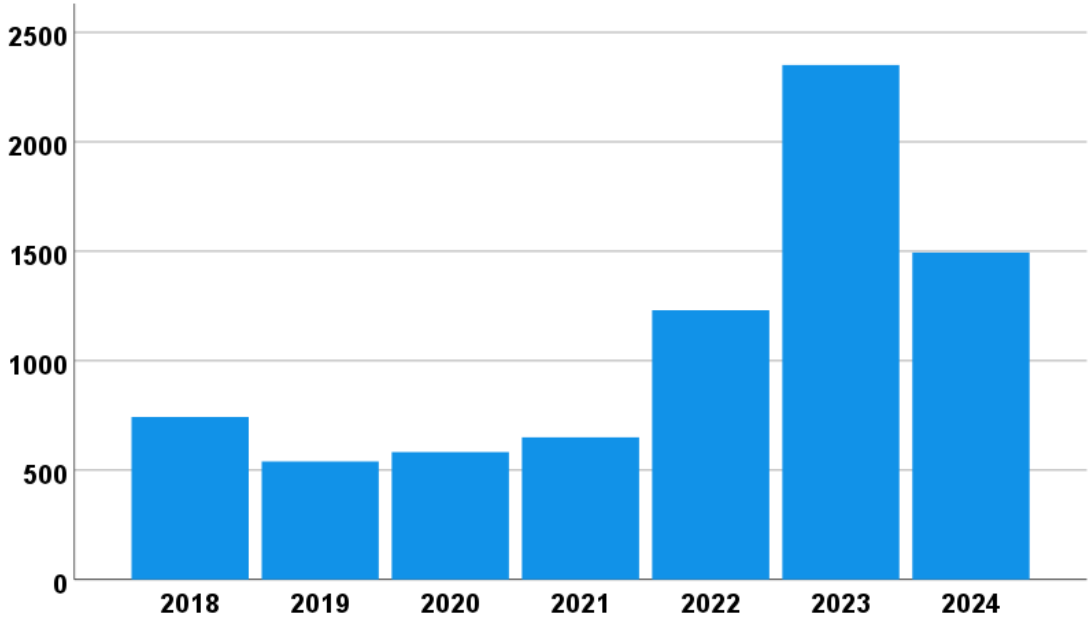

Figure 2. Yearly distribution of anti-HAV IgG (+) patients

Table 1. Anti-HAV IgM and anti-HAV IgG seropositivity by year

	IgM (+)	Total IgM Test	(%)	IgG (+)	Total IgG Test	(%)
2018	3	1729	0.17	743	1118	66.45
2019	2	1446	0.14	540	819	65.93
2020	2	776	0.26	583	773	75.42
2021	7	970	0.72	650	920	70.65
2022	11	1840	0.6	1231	1857	66.28
2023	9	3051	0.29	2351	3515	66.88
2024	3	1786	0.17	1494	2550	58.58
Total	37	11598	0.32	7592	11552	65.72

Among the 11,598 patients tested for anti-HAV IgM, 5,196 (44.8%) were male and 6,402 (55.2%) were female. Of the 37 patients who tested positive for anti-HAV IgM, 20 (54%) were male and 17 (46%) were female. The seropositivity rate for anti-HAV IgM was 0.4% in males and 0.3% in females. A chi-square test was conducted to assess the association between gender and anti-HAV IgM positivity, which did not reveal a statistically significant difference (χ^2 (1) = 1.285, p = 0.257). Therefore, anti-HAV IgM positivity was distributed similarly between males and females.

Among the 11,552 patients tested for anti-HAV IgG, 3,521 (46.4%) were male and 4,071 (53.6%) were female. Among the 7,592 patients who tested positive for anti-HAV IgG, the seropositivity rate was 68.9% in males and 63.2% in females. A chi-square test assessing the association between gender and anti-HAV IgG positivity revealed a statistically significant difference (χ^2 (1) =

40.234, $p < 0.001$). Thus, gender was found to be significantly associated with anti-HAV IgG positivity. The gender distribution of anti-HAV IgG positivity is shown in Table 2.

Table 2. Gender-based distribution of anti-HAV IgM and anti-HAV IgG seropositivity

		Male	**Female**	**p**
Anti-HAV IgM	+ (%)	20 (0.4%)	17 (0.3%)	0.257
	Total	5196	6402	
Anti-HAV IgG	+ (%)	3521 (68.9%)	4071 (63.2%)	< 0.001
	Total	5113	6439	

The mean age of patients with a positive anti-HAV IgM test result was 40.4 ± 22.8. A chi-square test evaluating the association between age group and anti-HAV IgM positivity did not reveal a statistically significant difference (χ^2 (6) = 4.163, $p = 0.655$). Therefore, anti-HAV IgM positivity was similarly distributed across different age groups.

Among the 11,552 patients tested for anti-HAV IgG, the mean age of those with a positive test result was 47.8 ± 20.1. The lowest seropositivity rates were observed in the 6–14 (44.7%) and 15–34 (33.5%) age groups, while the highest seropositivity rates were detected in the 45–54 (96.7%), 55–64 (99.3%), and >64 (99.8%) age groups. A chi-square test assessing the association between age group and anti-HAV IgG positivity revealed a statistically significant difference (χ^2 (6) = 4,691.267, $p < 0.001$). Therefore, anti-HAV IgG positivity varied significantly across different age groups. Table 3 presents the distribution of anti-HAV IgM and anti-HAV IgG seropositivity by age group.

Table 3. Distribution of anti-HAV IgM and anti-HAV IgG seropositivity by age groups

		0-5	**6-14**	**15-34**	**35-44**	**45-54**	**55-64**	**>64**	**p**
Anti-HAV IgM	+ (%)	1 (0.4%)	1 (0.3%)	16 (0.4%)	7 (0.4%)	2 (0.1%)	2 (0.2%)	8 (0.3%)	0.655
	Total	234	394	4092	1691	1527	1312	2348	
Anti-HAV IgG	+ (%)	164 (77.8%)	155 (44.7%)	1708 (33.5%)	1471 (84.2%)	1390 (96.7%)	985 (99.3%)	1719 (99.8%)	< 0.001
	Total	211	347	5096	1747	1437	992	1722	

DISCUSSION

Anti-HAV IgM serology can be positive during active infection or within a limited period of 3–6 months after infection. Furthermore, HAV infection often presents asymptomatically. Due to its transient nature and the asymptomatic course of most infections, anti-HAV IgM serology provides only an approximate measure of acute hepatitis A incidence (Shin et al., 2010).

According to data from the Ministry of Health, the prevalence of HAV in Turkey has historically varied across regions, with higher endemicity in the eastern and southeastern areas. However, regional variations have decreased in recent years. Studies on the incidence of acute hepatitis A in Turkey remain limited, with most research focusing on past infection prevalence and immunity. Nonetheless, some provincial-level studies have been conducted in recent years. The positivity rate for anti-HAV IgM testing was reported as 1.3% at Kastamonu Training and Research Hospital (2018–2022) (Tüfekçi et al., 2022), 0.18% at primary healthcare institutions in Gaziantep (2019–2022) (Aslan et al., 2024), 0.36% at Istanbul Başakşehir Çam and Sakura City Hospital (2020–2023) (Karabey et al., 2024), and 0.7% at Hitit University Erol Olçok Training and Research Hospital in Çorum (2017–2020) (Düzenli et al., 2022). In the present study, anti-HAV IgM seropositivity (0.32%) was comparable to that reported in Istanbul (0.36%), a city with high socioeconomic development.

Between 2009 and 2017, anti-HAV IgM seropositivity in Uşak province was reported as 0.77%, showing a decreasing trend over time (Güngör et al., 2021). Consistent with this trend, the present study observed a further decline to 0.32%, suggesting a continued reduction in acute HAV incidence. This decline is likely attributable to the nationwide hepatitis A vaccination program initiated in 2012.

Between 2011 and 2017, the anti-HAV IgG seropositivity rate in Uşak province was 73.89%, exhibiting a downward trend (Güngör et al., 2021). In the present study, this rate was 65.72% for the period between 2018 and 2024. Moreover, a decline of approximately 8% was observed from 2018 (66.45%) to 2024 (58.58%). These findings suggest that the decreasing trend in anti-HAV IgG seropositivity observed before 2018 has persisted in the 2018–2024 period. This decline may be attributed to the widespread implementation of the childhood hepatitis A vaccination program, which has reduced natural infection-induced immunity. Additionally, improvements in socioeconomic and hygiene conditions may have contributed to decreased HAV exposure. Changes in the demographic structure, particularly the increasing proportion of younger individuals with lower seropositivity, may have also influenced this trend (Koroglu et al., 2017).

Between 2011 and 2017, anti-HAV IgG seropositivity in Uşak province was reported as 78.01% in the 0–5 age group, 14.03% in the 6–14 age group, 31.28% in the 15–24 age group, 70.42% in the 25–34 age group, 94.93% in the 35–44 age group, 99.68% in the 45–54 age group, and 100% in the 55–64 and >64 age groups (Güngör, 2021). The current study (2018–2024) revealed a similar distribution, with seropositivity rates of 44.7% in the 6–14 age group and 33.5% in the 15–34 age group.

Although these rates have increased compared to the previous period, they remain lower than those observed in older age groups.

Recent provincial studies in Turkey have reported similar trends, with low anti-HAV IgG seropositivity in adolescence and young adulthood. In İzmir, another city in the Aegean region, seropositivity was also found to be low in these age groups (Çalık et al., 2019). Similar findings have been reported in other provinces, including Istanbul (Karabey et al., 2024), Çorum (Düzenli et al., 2022), Kastamonu (Tüfekçi et al., 2022), Balıkesir (Kula Atik et al., 2021), Samsun (Alkan Çeviker et al., 2019), and Yozgat (Kader et al., 2019).

Collectively, these results suggest that the age of HAV exposure has shifted to older age groups due to factors such as the nationwide vaccination program and improvements in sanitation conditions.

CONCLUSION

This study evaluated anti-HAV IgM and anti-HAV IgG seropositivity in Uşak province, providing insights into the changing trends in Hepatitis A virus seroprevalence. The findings indicate a significant decline in acute Hepatitis A cases, likely attributable to the nationwide hepatitis A vaccination program initiated in 2012. Specifically, the observed anti-HAV IgM seropositivity rate of 0.32% is consistent with similar studies conducted in Istanbul, reflecting a reduced transmission of the virus.

Additionally, the decline in anti-HAV IgG seropositivity suggests a decrease in natural infection-induced immunity, underscoring the long-term impact of vaccination. The lower seropositivity rates observed among younger age groups indicate a shift in the age of primary exposure to older ages. This trend, along with improvements in socioeconomic and hygiene conditions, has contributed to a more controlled epidemiological profile for Hepatitis A.

However, to prevent potential HAV outbreaks, catch-up vaccination programs should be developed, particularly targeting school-aged children and young adults who may not have acquired immunity through natural infection or routine childhood vaccination.

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CHARACTERISTICS of CONJUNCTIVAL TUMORS in PATIENTS PRESENTING to TERTIARY OPHTHALMOLOGY CLINIC

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ABSTRACT

This study aimed to evaluate the demographic, clinical, and histopathological types of conjunctival tumors in patients presenting to the Erciyes University Ophthalmology Clinic. The objective was to identify factors associated with tumor malignancy. This retrospective study analyzed 23 conjunctival tumor cases from patient records between August 15th 2024 and January 15th 2025 at the Ocular Oncology Clinic. Data collected included age, gender, tumor pigmentation, histopathological type, location, and corneal involvement. Statistical analyses were performed using chi-square tests for categorical variables and t-tests for continuous variables. The significance level was set at $\alpha < 0.05$. The mean age of patients was 40.87 ± 25.85 years. Malignant tumors were diagnosed at a significantly older age (60.18 ± 18.73 years) compared to benign tumors (23.17 ± 17.39 years, $p < 0.01$). Gender distribution showed that tumors were more frequent in males (65.22%) than females (34.78%), but no significant association with malignancy was found ($p = 0.88$). Amelanotic tumors were more likely to be malignant (43.48%) compared to pigmented tumors (4.35%, $p = 0.01$). Tumor types included conjunctival nevus (47.83%), conjunctival squamous cell carcinoma (30.43%), conjunctival melanoma (13.04%), conjunctival lymphoma (4.35%), and conjunctival blue nevus (4.35%). Most tumors were located on the bulbar conjunctiva (82.61%), but no significant association was observed between location and malignancy ($p = 0.22$). Corneal involvement was significantly associated with malignancy ($p = 0.02$), occurring in 17.39% of malignant cases. The mean diameter for benign tumors was 6.83 ± 3.69 mm, while the mean diameter for malignant tumors was larger at 13.09 ± 10.09 mm ($p = 0.07$).Conjunctival tumours exhibit different demographic and clinical characteristics. Advanced age has been identified as a critical determinant; malignant tumours have been diagnosed in older patients. Amelanotic pigmentation has emerged as a strong indicator of malignancy. In addition, corneal involvement was significantly associated with malignant cases, emphasising the need for careful examination of tumour extention at the time of diagnosis.

Keywords: *Conjunctival tumors, Tumor malignancy predictors, Conjunctival melanoma*

INTRODUCTION

Conjunctival tumors encompass a wide spectrum of ocular surface lesions, ranging from benign to highly malignant neoplasms. These tumors are of significant clinical interest due to their potential to cause visual impairment, cosmetic deformities, and, in malignant cases, life-threatening complications if left untreated (Shields et al., 2004). Identifying and managing malignant conjunctival tumors remains a critical challenge, particularly in tertiary care centers where advanced diagnostic and therapeutic options are available. Malignant tumors of the conjunctiva are often associated with distinct demographic and clinical features, such as older age, amelanotic appearance, and corneal involvement. Studies have shown that the frequency and malignancy rates of these lesions vary across populations, highlighting the need for localized research to tailor diagnostic and treatment approaches (Shields et al., 2004; Mirzayev et al., 2021). Recent data support these findings, showing that premalignant and malignant tumors comprise up to 61.2% of all conjunctival tumors, with squamous cell carcinoma (SCC) and conjunctival intraepithelial neoplasia (CIN) being the most prevalent malignant lesions (Koç et al., 2023). Histopathological and anatomical distribution analyses provide crucial insights into the clinical decision-making process and prognostic evaluations. For instance, conjunctival melanomas, despite being rare, exhibit aggressive behavior with high recurrence and metastasis rates (Esmaeli et al., 2024). Additionally, genetic and immunohistochemical analyses are emerging as essential tools in the accurate diagnosis and classification of these tumors. Recent research has highlighted the importance of genomic mutations, immune checkpoint markers, and ultraviolet light signatures in the pathogenesis of conjunctival malignancies (Shields et al., 2017).

This study aims to investigate the demographic, clinical, and histopathological characteristics of conjunctival tumors diagnosed at Erciyes University Ophthalmology Clinic. By analyzing patient age, gender, tumor pigmentation, and location, we seek to identify predictive markers of malignancy and contribute to the growing body of knowledge in ocular oncology. Through this research, we hope to enhance early detection and management strategies for conjunctival malignancies, ultimately improving patient outcomes.

MATERIALS and METHODS

Study Design and Setting

This retrospective cohort study was conducted at the Ocular Oncology Division of Erciyes University Ophthalmology Clinic, analyzing the demographic, clinical, and histopathological characteristics of conjunctival tumors. The study was reported in accordance with the STROBE (Strengthening the Reporting of Observational Studies in Epidemiology) guidelines to ensure transparency and methodological rigor in observational research (Vandenbroucke et al., 2007).

Study Population

A total of 102 patients with ocular oncology diagnoses (including orbital, intraocular, eyelid, and conjunctival tumors) were retrospectively evaluated. From this cohort, 23 conjunctival tumors were selected for analysis.

- Inclusion criteria:
    - Patients diagnosed with conjunctival tumors during the study period.
    - Histopathological confirmation of the conjunctival tumor diagnosis.
    - Availability of complete medical records.
- Exclusion criteria:
    - Patients diagnosed with other ocular oncology tumors (e.g., orbital, intraocular, or eyelid tumors).
    - Patients with incomplete medical records.
    - Previously treated recurrent conjunctival tumors.
    - Patients lost to follow-up before biopsy confirmation.

Data Collection Methods and Sources

Patient data were retrospectively collected from:

- Medical records (including clinical history and examination findings).
- Pathology reports (histopathological confirmation of tumor diagnosis).
- Anterior segment photographs (used to document tumor characteristics such as size, pigmentation, and corneal involvement).

Data covered the period between August 15, 2024, and January 15, 2025. The following variables were recorded:

- Demographics: Age, gender.
- Clinical Features:
    - Tumor pigmentation (categorized as amelanotic or pigmented).
    - Tumor location (bulbar conjunctiva, forniceal conjunctiva, palpebral conjunctiva).
    - Corneal involvement (presence or absence).
- Tumor Size: Measured in millimeters (mm) via slit-lamp biomicroscopy.
- Histopathological Diagnosis: Tumor classification based on biopsy findings.

Descriptive statistics were computed for demographic and clinical variables, including mean, standard deviation, frequency, and percentage distributions. Differences between malignant and benign tumors were analyzed using the chi-square test for categorical variables and the independent t-test for continuous variables such as patient age and largest lesion diameter. Statistical significance was determined at a p-value threshold of <0.05.

RESULTS

This study evaluated 23 conjunctival tumors, of which 12 were benign and 11 were malignant. The mean age of patients with benign tumors was 23.17 ± 17.39 years, while patients with malignant tumors were significantly older, with a mean age of 60.18 ± 18.73 years ($p < 0.01$). Tumor types included conjunctival nevus (47.83%), conjunctival squamous cell carcinoma (30.43%), conjunctival melanoma (13.04%), conjunctival lymphoma (4.35%), and conjunctival blue nevus (4.35%) (Figure 1).

Tumor Size Analysis

The largest lesion diameter showed a trend toward significance when comparing benign and malignant tumors. The mean diameter for benign tumors was 6.83 ± 3.69 mm, while the mean diameter for malignant tumors was larger at 13.09 ± 10.09 mm. Although this difference did not reach statistical significance.

Tumor Characteristics

- **Pigmentation**: Amelanotic tumors were more likely to be malignant (43.48%) compared to pigmented tumors (4.35%), with a statistically significant difference ($p = 0.01$) (Table 1).
- **Location**: Most tumors were located on the bulbar conjunctiva (82.61%), but no significant association between tumor location and malignancy was observed ($p = 0.22$) (Table 1).
- **Corneal Involvement***:* Malignant tumors exhibited significantly higher rates of corneal involvement (17.39%) compared to benign tumors ($p = 0.02$) (Table 1).

Table 1. Tumor Characteristics

Variables	Groups	Benign (Count, %)	Malign (Count, %)	P-Value
Age	Benign / Malign	23.17 ± 17.39	60.18 ± 18.73	< 0.01
Gender	Male / Female	8 (34.78%) / 4 (17.39%)	7 (30.43%) / 4 (17.39%)	0.88
Pigmentation	Amelanotic/ Pigmented	5 (21.74%) / 7 (30.43%)	10 (43.48%) / 1 (4.35%)	0.01
Location	Bulbus / Other	11 (47.83%) / 1 (4.35%)	8 (34.78%) / 3 (13.04%)	0.22
Corneal involvement	Present / Absent	0 (0.00%) / 12 (52.17%)	4 (17.39%) / 7 (30.43%)	0.02

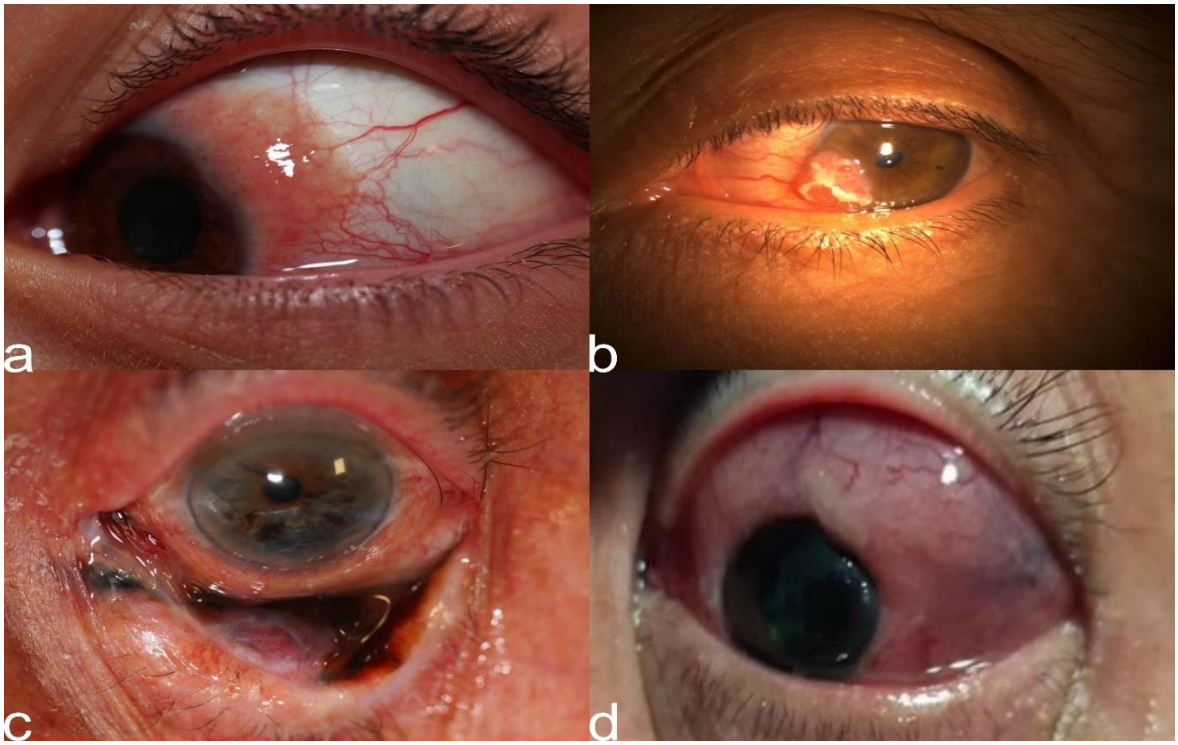

Figure 1. a. Conjunctival nevus, b. Conjunctival scc, c. Conjunctival melanoma, d. Conjunctival lymphoma

DISCUSSION

Conjunctival tumors represent a heterogeneous group of lesions that require precise clinical and histopathological evaluation for accurate diagnosis and management. In this study, malignant conjunctival tumors were significantly associated with older age, amelanotic pigmentation, larger lesion diameters, and corneal involvement.

The likelihood of conjunctival tumor malignancy increases with age. In children and young adults, conjunctival tumors are predominantly benign, with malignancies being rare. The mean age for benign tumors is around 11 years, while malignant tumors are detected at a mean age of 14 years, indicating a slight increase in malignancy risk with age (Shields et al., 2017). In young adults, benign tumors such as nevi are more common, while malignant tumors remain infrequent (Dalvin et al., 2020)

In middle-aged and older adults, malignant conjunctival tumors become significantly more prevalent, with malignancy risk rising notably after the age of 40. (Pellerano et al., 2020; Diao et al., 2020; Besteiro et al., 2023). Squamous cell carcinoma (SCC) is particularly common in individuals over 60 years, (Pellerano et al., 2020; Grossniklaus et al., 1987) often presenting with larger and more aggressive lesions compared to benign tumors. Conjunctival melanoma is also more frequently diagnosed in older patients (Besteiro et al., 2023; Dalvin et al., 2020 ; Paridaens et al., 1983) exhibiting a higher risk of recurrence and visual acuity loss (Dalvin et al., 2020; García-Onrubia et al., 2020). Lymphoid lesions, including lymphoma, are more common in older adults and tend to present with

larger tumor sizes and diffuse involvement (Shields et al., 2017; Diao et al., 2020). Additionally, malignant conjunctival tumors, especially SCC and melanoma, are more frequently observed in males than females (Pellerano et al., 2020; Grossniklaus et al., 1987; Brouwer et al., 2018). Studies have shown that conjunctival melanomas with low pigmentation are associated with a worse prognosis. Specifically, low tumor pigmentation is linked to higher risks of metastasis and death. This association is significant in primary conjunctival melanomas, where low pigmentation correlates with increased metastasis and mortality rates (Shields et al., 2007). Malignant conjunctival tumors, such as melanoma and squamous cell carcinoma (SCC), typically have a larger basal diameter and thickness compared to benign lesions, with a median basal diameter of 8 mm (Shields et al., 2019). In conjunctival nevi, a larger basal tumor diameter has been statistically associated with an increased likelihood of surgical excision due to concerns about malignant transformation, although histopathological malignancy was not observed in excised cases (Shields et al., 2019). Corneal involvement plays a crucial role in the management of conjunctival tumors. Malignant lesions, including conjunctival squamous intraepithelial neoplasia (CSIN), can exhibit corneal growth, complicating their clinical presentation and necessitating thorough diagnostic evaluation (Shields et al., 2004). Similarly, conjunctival melanomas can invade the cornea, sometimes without other conjunctival involvement, emphasizing the need for precise surgical intervention to minimize recurrence risk (Shields et al., 2019). This study has several limitations. Its retrospective design introduces potential biases related to incomplete or missing data. The small sample size (23 cases) limits statistical power and generalizability. As a single-center study, findings may not be applicable to broader populations. Only histopathologically confirmed tumors were included, potentially excluding clinically diagnosed cases. The study lacks long-term follow-up, preventing assessment of recurrence and metastasis rates.

CONCLUSION

This study provides valuable insights into the demographic, clinical, and histopathological characteristics of conjunctival tumors in a tertiary care setting. Malignant tumors were significantly associated with older age, amelanotic pigmentation, larger lesion diameters, and corneal involvement. These findings underscore the importance of early and detailed clinical evaluations to improve the detection and management of conjunctival malignancies. Key predictors of malignancy, such as amelanotic pigmentation and corneal involvement, should be considered critical red flags during clinical assessments. The observed trend of larger lesion diameters in malignant cases further supports the need for vigilance when encountering large conjunctival tumors. By identifying and addressing these risk factors promptly, clinicians can enhance patient outcomes and potentially reduce the morbidity associated with malignant conjunctival lesions.

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None

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OPTIMIZATION of STRUCTURED EARLY MOBILIZATION in INTENSIVE CARE PATIENTS: A REVIEW

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ABSTRACT

Prolonged immobility among critically ill individuals in intensive care units (ICUs) often leads to adverse effects, including significant reductions in muscle mass and functional capacity. Early mobilization (EM) interventions can improve muscle strength, mitigate ICU-acquired weakness (ICU-AW), and decrease the duration of mechanical ventilation (MV) by incorporating physical activity into patient care at earlier stages. Nevertheless, there is still no clear consensus on the ideal timing to start EM. This study aimed to evaluate the impact of EM in critically ill patients in the intensive care unit and explore the potential effects of both the type and timing of mobilization. A comprehensive search of Web of Science, PubMed and Google Scholar databases was conducted, focusing on research published for the last 5 years. The keywords used included "early ambulation," "critical care," "immobilization," and "rehabilitation."Studies suggest that EM may reduce the frequency of weakness and other medical complications, and prolonged mobilization may preserve the functional status of patients. In the studies reviewed, a period of 48-72 hours after MV was considered EM. It is also emphasized that the maximum mobilization level is one of the most decisive factors on patient outcomes. Based on the literature findings, initiation of mobilization within 48-72 hours after MV may be an effective approach to improve clinical outcomes. Moreover, it was observed that the duration, frequency and intensity of mobilization play an important role in patient outcomes.

Keywords: *Early ambulation, Critical care, Immobilization, Rehabilitation*

INTRODUCTION

Intensive care units (ICUs) play a vital role in any of the relevant hospitals to increase the likelihood of survival for people with acute illnesses or exacerbations of chronic diseases (Swaminathan et al., 2019). According to epidemiologic data, millions of people are admitted to the ICU every year, many of whom have significant morbidity, mortality and treatment costs, and face complications related to prolonged bed rest (Winkelman, 2009). Prolonged immobility in the ICU is associated with several adverse outcomes, including muscle atrophy, weakness, ventilator-associated pneumonia, pressure sores and thromboembolic events. Furthermore, prolonged immobility may exacerbate psychological stress and predispose to the development of psychiatric disorders such as anxiety, depression and post-traumatic stress disorder in ICU patients (Alaparthi et al., 2020). These can persist for years as a post-intensive care syndrome. Acute physical weakness, known as intensive care unit acquired weakness (ICU-AW), affects approximately half of all critically ill patients, leading to late termination of mechanical ventilation and prolonged hospital stay. The recommended treatment approach to prevent ICU-AW is early mobilization (EM) (Daum et al., 2024).

Early Mobilization

Although EM is often not clearly defined, as a general framework it can be defined as “any active exercise in which patients can take part in a variety of activities using their muscle strength and control abilities” (Carol et al., 2022). This definition can start with in-bed exercises (such as rolling, bridging) and can include more complex movements such as standing, walking and activities of daily living (such as transferring, toileting, dressing, bathing). Increasing the level of physical activity is continued according to the patient's tolerance, ideally until the target activity level is reached. Although EM is generally accepted to start between day 1 and day 4 of initiation of mechanical ventilation, this practice may vary in both research and clinical practice (Rawal and Bahhru, 2024). It should be emphasized that the effectiveness of mobilization depends on several factors, such as its type and timing. However, as there is no consistent definition of “early” in the EM literature, most studies consider any mobilization activity performed at any time during the mechanical ventilation (MV) process or within 48 to 72 hours of the start of MV as EM. However, there is no universal definition of EM in mechanically ventilated patients and there is no clear agreement on which activities should be considered as such (Wang et al., 2023). However, it should be emphasized that the effectiveness of mobilization depends on factors such as its type and timing. In this context, determining the optimal timing and methods for EM in critically ill patients is of paramount importance. Identifying the appropriate time of mobilization initiation and the most effective techniques can significantly improve patient outcomes and prevent delays in achieving EM goals (Watanabe et al., 2023). Further research is

required to gain a clearer understanding of the optimal timing, type, and dosage of interventions, as well as their effects on long-term patient outcomes. (Hodgson et al., 2020).

MATERIALS and METHODS

Three main databases, Web of Science, PubMed and Google Scholar, were searched over the last 5 years using the keywords “early ambulation, critical care, immobilization and rehabilitation. Each search term combination included at least one keyword related to critical care and at least one keyword related to early mobilization. The search examined the title, abstract and keyword fields. This review examines the findings of the included studies.

Inclusion Criteria

- Studies published in the last 5 years
- Studies examining early mobilization in intensive care and the effect of changes in mobilization protocol
- Studies with two or more variables, including duration or type of early mobilization
- Studies with results obtained as a result of early mobilization
- Research presenting the optimal duration and type of early mobilization approach

Exclusion Criteria

- In this study, studies that did not examine the effect of early mobilization and mobilization protocol changes in intensive care in the last 5 years
- The subject of the study is outside the subject of the compilation
- Studies that do not present an approach to change the optimal duration and type of early mobilization

RESULTS

After reading the full texts in Web of Science, PubMed and Google Scholar databases, 5 articles meeting the inclusion criteria were included in the study. All studies included in these articles included at least one EM protocol, including timing, type and dose. The results obtained from the five studies are shown (Table 1).

Table 1. Studies Included

Source	Number of Participants	Mobilization Duration	Implementation	Main Results
Patel et al., 2023	200 patient individuals (100: Normal care; 100: Early mobilization)	Treatment session within the first 96 hours of mechanical ventilation	Range of motion - in-bed - sitting - standing - walking in place - mobilization	72 hours, which may have led to inconclusive results. It clearly highlights the importance of avoiding delays in initiating mobilization
Yen et al., 2024	65 patients 33 Early progressive mobilization and 32 Early progressive upright positioning	Within the first 24 hours and 7 days 5 days a week, 30 min	Range of motion - in-bed - sitting - standing - balance - walking in place - mobilization	Starting early mobilization within the first week after injury significantly reduces the length of stay in the intensive care unit and the need for mechanical ventilation.
Gatty et al., 2024	63 patients (32 Examination group ; 31 Control group)	Within 5-7 days within the discharge period	5 levels of mobilization protocol	Initiated within the first 2-5 days of critical illness and recommended to limit or prevent physical dysfunction
Zhou et al., 2022	320 patient individuals (160 Examination group, 160 Control group)	Mobilization 24 to 72 hours after mechanical ventilation	Mobilization from passive progressive exercise to active exercise	The early progressive mobilization group, initiated within 24 to 72 hours, shows some positive clinical outcomes compared to the control group. However, there is insufficient evidence regarding the effects of starting the mobilization at different time points, such as 24, 48, or 72 hours after mechanical ventilation.
Hodgson et al., 2022	750 patients (372 Early mobilization, 378 Usual care)	Started within 24 hours of admission	Patients received training according to mobilization level in the Intensive Care Mobility Scale	For adults mechanically ventilated, increased early active mobilization did not affect the number of days of survival

Despite the existence of supporting evidence and guidelines, the implementation of ICU mobilization and rehabilitation remains inconsistent. For instance, a randomized controlled trial was conducted to assess the effects of EM on critically ill ICU patients, where participants were assigned to two groups.The EM group performed the intervention within the first 96 hours of mechanical ventilation

and received a program consisting of range of motion - in-bed - sitting - standing - walking exercises. When we look at the results of this study, intervention was not provided within the expected time (within 72 hours), which led to inconclusive results. The researchers state that delays in initiating mobilization are one of the limitations of the study (Patel et al., 2023). In contrast, in a more recent randomized controlled study in patients with moderate to severe traumatic brain injury, an EM program was applied 5 days a week for 30 minutes in the first 24 hours and 7 days. While 33 people who received early progressive mobilization received early out-of-bed mobilization therapy, 32 people who received early progressive upright positioning training entered early in-bed upright position rehabilitation. As a result of this study, the researchers concluded that starting EM within the first week after injury significantly reduced the length of stay in the intensive care unit and the need for mechanical ventilation (Yen et al., 2024). Although the concept of "early" covers an indefinite period of time, it is known as early implementation and intensification of physical therapy given to critically ill patients. In a recent study, the concept of early is defined as starting within the first 2-5 days of critical illness and is recommended to limit or prevent physical dysfunction. In this study, a mobilization protocol consisting of 5 levels was applied on the first day of the intensive care unit, the first day of rehabilitation and the last day of rehabilitation and it was concluded that mobilization at each stage was effective in improving the mobility status of the patients. (Gatty et al., 2020). However, it is known that initiation of EM at different times after mechanical ventilation leads to various outcomes. In particular, the timing of initiation remains controversial in terms of safety profile and other implementation details. Therefore, further studies are needed to resolve these disagreements. For example, a study from 2022 showed that although the application of early progressive mobilization within 24 to 72 hours had some positive clinical outcomes, there was a lack of differences between patients with various initiation times at 24, 48 or 72 hours (Zhou et al., 2022). Although the studies reviewed in the literature show positive results of EM, for example, the initiation of rehabilitation within 24 hours after ICU admission may create the potential for increased adverse events associated with early rehabilitation. In a study on this subject, the application of early active mobilization within 24 hours after ICU admission was remarkable. As a result of this study, it was concluded that the group receiving early active mobilization did not affect the number of days of survival and hospital discharge compared to the group receiving normal mobilization in the intensive care unit. (Anon, 2022).

DISCUSSION

Studies show that EM, when initiated within the first 72 hours in patients admitted to the ICU, can significantly shorten ICU and hospitalization times and improve patients' functioning and quality of life. However, there is insufficient information on the effects of initiating rehabilitation within this 72-hour period on the various components of ICU outcome (physical, cognitive and mental functioning). There is also limited knowledge on the potential safety implications of such an

intervention. Mobilization interventions in the ICU setting are considered an effective therapeutic approach that prevents or reduces functional impairments and ICU-General Unit transition. Studies have indicated that mobilization can be initiated at different time periods from ≤24 hours to >7 days after ICU admission. However, it has been shown that initiation of mobilization within 48-72 hours may be the optimal time window to improve clinical outcomes. Furthermore, the results of the studies emphasize that EM intervention beyond 72 hours leads to inconclusive results and delays in initiating mobilization should be avoided. In view of this, EM encompasses a wider range of physical activities focusing on functional mobility and significantly reduces the need for mechanical ventilation. This exercise protocol appears to be from passive progressive exercise to active exercise in the studies reviewed. However, different results were obtained when looking at various initiation times. However, studies believe that any EM activity initiated at any time during the course of MV or between 48 and 72 hours after the start of MV is beneficial.

CONCLUSION

In conclusion, this study revealed that the initiation of mobilization protocols within a time frame of 24-72 hours after ICU admission could potentially be the most beneficial strategy to reduce the incidence of muscle weakness and related medical complications in the ICU. It was also determined that initiating mobilization within 48-72 hours after MV may offer an effective approach to improve clinical outcomes. In this process, the duration, frequency and severity of mobilization were observed to play an important role in patient outcomes. These findings suggest that early mobilization contributes to patients' recovery processes and should be considered in clinical practice.

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THE EFFECT of NURSING STUDENTS' COMPASSION LEVELS on THEIR ETHICAL SENSITIVITY

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ABSTRACT

Nursing requires a compassionate and ethically responsible approach to patient care, making compassion and ethical sensitivity essential components of nursing education. This descriptive study was conducted to investigate the effect of compassion levels on nursing students' ethical sensitivity. The study included 371 nursing students from a foundation university in Istanbul., Data were obtained through a Sociodemographic Information Form, the Modified Moral Sensitivity Questionnaire for Student Nurses (MMSQSN), and the Compassion Scale. The study was carried out between January and July 2024. Analysis was conducted using SPSS 25. Among participants, 71.2% were female, 79.8% chose nursing voluntarily, and the average age was 21.25±2.39 years. Statistical analysis revealed significant relationships between compassion levels and gender, class, voluntary department choice, and socioeconomic status ($p<0.05$). Ethical sensitivity levels were also significantly linked to socioeconomic status ($p<0.05$). Additionally, a weak but positive correlation was found between compassion and ethical sensitivity ($r = .274$; $p<0.05$). These findings indicate that nursing students' socio-demographic characteristics and compassion levels influence their ethical sensitivity. The study underscores the need for nursing education to emphasize ethical values and compassion. Although the correlation between compassion and ethical sensitivity was weak, compassion appears to play a role in shaping ethical sensitivity. Future research and education programs should further explore and prioritize the development of these concepts to enhance the ethical competencies of nursing students.

Keywords: *Compassion, Ethics, Moral sensitivity, Nursing students*

INTRODUCTION

In today's healthcare environment, the need for nurses who are sensitive to ethical values, morally acceptable, and able to provide compassionate care is increasing (Kahriman and Yeşil Çiçek, 2017). Therefore, integrating professional values into nursing education is of great importance. The primary goal is to train nurses who are not only knowledgeable and skilled but also sensitive to ethical values and provide patient-centered care (Gündüzoğlu et al., 2019).

Compassion is generally defined as "the feeling of sorrow and pity for the distress of another being." In the context of nursing care, compassion serves as a fundamental basis and is associated with the desire to alleviate a patient's suffering. The concept of compassion in nursing emphasizes the importance of ethical responsibilities while emphasizing the protection of individuals' dignity and comfort (Gündüzoğlu et al., 2019).

Ethics refers to behaviors that are compatible with the expected professional principles and values of a particular community. Nurses are expected to comply with certain ethical standards while practicing their profession (Filizöz et al., 2015). Therefore, they need ethical principles and professional guidelines when providing care to patients, advocating professional attitudes, or addressing ethical dilemmas in their work environments (Filizöz et al., 2015; Pehlivan, 2002). Instilling ethical sensitivity in nurses is essential to help them understand the ethical dimension of their profession, recognize their responsibilities, and provide high-quality health services to individuals and society (Karadağlı, 2017; Özdemir, 2022). Despite the critical role of both compassion and ethical sensitivity in nursing, studies examining the direct effect of nursing students' compassion levels on their ethical sensitivity are lacking in the literature. This study aims to investigate the effect of compassion levels on nursing students' ethical sensitivity.

MATERIALS and METHODS

This descriptive study was conducted to investigate the effect of compassion levels on nursing students' ethical sensitivity. The study population consisted of 410 nursing students enrolled at a foundation university in Istanbul, and the entire population was included in the sample. The study was carried out between January and July 2024.

Data Collection Tools

In the study, data were collected using three different scales using face-to-face survey method.

The Sociodemographic Form was prepared by the researcher and includes items regarding age, gender, class, department preference, socioeconomic status, ethics courses, experience of ethical problems, and who these problems occurred with.

The Compassion Scale (CS) is a 24-item, 5-point Likert-type scale developed by Pommier (2010) and adapted to Turkish by Akdeniz and Deniz (2016). It has six sub-dimensions: compassion, indifference, sharing awareness, indifference, conscious awareness, and disconnection. The total score is calculated by reverse scoring the negative dimensions; a high score indicates a high level of compassion. The Cronbach's Alpha value of the Turkish adaptation is 0.85.

Modified Moral Sensitivity Questionnaire for Student Nurses (MMSQSN) is a 30-item, 7-point Likert-type scale developed by Comrie (2012). Its validity and reliability were examined in Turkey by Yılmaz Şahin et al. (2015). Scores range from 30 to 210 and the level of ethical sensitivity is divided into four categories. The Cronbach alpha of the scale, which consists of six sub-dimensions, is 0.73.

In this study, the Cronbach Alpha value of the Compassion Scale was calculated as 0.906 and the Modified Moral Sensitivity Questionnaire for Student Nurses (MMSQSN) was calculated as 0.861.

Statistical analysis

Data was analyzed with SPSS 25. The reliability of the scales was evaluated with Cronbach's Alpha values, and it was determined that the data were normally distributed. Independent Samples T-test and One-Way ANOVA were used to examine group differences, and the Pearson correlation coefficient was calculated for the relationship between variables. Frequency analysis was applied to determine variable diversity and common values. In all statistical analyses, the significance level was set at $p < 0.05$.

Ethics statement

Participation in the study is voluntary and based on confidentiality. Then, approval was obtained from the Ethics Committee of Istanbul Yeni Yuzyil University (09.01.2023; 2023/01-972). Additionally, permission was obtained from the authors for the scales used.

RESULTS

Of the participants, 71.2% were female; 27.6% were first-year students; 79.8% chose the department willingly; 59.5% had equal income to expenses; 58.5% had taken a nursing ethics course; 53.9% had previously encountered an ethical problem, and 48.4% of these ethical problems occurred between the patient and the nurse. In addition, the average age of the participants was 21.25±2.39 (Table 1).

Table 1. Socio-Demographic Characteristics of Participants (n=410)

Variables	Groups	n	%
Gender	Female	292	71,2
	Male	118	28,8
Class Level	1st year	113	27,6
	2nd year	99	24,1
	3rd year	99	24,1
	4th year	99	24,1
Did you choose your department voluntarily?	Yes	327	79,8
	No	83	20,2
Socioeconomic status	Income equals expenses	244	59,5
	Income less than expenses	75	18,3
	Income more than expenses	91	22,2
Have you taken an Ethics in Nursing course?	Yes	170	41,5
	No	240	58,5
Have you ever encountered an ethical issue?	Yes	189	46,1
	No	221	53,9
Between whom did the ethical issue occur? (n=190)	Patient-nurse	92	48,4
	Nurse-patient relative	51	26,8
	Nurse-nurse and other healthcare personnel	21	11,1
	Nurse-student	26	13,7

According to the analysis results, there was no significant difference between compassion levels and taking ethics courses, encountering ethical problems, and the parties to the ethical problem experienced ($p>0.05$). However, significant differences were found between compassion levels and gender, class, choosing the department voluntarily, and socioeconomic status variables ($p<0.05$). Women had higher compassion levels than men, those who chose the department voluntarily than those who chose it involuntarily, upper-class students had higher compassion levels than first-year students and those whose income-expense balance was equal had higher compassion levels than those whose income was less than their expenses (Table 2).

Table 2. T-test and One-Way ANOVA Results for the Compassion Scale

Variables	Group	X̄	S.D.	T/F	p
Gender	Female	97.44	13.51	6.954	**0.000**
	Male	86.86	14.96		
Class Level	1st year	91.46	13.45	5.146	**0.002**
	2nd year	91.94	15.71		
	3rd year	97.66	14.04		
	4th year	96.91	14.86		
Did you choose your department voluntarily?	Yes	95.20	14.37	2.205	**0.028**
	No	91.22	15.75		
Socioeconomic status	Income equals expenses	96.00	14.49	4.003	**0.019**
	Income less than expenses	90.94	14.89		
	Income more than expenses	92.94	14.71		
Have you taken an Ethics in Nursing course?	Yes	94.81	15.51	0.479	0.632
	No	94.10	14.17		
Have you ever encountered an ethical issue?	Yes	94.49	14.20	0.120	0.905
	No	94.31	15.19		
Between whom did the ethical issue occur? (n=190)	Patient-nurse	94.81	14.50	0.148	0.931
	Nurse-patient relative	94.88	12.98		
	Nurse-nurse and other healthcare personnel	92.61	16.82		
	Nurse-student	94.69	13.92		

t: Independent Sample t Test, F: One Way ANOVA

According to the analysis results, no significant difference was found between ethical sensitivity and variables such as gender, class, choosing the department voluntarily, taking ethics courses and experiencing ethical problems ($p>0.05$). However, a significant difference was found between socioeconomic status and ethical sensitivity ($p<0.05$); participants with equal income-expenditure balance showed higher ethical sensitivity compared to those with income less than expenditure (Table 3).

Table 3. T-test and One-Way ANOVA Results for Modified Moral Sensitivity Questionnaire for Student Nurses (MMSQSN) and Compassion Scale

Variables	**Group**	**X̄**	**S.D.**	**T/F**	**p**
Gender	Female	5.14	0.66	1.766	0.078
	Male	5.01	0.70		
Class Level	1st year	5.13	0.63	2.190	0.089
	2nd year	4.96	0.69		
	3rd year	5.11	0.70		
	4th year	5.20	0.67		
Did you choose your department voluntarily?	Yes	5.11	0.65	0.711	0.477
	No	5.05	0.76		
Socioeconomic status	Income equals expenses	5.16	0.65	4.492	**0.012**
	Income less than expenses	5.13	0.73		
	Income more than expenses	4.91	0.66		
Have you taken an Ethics in Nursing course?	Yes	5.09	0.79	-0.204	0.839
	No	5.11	0.58		
Have you ever encountered an ethical issue?	Yes	5.13	0.59	0.957	0.339
	No	5.07	0.74		
Between whom did the ethical issue occur? (n=190)	Patient-nurse	5.11	0.58	0.271	0.846
	Nurse-patient relative	5.16	0.64		
	Nurse-nurse and other healthcare personnel	5.23	0.52		
	Nurse-student	5.10	0.61		

t: Independent Sample t Test, F: One Way ANOVA

According to the analysis results, a statistically weak positive relationship was found between compassion and ethical sensitivity adapted for nursing students (r = .274; p<0.05), (Table 4).

Table 4. Correlation Results of Compassion Scale and Modified Moral Sensitivity Questionnaire for Student Nurses

Variables	**CS**	**MMSQSN**
Compassion Scale (CS)	1	,274**
Modified Moral Sensitivity Questionnaire for Student Nurses (MMSQSN)	,274**	1

*** Correlation is significant at the 0.01 level (2-tailed).*

DISCUSSION

This study examined the effect of nursing students' compassion levels on ethical sensitivity and compared the findings with studies in the literature. According to the results of the study, it was determined that nursing students generally have a high level of compassion. This finding is parallel to the study of Gündüzoğlu et al. (2019) indicating that a sense of compassion is developed in nursing students.

The study found that gender has an effect on compassion levels and that female students have higher compassion levels than male students. This result is also consistent with the studies of Çingöl et al. (2018). In addition, the study conducted by Jack and Tetley (2016) stated that compassion is experienced by nursing students in a multifaceted way and develops during the professional education process.

When evaluated in terms of ethical sensitivity, a statistically weak but significant relationship was found between compassion and ethical sensitivity. This shows that compassion can play an important role in ethical decision-making processes. Similarly, the studies of Burnell and Agan (2013) revealed that nursing students have developed a sense of compassionate care and that this supports ethical sensitivity.

According to the research findings, it is revealed that the development of compassion and ethical sensitivity during the nursing education process is interconnected and that ethical education programs should be organized to include compassion. Studies in the literature also show that clinical practices and ethical education have positive effects on students' compassion and ethical awareness levels (Kotluk and Tormey, 2024). Sinclair et al., 2021).

However, some studies also find that compassion levels decrease during the education process. In the study of Demirel and Ulti (2021), it was found that first-year students had higher compassion levels than senior students. This suggests that students may experience emotional exhaustion with clinical experiences and that their compassion levels may decrease over time.

In general, this study emphasizes that compassion is an important element in the development of ethical sensitivity in nursing students. The findings show that ethical and compassionate values should be given more prominence in nursing education and that it would be beneficial to address these issues more comprehensively in future research.

Limitations

The sample was limited to nursing students at a foundation university in Istanbul, so the results cannot be generalized to students from different universities or regions.

CONCLUSION

This study reveals that nursing students generally have high levels of compassion and that this plays an important role in professional identity development. It is observed that compassion levels increase with clinical experience. In addition, a weak but significant relationship was found between compassion and ethical sensitivity, and it was determined that compassion is effective in ethical decision-making processes. It is recommended that compassion be emphasized more in nursing education programs and that clinical experiences be increased. In addition, educational modules that strengthen the role of compassion in ethical decision-making processes should be added to develop ethical awareness.

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RELATIONSHIP between EMOTIONAL INTELLIGENCE and EDUCATIONAL STRESS LEVELS of NURSING STUDENTS

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ABSTRACT

Training nursing students to be skilled, emotionally intelligent professionals who can effectively manage stress is critical to the quality of healthcare services. Therefore, this study was designed as a descriptive and correlational study to examine the relationship between the emotional intelligence levels of nursing students and education-related stress. The study included 371 nursing students from a foundation university. Data were obtained through a Personal Information Form, the Nursing Education Stress Scale, and the Schutte Emotional Intelligence Scale. Research data were analyzed using descriptive statistics. Group differences were tested with t-tests and One-Way ANOVA for normally distributed variables. Pearson correlation analysis examined variable relationships, and Cronbach's Alpha assessed scale reliability. The significance level was set at $p < 0.05$. The findings revealed that 72% of the nursing students were female, 76.5% had voluntarily chosen the nursing department, and 69% assessed their academic performance as moderate. The students' emotional intelligence average score was found to be 123.73±19.87), and their educational stress average score was found to be 59.81±18.35. These results indicate that the students' emotional intelligence and educational stress levels were moderate. Additionally, a weak negative relationship was found between emotional intelligence and educational stress. This finding suggests that, albeit weakly, as emotional intelligence levels increase, educational stress decreases. In this context, interventions focused on developing emotional intelligence during the education process can contribute to better stress management among students.

Keywords: *Emotional intelligence, Nursing, Nursing education, Stress*

INTRODUCTION

Nursing is a professional discipline that aims to protect and improve the health of individuals and to provide care in cases of illness. For nurses to perform their professions effectively, they need to have not only theoretical knowledge and technical skills but also a high level of emotional intelligence (Altun & Yarar, 2019). Emotional intelligence is the ability of an individual to understand, express, and manage their own emotions, and the capacity to engage in appropriate social interactions by comprehending the feelings of others (Antonopoulou, 2024; Karaca et al., 2014a; Turjuman and Alilyyani, 2023). Especially in people-oriented professions such as nursing, emotional intelligence plays a critical role in stress management, developing empathy, and establishing effective communication and decision-making processes (Goleman, 2006; Lu and Shorey, 2021).

Nursing education requires students to participate in an intensive program that combines academic and clinical training. The education process involves many challenging stages, including gaining field experience through patient care and clinical practice, alongside acquiring theoretical knowledge (Karaca et al., 2014a). During this process, students encounter various stress factors, such as anxiety about academic success, time management difficulties, communication challenges with patients and instructors, and ethical dilemmas (Moç and Gülbetekin, 2023). The literature indicates that nursing students experience high levels of stress, which can negatively impact their academic success, professional development, and psychological well-being (Cerit and Öz, 2019; Lavoie-Tremblay et al., 2022; Pulido-Criollo et al., 2018).

Long-term stress can cause burnout syndrome, anxiety disorders, and loss of motivation in the individual (Çankaya and Çiftçi, 2019; Khammissa et al., 2022). For nursing students to adopt their professional roles healthily and to become effective health professionals in the future, it is of great importance to manage the stress they encounter during the education process (Dugué et al., 2021). At this point, it is suggested that emotional intelligence is a protective factor in coping with stress (Sevindik et al., 2012).

Studies show that individuals with high emotional intelligence levels cope with stress more effectively and respond more flexibly and solution-oriented in challenging situations (Ceylantekin and Öcalan, 2020, Çalışkan et al., 2024). In this context, understanding the effects of emotional intelligence skills on nursing students can contribute to developing educational programs. This study examines the relationship between nursing students' emotional intelligence levels and the stress they experience during their education. The findings of this study are expected to guide the development of stress management programs and emotional intelligence-focused educational content for nursing education.

MATERIALS and METHODS

This descriptive and relational study was conducted to determine the emotional intelligence and educational stress levels of nursing students. The study population consisted of 371 nursing students enrolled at a foundation university, and the entire population was included in the sample. The study was carried out between February and October 2024.

Data collection tools

In the study, data were collected using three different scales using face-to-face survey method.

Personal Information Form: This form was designed to collect demographic information from the students participating in the study. It includes variables such as age, gender, grade level, family type, socioeconomic status, childhood place of residence, family's child-rearing style, academic achievement, and whether they chose the nursing department voluntarily. These variables were planned to be used as independent variables in statistical analyses to examine their effects on students' emotional intelligence and educational stress levels.

Schutte Emotional Intelligence Scale (SEIS): The scale, developed to measure students' emotional intelligence levels, was adapted to Turkish by Tatar et al. (2011). It assesses individuals' ability to understand and manage their emotions, be sensitive to the emotions of others, and use their emotions effectively in social relationships. The scale consists of 33 items with five-point likert-type response options, and higher scores indicate a higher level of emotional intelligence.

Nursing Education Stress Scale (NESS): It was developed by Karaca et al. (2014b) to assess the level of stress experienced by nursing students during their education. It evaluates stress factors arising from both clinical practice and academic responsibilities. The scale consists of two sub-dimensions: academic stress and clinical stress. The academic stress sub-dimension includes factors such as the intensity of theoretical courses, exam anxiety, and homework load. The clinical stress sub-dimension covers stress factors related to patient care during clinical training, fear of making mistakes during practice, and communication with patients and instructors.

Statistical analysis*:* In the evaluation of the research data, descriptive statistical methods such as standard deviation, ratio, and percentage were used for descriptive analyses. To assess differences between groups, the t-test and One-Way Analysis of Variance (ANOVA) were applied to normally distributed variables in binary groups. Additionally, Pearson correlation analysis was conducted to determine the relationships between variables. Cronbach's Alpha values were examined to assess the reliability of the scales used in the study. In all statistical analyses, the significance level was set at $p < 0.05$.

Ethics statement: To conduct the study, permission for student participation was first obtained from the Nursing Department of the relevant university. Then, approval was obtained from the Ethics Committee of Istanbul Yeni Yuzyil University (04.12.2023; 2023/12-1125). Additionally, permission was obtained from the authors for the scales used.

RESULTS

In this study, the mean scores of the students on the Schutte Emotional Intelligence Scale (SEIS) and the Nursing Education Stress Scale (NESS) were calculated. When the sub-dimensions of the scales were examined, the mean Clinical stress score was found to be 30.36±10.14, while the mean Academic stress score was 29.45±9.03.

72% of the students are female, 33.2% are first-year students, 80.3% have a nuclear family structure, and 66.8% spend most of their time in the city center. Additionally, 90% of the students were found to have a medium income level. Furthermore, 45.8% of the students were identified as having a foster family type, 76.5% willingly chose nursing, and 69% perceived their academic success as medium.

The comparison of the mean scores of nursing students on the SEIS and NESS is presented in Table 1. Accordingly, the total score of the NESS and the mean scores of the Academic stress and Clinical stress sub-dimensions were found to be significantly higher among female students than male students ($p<0.001$). The total score of the NESS and the mean score of the Clinical stress sub-dimension were significantly higher among students from nuclear families compared to those from extended families ($p<0.05$). The mean score of the SEIS was significantly higher among students whose families' child-rearing style was reassuring compared to those with an indifferent parental attitude ($p=0.004$). Additionally, the mean score of the Academic stress sub-dimension was significantly lower among students with a reassuring parental attitude ($p=0.021$). Furthermore, the SEIS mean score was significantly higher among students who voluntarily chose the nursing department ($p<0.001$). It was also determined that students with good or moderate academic success had significantly higher Schutte Emotional Intelligence Scale mean scores ($p<0.001$), (Table 1).

Table 1. Descriptive Characteristics of Nursing Students and Mean Scores on the Schutte Emotional Intelligence Scale and Nursing Education Stress Scale

Variable	SEIS Mean±SD	NESS Scale Mean±SD	Clinical Stress Mean±SD	Academic Stress Mean±SD
Age				
18-19 years	121,96±20,9	56,75±19,69	28,73±11,06	28,02±9,63
20-21 years	124,97±18,95	62,16±18,06	31,72±9,87	30,44±8,89
22 and above	123,39±20,39	58,87±16,87	29,67±9,3	29,2±8,45

F	0,759	3,016	3,145	2,396
p	0,469	**0,049**	**0,044**	0,093
Gender				
Female	124,86±17,42	63,06±17,54	31,87±9,76	31,19±8,52
Male	120,81±24,95	51,45±17,8	26,48±10,1	24,97±8,8
t	1,770	5,704	4,732	6,257
p	0,077	**0,000**	**0,000**	**0,000**
Class Level				
1st Year	122,51±18,82	58,6±16,37	29,98±9,12	28,62±8,47
2nd Year	121,06±21,33	62,01±20,03	31,26±11,27	30,75±9,57
3rd Year	128,26±18,49	57,97±19,78	29,48±10,77	28,49±9,56
4th Year	123,86±20,77	61,43±16,87	30,98±9,19	30,45±8,22
F	2,339	1,112	0,617	1,622
p	0,073	0,344	0,604	0,184
Family Type				
Nuclear Family	119,89±24	55,86±16,5	28,07±8,93	27,79±8,51
Extended Family	124,66±18,64	60,78±18,67	30,92±10,35	29,85±9,12
t	-1,846	-2,059	-2,166	-1,749
p	0,066	0,040	0,031	0,081
Parental Attitude				
Indifferent	111,29±22,81	60,59±14,01	29,12±7,52	31,47±7,12
Protective	124,04±19,89	61,97±17,97	31,16±10,24	30,81±8,47
Neglectful	121,3±21,03	59,52±19,41	29,88±10,88	29,64±8,94
Democratic	121,77±20,06	57,73±16,26	29,57±8,6	28,15±8,63
Reassuring	130,65±15,63	56,78±22,25	29,9±12,18	26,88±10,94
F	3,964	1,305	0,516	2,912
p	**0,004**	0,267	0,724	0,021
Reason for Choosing Nursing				
Willingly	126,2±16,72	58,98±18,95	30±10,51	28,98±9,24
Unwillingly	115,63±26,3	62,52±16,04	31,53±8,79	30,99±8,18
t	4,452	-1,577	-1,228	-1,824
p	**0,000**	0,116	0,220	0,069
Academic Success				
Good	125,51±20,92	58,32±19,21	30,17±10,4	28,16±9,57
Moderate	124,15±18,75	60,45±18,27	30,53±10,18	29,92±8,91
Poor	101,31±21	58,92±12,19	28,62±7,33	30,31±6,2
F	9,132	0,502	0,245	1,451
p	**0,000**	0,606	0,783	0,236

t: Independent Sample t Test, F: One Way ANOVA

A weak yet significant negative correlation was found between the Schutte Emotional Intelligence Scale and the Nursing Education Stress Scale, including its sub-dimensions ($p<0.05$), (Table 2).

Table 2. Correlation Between Age, Schutte Emotional Intelligence Scale, and Nursing Education Stress Scale Among Nursing Students

Variable		Schutte Emotional Intelligence Scale	Nursing Education Stress Scale	Clinical Stress	Academic Stress
Schutte Emotional Intelligence Scale	**r**				
	p				
Nursing Education Stress Scale	**r**	-0.149			
	p	0.004			
Clinical Stress	**r**	-0.125	0.962		
	p	0.016	0.000		
Academic Stress	**r**	-0.162	0.952	0.831	
	p	0.002	0.000	0.000	
Note: r values (correlation coefficients) show the direction and strength of the relationship between variables. p values determine whether the relationship is statistically significant ($p < 0.05$ is considered significant).					

DISCUSSION

In this study, the Schutte Emotional Intelligence Scale and Nursing Education Stress Scale scores of nursing students were examined according to various variables. The findings are largely consistent with previous studies in literature.

The study determined that the total score average of the Nursing Education Stress Scale and the practice stress sub-dimension scores of students in the 20-21 age group were significantly higher than those of other age groups ($p<0.05$). Similarly, the study conducted by Ergin et al. (2018) found that the stress scores of students in the 19-21 age group were higher than those of other groups. This situation may be associated with the increase in students' academic load and clinical practice processes during this age range.

It was observed that the total average score of the NESS and the practice stress and academic stress sub-dimension scores of female students were significantly higher than those of male students ($p<0.001$). Similar results have been reported in the literature (Akgül et al., 2022; Büyükbayram and Ayık, 2020; Can Özdemir et al., 2022; Ergin et al., 2018). The high stress levels of female students can be explained by their academic responsibilities and the difficulties they experience in clinical practice. In this regard, it is important for academic staff and health professionals working in clinical settings to organize activities that support female students' ability to cope with stress.

The study found that the mean score of the NESS and the practice stress sub-dimension scores of students from nuclear families were significantly higher than those of students from extended families ($p<0.05$). Although there is no direct study on this subject in the literature, it is thought that an

extended family environment can provide more social support to individuals and make it easier to cope with stress.

When examining the effect of families' child-rearing styles on emotional intelligence, it was determined that the SEIS scores of students with a reassuring parental attitude were significantly higher than those of students with an indifferent parental attitude ($p=0.004$). Although the effect of parental attitude on emotional intelligence was not found to be significant in the study conducted by Ceylantekin and Öcalan (2020), the findings of the current study indicate that a reassuring family environment contributes positively to the emotional development of individuals. Additionally, it was observed that students with a reassuring parental attitude had lower academic stress scores ($p=0.021$). This finding suggests that a secure family environment may enhance an individual's ability to cope with stress.

The study determined that the emotional intelligence scores of students who willingly chose the Nursing department were significantly higher ($p<0.001$). The study by Cantekin et al., (2021) and Ceylantekin and Öcalan (2020) also supports this result. The high emotional intelligence levels of individuals who consciously and willingly choose their profession may be related to their professional satisfaction and motivation. This finding is significant for training effective and empathetic nurses in the future.

When examining the relationship between academic success and emotional intelligence, it was determined that the emotional intelligence scores of students with good or moderate academic success were significantly higher than those with low academic success ($p<0.001$). The research conducted by Özkol Kılınç et al. (2019) also supports this result. Having a high level of emotional intelligence is considered one of the factors that can positively affect an individual's academic success.

Finally, a weak but significant negative correlation was found between the Schutte Emotional Intelligence Scale and the Nursing Education Stress Scale and its sub-dimensions ($p<0.05$). The number of studies in the literature directly addressing the relationship between emotional intelligence and nursing education stress is limited. However, it can be said that the high educational stress levels of individuals with low emotional intelligence levels are an expected result. Therefore, organizing activities to improve the emotional intelligence of nursing students will facilitate their ability to cope with stress during their education.

CONCLUSION

This study emphasizes the significant link between emotional intelligence and nursing education stress among nursing students. Key findings indicate that younger and female students experience higher stress levels, highlighting the need for targeted support for these groups. Additionally, a reassuring parental attitude positively affects emotional intelligence, suggesting that familial support

is crucial for student development. The research also reveals that higher emotional intelligence correlates with better academic performance, underscoring the importance of integrating emotional competency training into nursing curricula. Overall, addressing stress factors and enhancing emotional intelligence is essential for the well-being and professional growth of nursing students. Future research should focus on developing strategies to improve these areas within nursing education.

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PROBLEMS in the TREATMENT of ATHEROSCLEROSIS and WAYS to OVERCOME THEM

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ABSTRACT

Atherosclerosis is one of the most common diseases in many countries of the world. Every year, more than 2.5 million people in the world die from cardiovascular diseases, including atherosclerosis. Solving the problems of disease treatment is an urgent issue of modern pharmacy and medicine. The purpose of the work is to study the state of atherosclerosis treatment in Ukraine, to analyze existing problems and ways to overcome them. The work used the bibliosemantic method of analysis of scientific sources and electronic resources. The results of research conducted using data from official sources indicate that several groups of hypolipidemic agents are used for the treatment of atherosclerosis in Ukraine, namely, statins, fibrates, cholesterol absorption inhibitors, subtilisin proprotein convertase inhibitors, bile acid sequestrants, etc. The process of treating the disease is long. As a consequence, a side effect of synthetic medicines. Thus, hepatotoxicity, muscle weakness appears during statin therapy, while fibrates – gastrointestinal disorders, when using PCSK9 inhibitors – allergic reactions, etc. It is possible to reduce the level of side effects of synthetic drugs with the help of complex treatment using drugs of natural origin. There are a number of medicinal plants that have an antisclerotic effect, reduce the level of cholesterol in the blood, strengthen blood vessels, improve the work of the cardiovascular and nervous systems, cerebral circulation and the general condition of the patient. To reduce the absorption of cholesterol, for example, the roots of aralia, dandelion officinalis, mountain arnica flower, chamomile, chokeberry, black currant, hawthorn and other plants are used. Therefore, taking into account the above, it is possible to draw a conclusion about the rationality of the complex treatment of atherosclerosis with the use, along with synthetic drugs, of drugs of natural origin, in particular those obtained on the basis of plant raw materials.

Keywords: Atherosclerosis, Treatment, Synthetic drugs, Medicinal plants

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WEARABLE TECHNOLOGIES and LIFESTYLE MEDICINE

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ABSTRACT

Wearable technologies are revolutionizing lifestyle medicine by enabling real-time data collection, personalized health insights, and proactive wellness management. These devices, ranging from fitness trackers and smartwatches to biosensors and smart clothing, continuously monitor key health metrics such as heart rate, sleep patterns, physical activity, and even stress levels. By integrating wearable technologies with lifestyle medicine—a discipline focused on the prevention, management, and reversal of chronic diseases through lifestyle interventions—patients and healthcare providers can make data-driven decisions to optimize well-being. This presentation explores how wearable technologies are reshaping the healthcare landscape, promoting preventative care and empowering individuals to take control of their health. It will cover the latest advancements in wearable devices, their applications in lifestyle interventions (including nutrition, physical activity, stress management, and sleep hygiene), and the role of artificial intelligence in interpreting data for personalized care. Moreover, the presentation will address challenges such as data privacy, user adherence, and the need for standardized validation protocols to ensure the accuracy and reliability of health data from wearables. In conclusion, the integration of wearable technologies in lifestyle medicine represents a transformative shift towards personalized, data-driven healthcare. By combining these innovations with evidence-based lifestyle interventions, we can better prevent and manage chronic conditions, leading to improved health outcomes and quality of life.

Keywords: Longevity, Preventative healthcare, Digital medicine, Personalised medicine, Gamification

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THE CURRENT STATE, PROBLEMS and DIFFICULTIES of PISCICULTURES ECONOMIC IMPROVEMENT in RURAL LOCATIONS

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ABSTRACT

India's rural aquaculture and fish farming industry is the main driver of economic growth. India currently holds the second place in the world for aquaculture and fisheries cultivation. Aside from being a cuisine that most Indians readily consume, aquaculture is also very affordable. Farmers use the most important method, known as fisheries culture, to produce fish in their ponds and tanks. They also favor vegetable gardening because it requires less inputs and yields higher earnings. However, rice bran, crushed nut oil cake, mustard oil cake, chicken dung, and cow dung are among the staple foods that fish require to grow. People in rural areas rely on composite and vegetable fish farming in pond culture systems that include exotic big carps (such as Labeo rohita, Cirrhinus mrigala, and Catla catla) and tilapia in order to expand their economies. Additionally, this type of composite system is a useful variation on polyculture. But there are several difficulties and problems that arise during the culturing process. On the other hand, pond ecosystems are the best for maximizing the use of internal resources, which can lead to higher productivity. Thus, using the pisiculture approach, we can raise fish species that are suitable with our goals. Therefore, farmers who live in rural areas have the potential to boost the economy by helping young people who are unemployed find work, which also helps the economy grow.

Keywords: Composite culture, Pisciculture, Rural areas, Carp, Fisheries.

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3D PRINTING in PHARMACY

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ABSTRACT

3D printing can make a breakthrough in the pharmaceutical industry. The purpose of the study is to conduct a literature search and summarise information from scientific publications on the advantages and disadvantages, features and efficiency of the 3D printing production process, and the prospects for its potential use. Theoretical methods were used for the study. 3D printing is an example of an additive manufacturing process, where the creation of a medicinal product occurs by adding substances according to pre-formed and specified data of a three-dimensional digital model. The 3D printing method combines the digitisation of the process (creating a design and geometric projection in a special software system, development of a digital pharmaceutical product that can be read, cutting into layers to be printed) and its automation - intelligent manufacturing (processing of substances into a powdered state, creation of filamentary structures or binding solutions that are applied in layers), so the parameters of applied in layers), so production parameters can be adjusted at any stage at any stage, and can be transferred to other production lines without effort, etc. In 2015, the FDA approved the first medicinal product produced by 3D printing – oral dispersible tablets SPRITAM®. It is 3D printing of oral solid dosage forms that is currently the most studied method of pharmaceutical technology today. From the point of view of terms of use in practical pharmaceutical technology, the main approaches to 3D printing are fused deposition modelling, semi-solid extrusion, extrusion deposition from the melt, stereolithographic printing, selective laser sintering, 3D printing on the basis of powdered substances. Therefore, a potential prospect of using 3D printing is the possibility of obtaining medicines with a highly individualised dosage of the active ingredient, creating a specific release profile.

Keywords: Literature review, 3D printing, Three-dimensional technology.

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Interventional Cardiology in Myocardial Infarction

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ABSTRACT

Interventional cardiology in myocardial infarction (MI) focuses on using minimally invasive procedures to restore blood flow to the heart. The primary approach is percutaneous coronary intervention (PCI), often involving angioplasty and stent placement to open blocked coronary arteries. This treatment is crucial in acute myocardial infarction (AMI), particularly in ST-elevation MI (STEMI), where rapid intervention improves survival and reduces heart muscle damage.Immediate Pre-Procedure Phase (Preparation) and Percutaneous Coronary Intervention (PCI) are two major treatment approaches seen to have given better patient outcome, among which stent placement, balloon angioplasty, Unfractionated Heparin or bivalirudin are best goal planners in myocardial infarction. Non-invasive approaches, however, do have risks accompanying it including vascular complications, thrombotic and stent related complications, cardiac complications like coronary heart perfusion. Contrast-induced nephropathy poses a threat to patients with preexisting kidney conditions, and some may experience allergic reactions to the contrast dye. Third-generation drug-eluting stents that offer improved safety and efficacy, reducing restenosis and stent thrombosis. Bioresorbable vascular scaffolds are being explored. Additionally, the use of intravascular imaging tools, such as optical coherence tomography (OCT) and intravascular ultrasound (IVUS), allows more precise stent placement. Additionally, advancements in drug-eluting stents continue to show promise. Newer-generation stents with thinner struts and improved biocompatibility are reducing adverse events. Polymer-free drug-eluting stents are also being developed to minimize the risk of inflammation associated with polymer coatings. In conclusion, the field of interventional cardiology continues to evolve with advancements that enhance the management of myocardial infarction (MI). Breakthroughs like advanced intravascular imaging (OCT and IVUS) improve diagnostic accuracy and procedural precision during stent placement. Next-generation drug-eluting stents and emerging polymer-free stents have reduced the incidence of restenosis and thrombosis, contributing to better patient outcomes.

Keywords: Interventional cardiology, Myocardial infarction, Latest approach, Complications, Stent placement.

STUDY of the MINERAL COMPOSITION of LAVENDER HERB

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ABSTRACT

The flowers of narrow-leaved lavender (*Lavandula angustifolia* L.) of the *Lamiaceae* family are the official medicinal plant raw materials (RMs). It is known that during harvesting, herb is mowed, which is a source of biologically active substances. So, lavender herbs are a promising object for phytochemical research. There is no information on the mineral composition of lavender cultivated in the conditions of the Carpathian region. The aim of the study is to study the mineral composition and ash of the herb of *L. angustifolia* cultivated in Carpathian region, Ukraine. Lavender herb was harvested at the pharmacopoeia site of the IFNMU during the flowering phase of the plant in July 2024. The air-shade-dried RMs were stored in paper bags in a dry place protected from light. The total ash content was determined by the gravimetric method. The elemental composition was studied by atomic emission spectroscopy. It was found that the total ash content in the test sample is 9.70%. In the analysed RMs of L. angustifolia, 19 elements were identified and quantified, namely 5 macroelements (K, Ca, Na, Mg, P) and 9 microelements (Si, Fe, Mn, Al, Mo, Cu, Sr, Ni, Zn). The elements were arranged in descending order of concentration: K > Si > Ca > Mg > Na > P > Al > Fe > Zn > Mn = Sr > Cu > Ni > Mo. Concentrations of heavy metals Co and Pb were less than 0.03 mg/100g. Concentrations of Cd, As, and Hg in the studied RMs were less than 0.01 mg/100g. The data obtained on the elemental composition and full hygienic value of RMs are used in the development and safety control of medicinal products from lavender herb.

Keywords: Lavender, Atomic absorption spectroscopy, Macroelements, Microelements, Mineral composition.

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PROSPECTS for the DEVELOPMENT of NEW DRUGS with MEDICINAL PLANT MATERIALS

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ABSTRACT

The pharmaceutical development of new drugs requires a solid rationale. The analysis of literature sources allows us to investigate the current state of drug development on a given topic and to make sure that the development is feasible. The purpose of the study is to determine the feasibility of developing drugs based on medicinal plant material. To achieve this goal, the following theoretical research methods were used: review, analysis, synthesis, and systematisation of literature data. Scientific databases were used: Scopus, PubMed, Web of Science. An analysis of the literature has shown that medicinal plant material is a popular material used as an active pharmaceutical ingredient or as an excipient. Plants as active pharmaceutical ingredients are used in preparations for internal use for anti-inflammatory, sedative, expectorant, analgesic, laxative, and many other purposes. In preparations for external use, they are used to providing anti-inflammatory effects, reduce allergic reactions, etc. Herbal active ingredients are often used in combination with synthetic active pharmaceutical ingredients. However, it is worth noting that researchers rely on the experience of using plants in existing approaches. In other words, most of the publications are about the development of tinctures, ointments, capsules, granules, etc. Therefore, we can conclude that, despite the popularity of medicinal plant materials in modern research, it is important to improve existing and search for new approaches to the development of herbal medicines.

Keywords: Literature review, Pharmaceutical development, Medicinal plant material.

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RESEARCH of GEL-FORMING AGENTS in ASPECT of COMPLIANCE with THE REQUIREMENTS for ANTI-BURN ACTION DRUGS

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ABSTRACT

The treatment of burn injuries remains one of the most important tasks of modern medicine, as they can cause serious complications and even pose a threat to the lives of patients. Modern research in the field of pharmaceutical technology is aimed at creating domestic, affordable and effective medicines that promote rapid wound healing and reduce the risk of scarring. The aim of this study was to substantiate the choice of a gel-forming agent for the creation of a soft dosage form for the treatment of burn injuries of the skin. Bibliosemantic, marketing, pharmacotechnological research methods were used in the study**.** Soft dosage forms intended for the treatment of wounds and burns must meet a number of requirements. The main characteristics of such products can be grouped according to several criteria: anti-inflammatory and antimicrobial effects, optimal moisture level and oxygen access, stimulation of tissue repair, safety and absence of toxic effects. A key aspect of developing an antiburn gel is the selection of a suitable carrier base that not only ensures the effective release of the active pharmaceutical substance, but also meets the above requirements. As part of the study, a number of gel-forming agents (hydroxyethyl cellulose (HEC), methylcellulose, aerosil (silicon dioxide, SiO_2), carbopol and hyaluronic acid) were analysed in terms of compliance with pharmacological and technological requirements. The characteristics of dosage forms intended for the treatment of burn injuries have been analysed, and the basic requirements for their composition and properties have been determined. Gel-forming agents that meet these criteria and can potentially be used to create a gel for the treatment of burn wounds have been investigated.

Keywords: Gels, Burns, Gel-forming agents.

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METHODS for STANDARDIZATION EXTEMPORANEOUS GELS

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ABSTRACT

One of the key areas of pharmaceutical development is the expansion of the range of effective and safe extemporaneous dosage forms. Medicines should ensure rapid and complete release of active substances from the dosage form and their penetration into the target organ, including when applied topically. The purpose of the study was to determine methods for standardizing pharmacy gels. Structural, comparative, generalizing analysis of literary sources. The main quality indicators of gels described in leading pharmacopoeias and state standards are appearance, uniformity, identification, pH and content of active substances. One of the important quality indicators of an extemporaneous gel is the ability to ensure the bioavailability of active substances, therefore, when developing a drug, the ability of the active substance to be released from the gel and its resorption through the skin should be assessed. This ability of the gel can be judged by the results of studying its diffusion in in vitro model experiments. There are two types of research methods: diffusion in direct contact of the gel with the environment and diffusion through a semipermeable membrane. At the stage of developing the composition and technology of an extemporaneous gel, special attention is paid to the study of structural and mechanical characteristics, such as viscosity and shear stress. Gels are referred to as thixotropic systems, that is, they can change their structure under the influence of mechanical action and restore the structure after its cessation. This property allows the gel structure to remain unchanged during the production process during high-speed mixing and dosing. Extemporaneous gels should have constant characteristics during storage, as they determine consumer and therapeutic properties. Control is carried out on such indicators as appearance, uniformity, pH, quantification, identification, microbiological purity.

Keywords: Extemporaneous gel, Standardization, Quality indicators.

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THE ROLE of BINDER EXCIPIENTS in the CREATION of GRANULES BASED on PHYTOEXTRACTS

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ABSTRACT

Granulated dosage forms based on phytoextracts are increasingly important in the pharmaceutical industry. They ensure the stability of active ingredients, improve the technological properties of mixtures, and contribute to uniform dosage. Wetting is one of the important stages of the wet granulation process since the correct choice of binder excipient affects the physicochemical properties of granules, their solidity, dissolution, and stability. To characterize the proposed binder excipient on granule formation and pharmacotechnological properties of granules obtained based on phytoextracts, by the requirements of the State Pharmacopoeia of Ukraine (SPhU). Organoleptic, microscopic, pharmacotechnological methods are used in the study. SPhU regulates the main indicators of granule quality, in particular granulometric composition, flowability, solidity, and disintegration (SPhU, General Monographs 2.9.1, 2.9.36). The choice of binder excipient affects granule formation and the drug's final characteristics. When developing granules based on dry extracts of clover flowers, cranberry fruits, amaranth seeds and parsley leaves, mixtures with sugar syrup, 25% polyvinylpyrrolidone K30 solution and 5% starch solution were used as research objects. When choosing binder excipients, the best indicators were found in the sample with 5% starch solution. The granulate based on phytoextracts was established as an effective and safe binder excipient based on experimental data. It ensures uniform moisture distribution between powder particles, prevents the formation of lumps and agglomeration, which contributes to obtaining a homogeneous granulate. Due to its adhesive properties, starch forms strong interparticle bonds, increasing the mechanical stability of the granules that ensures optimal pharmacotechnological characteristics of the granulate and its good flowability, which meets the requirements of SPhU. It was found that a 5% starch solution improves the quality of granules, ensuring their technological suitability, storage stability, and compliance with regulated pharmacopoeial parameters. Further studies are aimed at optimizing the technological parameters of granules using other excipients.

Keywords: Granules, Phytoextracts, Binder excipients

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ANALYSIS of the MARKET for TOPICAL ANTI-INFLAMMATORY DRUGS

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ABSTRACT

The classic representatives of drugs with anti-inflammatory activity are the group of non-steroidal anti-inflammatory drugs (NSAIDs). In the presence of allergic reactions associated with taking NSAIDs and/or ineffectiveness of the latter, steroid drugs that also have anti-inflammatory activity - corticosteroids - are used. Therefore, the purpose of the study is to analyse the Ukrainian market for NSAIDs and corticosteroid topical medicines. We used the marketing research method to analyse the range of these drugs. To study the assortment of the NSAIDs group, we analysed the representatives of ATC classification M02AA and M01A which have 211 representatives in total. Drugs in these groups are represented by gel, ointment, cream, transdermal patch and spray. Most of the drugs in the NSAIDs group are made in Ukraine. Indian, German, and Estonian products have an average market share, while Switzerland, Hungary, Romania, Bulgaria, and Croatia have the smallest number of representatives. Among the active pharmaceutical ingredients, diclofenac sodium and diclofenac combinations are the most common. In order to study the range of corticosteroids for topical use, representatives of ATC classification D07A, which includes 125 names, were analysed. The drugs in the corticosteroids group are represented by gel, emulsion, cream, ointment, lotion, solution, and spray for external use. Most often, the country of origin is Ukraine, less often - Croatia, the USA, Germany and other countries. The active pharmaceutical ingredients are most often hydrocortisone, prednisone, betamethasone, etc.

Keywords: Anti-inflammatory activity, Topical preparations, Market analysis.

(Bildiri Kodu)----------

STUDY of RHEOLOGICAL PROPERTIES of CREAMS BASED on SHEA BUTTER

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ABSTRACT

When developing the composition of soft drugs, much attention is focused on the study of their rheological properties. This is due to the fact that these parameters are used to justify the composition of excipients to ensure consumer performance, select the parameters of the manufacturing process, study storage stability, etc. The aim of our study was to investigate the rheological properties of shea butter-based creams (20%) using different emulsifiers (Quartamine, Lecigel, Easynov, Optinov green). The objects of the study were model samples of creams. The rheological properties were studied on a rotational viscometer with coaxial cylinders Reotest-2 at a temperature of 20±0.5℃ and 37±0.5℃. According to the results of the studies, it was found that the cream containing Lecigel has a stable homogeneous flow over the entire range of shear rates, the system is easily amenable to the driving force, and is characterised by good consumer properties at the optimum spreading. Samples containing other emulsifiers have a more liquid consistency and slightly worse rheological properties. In addition, the sample with Optinov Green emulsifier does not have thixotropic properties. The results of the experiment showed that it is advisable to use a sample containing Lecigel emulsifier for further research on the development of the cream composition.

Keywords: Shea butter, Cream, Rheological properties.

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THE EFFECT of FATIGUE and ANXIETY LEVEL on EXERCISE, NUTRITION and QUALITY of LIFE in HEALTH CARE PERSONNEL WORKING in HOSPITAL

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ABSTRACT

This study aimed to evaluate the impact of fatigue and anxiety levels on exercise, nutrition, and quality of life among hospital health personnel and to improve measurement methods for these effects. The study included 99 healthcare workers from Sakarya University of Applied Sciences, Faculty of Health Sciences, and Akyazı State Hospital. The Ferrans and Powers Quality of Life Index, Chronic Fatigue Scale, Work-Related Tension Scale (WRTS), Fargestrom nicotine addiction scale (FBNS) and Nutrition-Exercise Behavior Scale (NEBS) were utilized to assess quality of life, fatigue, work-related stress, and nutrition-exercise behaviors. The participants had a mean age of 35.73 ± 9.61 years and an average BMI in the overweight range (25.11 ± 4.40). Healthy eating and exercise behavior scores (41.37 ± 6.34) were higher than unhealthy eating scores (37.09 ± 5.82), while psychological eating scores were 34.21 ± 4.74. Meal order scores were low (19.03 ± 5.10). A significant positive correlation was observed between FNBS and psychological eating ($r = 0.749$, $p = 0.032$). Work-Related Tension Scale scores showed significant positive relationships with psychological eating ($r = 0.824$, $p = 0.023$) and healthy eating and exercise behaviors ($r = 0.918$, $p = 0.010$). Work-related stress and psychological eating behaviors, alongside nicotine addiction, significantly impact the quality of life of healthcare workers. Holistic interventions targeting physical and mental well-being, stress reduction, and lifestyle improvements are essential. Supportive institutional environments and balanced workforce planning are critical for enhancing employee satisfaction, productivity, and patient care outcomes.

Keywords: Depression, Nutrition, Exercise, Quality of life

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HASTANEDE ÇALIŞAN SAĞLIK PERSONELİNDE YORGUNLUK VE DEPRESYON DÜZEYİNİN EGZERSİZ, BESLENME ve YAŞAM KALİTESİ ÜZERİNE ETKİSİ

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ÖZET

Bu çalışmanın amacı hastane sağlık personelinde yorgunluk ve anksiyete düzeylerinin egzersiz, beslenme ve yaşam kalitesi üzerine etkisini değerlendirmek ve bu etkilere yönelik ölçüm yöntemlerini geliştirmektir. Çalışmaya Sakarya Uygulamalı Bilimler Üniversitesi Sağlık Bilimleri Fakültesi ve Akyazı Devlet Hastanesi'nden 99 sağlık çalışanı dahil edildi. Yaşam kalitesi, yorgunluk, işe bağlı stres ve beslenme-egzersiz davranışlarını değerlendirmek için Ferrans ve Powers Yaşam Kalitesi İndeksi, Kronik Yorgunluk Ölçeği, İşe Bağlı Gerginlik Ölçeği (İBGÖ), Fargestrom Nikotin Bağımlılık Ölçeği (FNBÖ) ve Beslenme-Egzersiz Davranışları Ölçeği (BEDÖ) kullanıldı. Katılımcıların yaş ortalaması 35.73 ± 9,61 yıl ve BKİ ortalaması fazla kilolu aralığındadır (25.11 ± 4.40). Sağlıklı beslenme ve egzersiz davranışı puanları (41,37 ± 6,34), sağlıksız beslenme puanlarından (37,09 ± 5,82) yüksek iken, psikolojik beslenme puanları (34,21 ± 4,74) düşük bulunmuştur. Öğün düzeni puanları (19,03 ± 5,10) düşük bulunmuştur. FBNÖ ile psikolojik yeme arasında anlamlı pozitif korelasyon gözlenmiştir ($r = 0.749$, $p = 0.032$). İşe Bağlı Gerginlik Ölçeği puanları psikolojik yeme ($r = 0.824$, $p = 0.023$) ve sağlıklı beslenme ve egzersiz davranışları ($r = 0.918$, $p = 0.010$) ile anlamlı pozitif ilişkiler bulunmuştur. Nikotin bağımlılığının yanı sıra işle ilgili stres ve psikolojik yeme davranışları da sağlık çalışanlarının yaşam kalitesini önemli ölçüde etkilemektedir. Fiziksel ve zihinsel esenlik, stres azaltma ve yaşam tarzı iyileştirmelerini hedefleyen bütüncül müdahaleler esastır. Destekleyici kurumsal ortamlar ve dengeli işgücü planlaması, çalışan memnuniyetini, üretkenliği ve hasta bakım sonuçlarını artırmak için kritik öneme sahip olduğunu düşünmekteyiz.

Anahtar Kelimeler: Depresyon, Beslenme, Egzersiz, Yaşam kalitesi

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EVALUATION of the EFFECT of SOCIAL MEDIA ADDICTION on SLEEP QUALITY in ADOLESCENTS

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ABSTRACT

The current study examined of social media addiction the effect on sleep quality among adolescents. This study was conducted in the 2022-2023 educational period, with 642 adolescents studying at a high school in Zonguldak City Center; The sample consisted of 519 adolescents. Research information was collected using the Personalized Document Form, Social Media Addiction Scale Short Form for Adolescents (SMBÖ-KF) and Cleveland Adolescent Sleepiness Questionnaire. The data were evaluated with SPSS 27 statistical application. Factors affecting sleep quality included gender, alcohol consumption, smoking, energy drink consumption, excessive internet and social media using, and higher internet usage during weekdays. Increasing in both internet and social media usage was associated with higher daytime sleepiness scores. In the current study age was not a significant predictor of social media addiction. Overall, the results indicated that increased internet and social media usage and addiction negatively effect sleep patterns.

Keywords: Adolescent, Social media addiction, Sleep quality

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ADÖLESANLARDA SOSYAL MEDYA BAĞIMLILIĞININ UYKU KALİTELERİ ÜZERİNE ETKİSİNİN DEĞERLENDİRİLMESİ

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ÖZET

Bu çalışma, adölesanlarda sosyal medya bağımlılığının uyku kaliteleri üzerine etkisini değerlendirmek amacıyla yürütüldü. Bu çalışmayı 2022-2023 ders yılında, Zonguldak Şehir Merkezi'nde ki bir lisede öğrenim gören 642 adölesan; örneklemi ise 519 adölesan oluşturdu. Araştırma verileri, Kişisel Bilgi Formu, Sosyal Medya Bağımlılığı Ölçeği Kısa Formu Ergenler İçin (SMBÖ-KF) ve Cleveland Adölesan Uykululuk Anketi kullanılarak toplandı. Doneler, SPSS 27 istatistik uygulaması ile değerlendirildi. Uyku kalitesini etkileyen etmenler; cinsiyet, alkol, sigara, enerji verici içecek kullanımı, internet ve sosyal medya kullanımının fazlalığı, internet kullanımının hafta içi daha fazla olması olarak belirlendi. Hem internet hem de sosyal medya kullanım süreleri arttıkça, gündüz uykululuğu skorlarında bir artış gözlemlendi. Yapılan çalışmaya göre yaş, sosyal medya bağımlılığının anlamlı açıklayıcısı olarak gözlemlenmedi. Çalışmadaki sonuçlar artan internet, sosyal medya kullanımının ve bağımlılığının uyku düzenini etkilediğini işaret etti.

Anahtar Kelimeler: Adölesan, Sosyal medya bağımlılığı, Uyku kalitesi

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EXAMINATION of the RELATIONSHIP BETWEEN COMPASSION SATISFACTION and COMPASSION FATIGUE AMONG NURSES: A COMPREHENSIVE META-ANALYSIS STUDY

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ABSTRACT

The aim of study is to reveal the relationship between compassion satisfaction and compassion fatigue among nurses. The meta-analysis technique was employed for achieving the objectives of the study. For doing that, the Web of Science database was screened by using the keywords *compassion satisfaction*, *compassion fatigue*, and *nurse*. As a result of the screening, 65 different studies were found. However, the full text of two studies could not be accessed, and it was determined that these two studies were systematic reviews. Among the remaining 61 studies, five were found to have been conducted on a different sample. Furthermore, studies that did not provide results of relationship analysis between the relevant variables were excluded from the analysis. After the elimination, 29 studies were deemed suitable for analysis, and three different meta-analysis models were carried out. In the first model, the relationship between compassion satisfaction and the burnout subdimension of compassion fatigue was examined, revealing a negative and moderate correlation (r: -0.52) among nurses, which was found to be statistically significant. In the 2nd model, the relationship between the compassion satisfaction and the traumatic stress subdimension of compassion fatigue was analyzed, and no statistically significant relationship was found between ($p>0.05$). In the final meta model, which examined the overall relationship between compassion satisfaction and compassion fatigue, a significant and negative relationship was determined between the variables (r: -0.34, $p<0.001$). Additionally, publication bias tests revealed no risk of publication bias in models. The results of the analysis are expected to contribute to a better understanding of the relationship between compassion satisfaction and compassion fatigue among nurses and shed light on the development of interventions aimed at increasing nurses' job satisfaction and reducing burnout.

Keywords: Compassion satisfaction, Compassion fatigue, Nurses, Meta-analysis

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HEMŞİRELERDE MERHAMET MEMNUNİYETİ VE MERHAMET YORGUNLUĞU ARASINDAKİ İLİŞKİNİN İNCELENMESİ: BİR META-ANALİZ ÇALIŞMASI

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ÖZET

Bu çalışmanın amacı hemşirelerde merhamet memnuniyeti ile merhamet yorgunluğu arasındaki ilişkinin ortaya konulmasıdır. Çalışmanın amaçlarına ulaşabilmek için meta analiz tekniğinden yararlanılmıştır. Bu kapsamda öncelikle Web of Science veri tabanı *merhamet memnuniyeti, merhamet yorgunluğu ve hemşireler* anahtar kelimelerinin İngilizce karşılıkları ile taranmıştır. Yapılan tarama sonucunda 65 çalışmaya ulaşılmıştır. Ancak çalışmalardan ikisinin tam metnine ulaşılamamış ve ikisinin de sistematik derleme olduğu tespit edilmiştir. 5 çalışmanın ise farklı bir örneklem üzerinde yapıldığı sonucuna ulaşılmıştır. Ayrıca ilgili değişkenler arasındaki korelasyon katsayısını vermeyen çalışmalar da meta analize dahil edilmemiştir. Yapılan eleme sonrasında 29 çalışmanın meta analiz için uygun olduğu sonucuna ulaşılmış ve çalışmada üç farklı model kurgulanmıştır. İlk modelde merhamet memnuniyeti ile merhamet yorgunluğunun tükenmişlik alt boyutu arasındaki ilişki incelenmiş ve hemşirelerde negatif yönlü ve orta düzey bir ilişki (r: -0,52) olduğu ve bu ilişkinin de istatistiksel olarak anlamlı olduğu belirlenmiştir. İkinci modelde merhamet memnuniyet ile merhamet yorgunluğunun travmatik stres boyutu arasındaki ilişki incelenmiştir ancak anlamlı ilişki tespit edilememiştir ($p>0,05$). Merhamet memnuniyeti ve merhamet yorgunluğu arasındaki ilişkinin incelendiği son modelde ise iki değişken arasında istatistiki açıdan anlamlı ve negatif bir ilişki olduğu sonucuna ulaşılmıştır (r: -0,34, $p<0,001$). Ayrıca modellerde herhangi bir yayın yanlılığı riski olmadığı da belirlenmiştir. Analiz sonuçlarının hemşirelerde merhamet memnuniyeti ve merhamet yorgunluğu arasındaki ilişkinin daha iyi anlaşılmasına katkı sağlayacağı ve hemşirelerin mesleki memnuniyetlerini artırmaya ve tükenmişliklerini azaltmaya yönelik müdahalelerin geliştirilmesine ışık tutacağı düşünülmektedir.

Anahtar Kelimeler: Merhamet memnuniyeti, Merhamet yorgunluğu, Hemşireler, Meta analiz

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FUTURE EXPECTATIONS and PSYCHIATRIC SYMPTOMS in EARTHQUAKE VICTIM ADOLESCENTS

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ABSTRACT

The aim of this study was to examine the relationship between positive future expectations and earthquake-related losses (home damage, death of someone close), depression, anxiety and posttraumatic stress levels in adolescents who experienced the February 6, 2023 earthquake in Turkiye. The sample of the study consisted of 171 adolescents selected from high school level schools in Hatay and Kahranmaras, with a mean age of 15.94 ± 1.41 [110 (64.3%) female, 61 (35.7%) male]. Participants were evaluated with "Positive Future Expectations Scale", "Child Depression Inventory", "The State-Trait Anxiety Inventory for Children", "Child Post-Traumatic Stress Reaction Index". Ethics committee approval for the research was received from Sivas Cumhuriyet University Non-Interventional Clinical Research Ethics Committee on 21.09.2023 (Decision No: 2023-09/07). It was determined that 153 (89.4%) of the participants experienced loss (home damage, death of a close person) in the earthquake, 129 (75.4%) had damage in their homes, and 115 (67.3%) had the death of a close person. It was found that 65.4% (n = 112) of the participants had depressive symptom levels above the cut-off score (19), and the anxiety levels and posttraumatic stress levels of adolescents who experienced loss of someone important and home damage were significantly higher than those without loss. The level of positive future expectancy was significantly lower in adolescents with home damage and/or bereavement compared to those without bereavement. Adolescents' positive future expectation level was negatively and significantly correlated with age, depression, anxiety and post-traumatic stress levels. As a result of the regression analysis, it was determined that home damage, depression and anxiety levels negatively and significantly predicted positive future expectation levels. The results of this study showed that positive future expectancy was negatively associated with psychiatric symptoms levels and losses in adolescents who experienced the earthquake.

Keywords: Earthquake, Positive future expectancy, Adolescent, Psychiatric symptoms

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DEPREM MAĞDURU ERGENLERDE GELECEK BEKLENTİLERİ VE PSİKİYATRİK BELİRTİLER

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ÖZET

Bu çalışmanın amacı, Türkiye'de 6 Şubat 2023 depremini yaşamış ergenlerde olumlu gelecek beklentileri ile depreme bağlı kayıplar (ev hasarı, yakın birinin ölümü), depresyon, anksiyete ve travma sonrası stres düzeyleri arasındaki ilişkiyi incelemektir. Araştımanın örneklemini Hatay ve Kahranmaraş' ta lise düzeyinde eğitim gören okullardan seçilmiş, yaş ortalaması 15.94 ± 1.41 olan [110'u (%64.3) kız, 61'i (%35,7) erkek] 171 ergen oluşturmaktadır. Katılımcılar "Olumlu Gelecek Beklentisi Ölçeği", "Çocuklar için Depresyon Ölçeği", "Çocuklar için Durumluk-Sürekli Kaygı Envanteri" ve "Çocuklar için Travma Sonrası Stres Tepki Ölçeği" ile değerlendirilmiştir. Araştırmanın etik kurul onayı Sivas Cumhuriyet Üniversitesi Girişimsel Olmayan Klinik Araştırmalar Etik Kurulu'ndan 21.09.2023 tarihinde alınmıştır (Karar No: 2023-09/07). Katılımcıların 153'ünün (%89,4) depremde kayıp (ev hasarı, yakın birinin ölümü) yaşadığı, 129'unun (%75,4) evlerinde hasar olduğu ve 115'inin (%67,3) yakın birinin öldüğü belirlenmiştir. Katılımcıların %65,4'ünün (n=112) depresif belirti düzeylerinin kesme puanının (19) üzerinde olduğu, önemli birinin kaybı ve ev hasarı yaşayan ergenlerin kaygı düzeylerinin ve travma sonrası stres düzeylerinin kayıp yaşamayanlara göre anlamlı olarak yüksek olduğu bulunmuştur. Ev hasarı ve/veya yakın kaybı yaşayan ergenlerin olumlu gelecek beklentisi düzeyi, kayıp yaşamayanlara göre anlamlı derecede düşüktür. Ergenlerin olumlu gelecek beklentisi düzeylerinin yaş, depresyon, anksiyete ve travma sonrası stres düzeyleri ile negatif yönde, anlamlı olarak ilişkili olduğu saptanmıştır. Yapılan regresyon analizi sonucunda, ev hasarı, depresyon ve kaygı düzeylerinin olumlu gelecek beklentisi düzeylerini negatif yönde ve anlamlı olarak yordadığı belirlenmiştir. Bu çalışmanın sonuçları, depremi yaşayan ergenlerde olumlu gelecek beklentisinin psikiyatrik belirti düzeyleri ve kayıplar ile negatif yönde ilişkili olduğunu göstermiştir.

Anahtar Kelimeler: Deprem, Pozitif gelecek beklentisi, Ergen, Psikiyatrik semptomlar

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THERAPEUTIC ANALYSIS of ETHICAL PROBLEMS ENCOUNTERED by STUDENT NURSES in PRACTICE EFFECT on COMMUNICATION SKILLS

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ABSTRACT

This study aimed to determine the ethical problems encountered by student nurses in practice and to determine the effect of these problems on therapeutic communication skills. The universe of the study, which was designed as a quantitative and descriptive study, consisted of 515 student nurses continuing their education at Adıyaman University, Faculty of Health Sciences, Department of Nursing. The sample of the study was calculated using the G*Power 3.1.9.7 program. The effect size was calculated as 0.5, 5% margin of error ($\alpha = 0.05$) and 95% power ($1-\beta = 0.95$), and the sample size for the study was calculated as 220. 242 student nurses who accepted to participate in the study and answered the questions completely participated in the study. In the data collection process, a 77-question survey form was used, including an introductory information form (9 questions), an ethical issues scale in clinical nursing education (52 items, 2 sub-dimensions), and a therapeutic communication skills scale for nursing students (16 items, 3 sub-dimensions). Data were collected after obtaining the necessary permissions and ethics committee approval for this research supported by TUBITAK 2209-A. SPSS (Statistical Package for Social Sciences) for Windows 22.0 package program was used for statistical analysis of the data. In this context, normality tests, descriptive statistical methods (frequency-percentage, arithmetic mean, standard deviation), as well as t-test, ANOVA and Pearson correlation analysis tests in independent groups were used. P values less than 0.05 were considered significant. It was determined that the majority of student nurses were female, between the ages of 20-25, and chose the nursing profession willingly. It was also determined that 48.2% of the nurses participating in the study encountered an ethical problem at least once during their practice. A statistically significant difference was found between the ethical problems in clinical teaching scale and therapeutic communication skills scale according to the personal characteristics of the students. In addition, a positive and moderate statistically significant relationship was found between the students' total mean scores on the ethical problems in clinical teaching scale and therapeutic communication skills scale ($r=.497$, $p=.000$). In this study, it was determined that the level of ethical problems in clinical teaching of student nurses was high and their therapeutic communication skills were at a moderate level. It is recommended that interventional studies be conducted to help students cope with ethical problems in clinical teaching and to develop therapeutic communication skills.

Keywords: Nurse, Student, Ethic, Therapeutic communication

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ÖĞRENCİ HEMŞİRELERİN UYGULAMADA KARŞILAŞTIKLARI ETİK SORUNLARIN TERAPÖTİK İLETİŞİM BECERİLERİNE ETKİSİ

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ÖZET

Bu araştırmada öğrenci hemşirelerin uygulamada karşılaştıkları etik sorunları belirleyip bu sorunların terapötik iletişim becerilerine etkisini belirlemek amaçlanmıştır. Nicel desenli olup tanımlayıcı tipte tasarlanan araştırmanın evrenini Adıyaman Üniversitesi Sağlık Bilimleri Fakültesi Hemşirelik Bölümü'nde eğitimlerine devam eden 515 öğrenci hemşire oluşturmuştur. Araştırmanın örneklemini ise G*Power 3.1.9.7 programı kullanılarak hesaplanmıştır. Etki büyüklüğü 0.5, %5 hata payı ($\alpha = 0.05$) ve %95 güç ($1-\beta = 0.95$) alınarak araştırma için örneklem sayısı 220 olarak hesaplanmıştır. Araştırmaya katılmayı kabul eden, soruları eksiksiz bir şekilde cevaplayan 242 öğrenci hemşire katılmıştır. Veri toplama sürecinde, tanıtıcı bilgi formu (9 soru), hemşirelikte klinik öğretimde etik sorunlar ölçeği (52 madde 2 alt boyut), hemşirelik öğrencileri için terapötik iletişim becerileri ölçeği (16 madde 3 alt boyut) olmak üzere 77 soruluk anket formu kullanılmıştır. TUBİTAK 2209-A kapsamında desteklenen bu araştırma için gerekli izinler ve etik kurul onayı alındıktan sonra veriler toplandı. Verilerin istatistiksel analizi için SPSS (Statistical Package for Social Sciences) for Windows 22.0 paket programı kullanıldı. Bu kapsamda normallik testleri, tanımlayıcı istatiksel yöntemlerin (frekans-yüzde, aritmetik ortalama, standart sapma) yanı sıra, bağımsız gruplarda t-testi, NOVA ve Pearson korelasyon analizi testleri kullanıldı. p değeri 0.05'den küçük değerler anlamlı olarak kabul edildi. Öğrenci hemşirelerin çoğunluğunun kadın ve 20-25 yaş aralığında olduğu ve hemşirelik mesleğini isteyerek seçtiği saptanmıştır. Aynı zamanda araştırmaya katılan hemşirelerin %48,2'sinin uygulama yaptığı sırada en az bir defa etik sorunla karşılaştığı belirlenmiştir. Öğrencilerin kişisel özelliklerine göre hemşirelikte klinik öğretimde etik sorunlar ölçeği ve terapötik iletişim becerileri ölçeği arasında istatiksel olarak anlamlı bir fark saptanmıştır. Ayrıca öğrencilerin klinik öğretimde etik sorunlar ölçeği ile terapötik iletişim becerileri ölçeği toplam puan ortalamaları arasında pozitif yönde orta düzeyde istatistiksel olarak anlamlı bir ilişki olduğu belirlenmiştir ($r=.497$, $p=.000$). Bu çalışmada öğrenci hemşirelerin klinik öğretimde etik sorunlar düzeyinin yüksek, terapötik iletişim becerilerinin ise orta düzeyde olduğu belirlenmiştir. Öğrencilere yönelik klinik öğretimde etik sorunlar ile baş edebilme ve terapötik iletişim becerilerini geliştirmeye yönelik girişimsel çalışmaların yapılması önerilmektedir.

Anahtar Kelimeler: Hemşire, Öğrenci, Etik, Terapötik iletişim

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EVALUATION of ACTIVITIES of DAILY LIVING in PATIENTS with ISCHEMIC STROKE in the ACUTE PERIOD

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ABSTRACT

Stroke is one of the leading causes of morbidity and mortality worldwide. After a stroke, some of the individuals lose their lives while others are unable to fulfill their daily life activities. It is thought that early rehabilitation in the acute period increases the patient's functional recovery potential and independence in activities of daily living and reduce the rate of disability that may occur after secondary disorder. Therefore, this study was conducted to compare the activities of daily living of individuals who had ischemic stroke and were hospitalized in a stroke center before and after treatment as a result of early rehabilitation. Our study included acute ischemic stroke patients who had experienced a first stroke, were 18 years of age or older, had a modified Rankin Scale score of ≤3, and a mini-mental test score of at least 24 points. The patients were being treated at Eskisehir Osmangazi University Stroke Center. Sociodemographic data of the participants were recorded. Early rehabilitation program including balance and mobility exercises was applied to patients hospitalized in the stroke center. Patients who started early rehabilitation in the acute period were evaluated at the end of the 10th day with the Modified Barthel Index (MBI) in terms of activities of daily living. A total of 19 patients, 10 females and nine males, were included in the study. It was determined that 57.9% of the patients were affected on the right side and 42.1% on the left side. It was found that 63.2% of the participants had hypertension, 47.4% had diabetes, 15.8% had cholesterol, 10.5% had ischemic heart disease and 21.1% had other risk factors (thyroid problems, mitral valve stenosis). It was determined that 21.1% of the patients continued to smoke, 31.6% had quit smoking, and 47.4% had never smoked. A significant difference was found between the MBI scores of patients before and after rehabilitation ($p<0.001$). Our study result shows that rehabilitation applied in the acute period is effective on activities of daily living in patients with stroke.

Keywords: Ischemic stroke, Early rehabilitation, Activities of daily living

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İSKEMIK İNME GEÇİRMİŞ HASTALARIN AKUT DÖNEMDE GÜNLÜK YAŞAM AKTİVİTELERİNİN DEĞERLENDİRİLMESİ

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ÖZET

İnme, dünyada morbidite ve mortalite nedenlerindendir. İnmeden sonra bireylerin bir kısmı hayatını kaybederken bir kısmı ise günlük yaşam aktivitelerini yerine getiremez. Akut dönemde erken rehabilitasyon ile hastanın fonksiyonel iyileşme potansiyelinin ve günlük yaşam aktivitelerinde bağımsızlığının arttığı ve ikincil bozukluk sonrası oluşabilecek engellilik oranının azaldığı düşünülmektedir. Bu nedenle bu çalışma, iskemik inme geçirmiş ve inme merkezinde yatmakta olan bireylerin erken rehabilitasyon sonucunda tedavi öncesi ve sonrası günlük yaşam aktivitelerinin karşılaştırılması amacıyla gerçekleştirilmiştir. Çalışmamıza, ilk kez inme geçirmiş, 18 yaş ve üzeri, modifiye Rankin Skalası skoru ≤3 ve mini mental test skoru en az 24 puan olan akut iskemik inme hastaları dahil edildi. Hastalar, Eskişehir Osmangazi Üniversitesi İnme Merkezi'nde tedavi görmekteydi. Katılımcıların sosyodemografik verileri kaydedildi. İnme merkezinde yatan hastalara denge ve mobilite egzersizlerini içeren erken rehabilitasyon programı uygulandı. Akut dönemde erken rehabilitasyona başlanan hastalar 10. gün sonunda günlük yaşam aktiviteleri açısından Modifiye Barthel İndeksi (MBİ) ile tedavi sonrasında değerlendirildi. 10'u kadın, dokuzu erkek olmak üzere toplam 19 hasta çalışmaya dahil edildi. Hastaların %57,9'unun sağ, %42,1'inin sol tarafının etkilendiği belirlenmiştir. Katılımcıların %63,2'sinin hipertansiyon, %47,4'ünün diyabet, %15,8'inin kolesterol, %10,5'inin iskemik kalp hastalığı ve %21,1'inin diğer (tiroid problemleri, mitral kapak darlığı) risk faktörlerine sahip olduğu bulunmuştur. Hastaların %21,1'inin sigara içmeye devam ettiği, %31,6'sının sigarayı bıraktığı ve %47,4'ünün ise hiç sigara içmediği belirlenmiştir. Hastaların rehabilitasyon öncesi ve sonrası MBİ puanları arasında anlamlı bir fark bulunmuştur ($p<0,001$). Çalışma sonucumuz inme geçirmiş hastalarda akut dönemde uygulanan rehabilitasyonun günlük yaşam aktiviteleri üzerinde etkili olduğunu göstermektedir.

Anahtar Kelimeler: İskemik inme, Erken rehabilitasyon, Günlük yaşam aktiviteleri

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EXAMINING the RELATIONSHIP between TECHNOLOGY USE and CYBER SECURITY LEVELS of NURSING STUDENTS

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ABSTRACT

The healthcare sector is undergoing rapid changes due to digital advancements. The ability of nursing students to effectively utilize technology during their educational journey has become increasingly critical. However, this scenario also introduces cyber security challenges. This study aims to explore the association between nursing students' technology usage and cyber security levels, as well as the influencing factors.This research, designed with a descriptive and correlational approach, involved 425 nursing students from a state university in the Aegean region of Türkiye between November and December 2024. Data collection was carried out using the 'Student Information Form,' 'Technology Use Scale,' and 'Cyber Security Scale.' Statistical analyses, including t-tests, ANOVA, and Pearson correlation tests, were conducted using the SPSS 25.0 software. The mean age of the participants was 21.45±2.09 years. They achieved scores of 37.01±7.17 on the technology use scale and 85.13±14.81 on the cyber security scale. A notable difference was observed between technology use and living arrangements as well as social media usage duration. Cyber security levels significantly varied by age, father's educational level, and social media usage. There was no notable statistical connection identified between the levels of technology use and cyber security awareness (r=0.011; p=0.811). Nursing students were found to possess high levels of cyber security awareness and above-average technology use. Those living with friends and with longer social media engagement exhibited higher technology use. Students aged 18-22, whose fathers had higher education levels, and who were social media users had higher cyber security levels. No meaningful correlation was detected between technology usage and cyber security levels.

Keywords: Nursing students, Technology use, Cyber security

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HEMŞİRELİK ÖĞRENCİLERİNİN TEKNOLOJİ KULLANIMI VE SİBER GÜVENLİK SEVİYELERİ ARASINDAKİ İLİŞKİNİN İNCELENMESİ

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ÖZET

Dijital dönüşümün etkisiyle sağlık sektörü hızlı bir değişim yaşamaktadır. Hemşirelik öğrencilerinin teknolojiyi etkili kullanma becerileri önem kazanmaktadır. Bu durum siber güvenlik risklerini de beraberinde getirmektedir. Bu çalışma, hemşirelik öğrencilerinin teknoloji kullanımı ile siber güvenlik seviyeleri arasındaki ilişkilerin ve etkileyen faktörlerin incelenmesini amaçlamaktadır. Tanımlayıcı ve ilişki arayıcı desende yürütülen bu çalışma, Kasım-Aralık 2024 tarihlerinde Türkiye'nin Ege Bölgesi'ndeki bir devlet üniversitesinde öğrenim gören 425 hemşirelik öğrencisini kapsamıştır. Veriler "Öğrenci Bilgi Formu", "Teknoloji Kullanım Ölçeği" ve "Siber Güvenlik Ölçeği" ile toplanmış, SPSS 25.0 programı ile analiz edilmiştir. T testi, ANOVA ve Pearson Korelasyon testi kullanılmıştır. Yaş ortalaması 21,45±2,09 olan öğrencilerin teknoloji kullanım puanları 37,01±7,17; siber güvenlik puanları ise 85,13±14,81 olarak belirlenmiştir. Teknoloji kullanımı ile birlikte yaşanılan kişiler ve sosyal medya kullanım süreleri arasında istatistiksel anlamlı farklılıklar tespit edilmiştir. Siber güvenlik seviyeleri ise yaş, baba eğitim durumu ve sosyal medya kullanım durumu ile istatistiksel anlamlı farklılıklar göstermiştir. Teknoloji kullanımı ile siber güvenlik seviyesi arasında istatistiksel olarak anlamlı bir ilişki bulunmamıştır (r=0,011; p=0,811). Hemşirelik öğrencilerinin yüksek düzeyde siber güvenlik bilincine ve ortalamanın üzerinde teknoloji kullanımına sahip oldukları belirlenmiştir. Arkadaşlarıyla yaşayan ve uzun sosyal medya kullanım sürelerine sahip öğrencilerin daha **yüksek** teknoloji kullanım puanlarına sahip olduğu görülmüştür. Yaşı 18-22 arasında olan, baba eğitim seviyesi yüksek ve sosyal medya kullanan öğrencilerin siber güvenlik seviyeleri daha yüksek bulunmuştur. Teknoloji kullanımı ile siber güvenlik seviyeleri arasında anlamlı bir ilişki tespit edilmemiştir.

Anahtar Kelimeler: Hemşirelik öğrencileri, Teknoloji kullanımı, Siber güvenlik

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EXAMINATION of the RELATIONSHIP between SKILLS that INCREASE the SELF-EESTION of CHILDREN WHO ARE ATTENDING SECONDARY EDUCATION and BASIC MOTOR SKILLS

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ABSTRACT

The aim of the research is to examine the skills that increase self-esteem and their perceptions of basic motor skills of secondary school children according to gender and grade level. The data of the research were collected from children attending secondary school in Ankara. Data in the study were obtained using the Self-Esteem Enhancing Skills Scale and the Perceived Motor Competence Inventory for Children. The skewness and kurtosis values of the data obtained from both measurement tools are between ±1. It provides normality conditions. Therefore, when comparing the findings with independent variables, Independent Samples t Test was used for variables with two groups. Of the 178 children participating in the study, 53.9% (n = 96) were girls and 46.1% (n = 82) were boys. 48.3% (n=86) of the children are in the 6th grade, and 51.7% (n=92) are in the 7th grade. As a result of the analyses, a significant difference was found between the motor competence perceptions of boys and girls [t_{176}= -3.008, $p<0.05$]. Boys ($\bar{x}$=71.93; S=14.08) perceive themselves to be more competent in terms of motor competence than girls ($\bar{x}$=65.76; S=13.24). There was no statistically significant difference between the children's gender and the skills that increase self-esteem ($p>.05$). A significant difference was found between the self-esteem increasing skills of 6th and 7th grade children [$t_{172.648}$= 2.620, $p<0.05$]. The average score of 6th grade children ($\bar{x}$=33.33; S=5.34) is higher than that of 7th grade children ($\bar{x}$=30.98; S=6.58). There is no statistically significant difference between children's grade levels and their perceptions of basic motor skills ($p>.05$). In addition, there is a positive, moderately significant relationship between children's skills that increase their self-esteem and their perceptions of basic motor skills ($r=0.446$, $p<0.01$).

Keywords: Self-esteem, Basic motor skills, Social emotional development, Motor development

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ORTAÖĞRETİME DEVAM EDEN ÇOCUKLARIN KENDİLİK DEĞERİNİ ARTTIRAN BECERİLER İLE TEMEL MOTOR BECERİLERİ ARASINDAKİ İLİŞKİNİN İNCELENMESİ

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ÖZET

Araştırmanın amacı, ortaokula devam eden çocukların kendilik değerini artıran becerileri ile temel motor becerilerine ilişkin algılarının cinsiyet ve sınıf düzeyi değişkenine göre incelenmesidir. Araştırmanın verileri, Ankara ilinde ortaokula devam eden çocuklardan toplanmıştır. Araştırmada veriler, Kendilik Değerini Artıran Beceriler Ölçeği ve Çocuklar için Algılanan Motor Yeterlik Envanteri kullanılarak elde edilmiştir. Her iki ölçüm aracından elde edilen verilerin çarpıklık ve basıklık değerleri ±1 arasındadır. Normallik koşullarını sağlamaktadır. Bu nedenle bulguların bağımsız değişkenlerle karşılaştırılmasında grup sayısı iki olan değişkenler için Bağımsız Örneklemler t Testi kullanılmıştır. Çalışmaya katılan 178 çocuğun %53,9'u (n=96) kız, %46,1'i (n=82) erkektir. Çocukların %48,3'ü (n=86) 6. sınıfa, %51,7'si (n=92) 7. sınıfa gitmektedir. Yapılan analizler sonucunda kız ve erkek çocukların motor yeterlik algıları arasında anlamlı bir fark bulunmuştur [t_{176}= -3,008, p<0,05]. Erkek çocuklar ($\bar{x}$=71,93; S=14,08), kız çocuklara ($\bar{x}$=65,76; S=13,24) göre kendilerini motor yeterlik açısından daha yeterli algılamaktadırlar. Çocukların cinsiyetleri ile kendilik değerini artıran beceriler arasında istatistiksel olarak anlamlı bir fark bulunmamıştır (*p*>.05). 6 ve 7. sınıfa giden çocukların kendilik değerini artıran becerileri arasında anlamlı bir fark bulunmuştur [$t_{172,648}$= 2,620, p<0,05]. 6. sınıfa giden çocukların puan ortalamaları ($\bar{x}$=33,33; S=5,34), 7. sınıfa giden çocuklarınkinden ($\bar{x}$=30,98; S=6,58) daha yüksektir. Çocukların sınıf düzeyleri ile temel motor becerilerine ilişkin algıları arasında istatistiksel olarak anlamlı bir fark bulunmamaktadır (*p*>.05). Ayrıca çocukların kendilik değerini artıran becerileri ile temel motor becerilerine ilişkin algıları arasında pozitif yönde orta düzeyde anlamlı bir ilişki bulunmaktadır (r=0,446, p<0,01).

Anahtar Kelimeler: Kendilik değeri, Temel motor beceriler, Sosyal duygusal gelişim, Motor gelişim.

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BIBLIOMETRIC ANALYSIS of PUBLICATIONS on VACCINE HESITISM in DISABLED INDIVIDUALS

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ABSTRACT

The aim of this research is to examine the studies on vaccine hesitancy in disabled individuals. The research data were obtained using the Web of Science (WoS) database. Published studies on vaccine hesitancy in disabled individuals were searched with the keywords “vaccine hesitancy”, “disabled person”; “disability” “handicapped person”; “immunization hesitancy”. Bibliometric analyses were performed using the VOSviewer program. 79 studies evaluating vaccine hesitancy in disabled individuals were reached in our research. Since 9 of these studies were book chapters, systematic reviews, and letters to the editor, 70 studies were included in the research. When the distribution of studies by year is examined, the most studies on vaccine hesitancy in disabled individuals were conducted in 2024 (19 publications), 2023 (19 publications), and 2022 (13 publications), respectively. When we look at the countries where the studies were conducted, 26 countries were reached, and the United States ranks first among these countries with 22 publications, while Turkey ranks 6th with 3 publications. When the institutions where the studies were conducted were evaluated, it was determined that the institution with the most publications in this field was the University of Melbourne (7 publications), and the institution with the most citations was Baylor College of Medicine. When evaluated in terms of keywords, it was found that 165 different keywords were used. The most commonly used keywords were COVID-19, vaccine hesitancy, disability, public health, and immunization. With this study, it was determined that the studies conducted in the field of vaccine hesitancy and disability are quite new, and the number of studies conducted in this field has increased, especially with the COVID-19 pandemic. It is thought that the data obtained from this study will increase awareness of the issue of vaccine hesitancy in disabled individuals and will positively contribute to the increase in studies in this field.

Keywords: Vaccine hesitancy, Disability, Bibliometric analysis

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ENGELLİ BİREYLERDE AŞI TEREDDÜDÜ KONULU YAYINLARIN BİBLİYOMETRİK ANALİZİ

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ÖZET

Bu araştırmanın amacı engelli bireylerde aşı tereddüdü ile ilgili yapılan çalışmaların incelenmesidir. Araştırmanın verileri Web of Science (WoS) veri tabanından kullanılarak elde edilmiştir. Engelli bireylerde aşı tereddüdü ile ilgili yayınlanan çalışmalar "vaccine hesitancy", "disabled person"; "disability" "handicapped person"; "immunization hesitancy" anahtar kelimeleri ile taranmıştır. Bibliyometrik analizler VOSviewer programı kullanılarak yapılmıştır. Araştırmamızda engelli bireylerde aşı tereddüdünü değerlendiren 79 çalışmaya ulaşılmıştır. Bu çalışmaların 9 tanesi kitap bölümü, sistematik derleme ve editöre mektup olduğu için 70 çalışma araştırmaya dahil edilmiştir. Çalışmaların yıllara göre dağılımına bakıldığında engelli bireylerde aşı tereddüdü ile ilgili çalışmalar sırası ile en çok 2024 (19 yayın), 2023 (19 yayın) ve 2022 (13 yayın) yıllarında yapılmıştır. Çalışmaların yapıldığı ülkelere bakıldığında 26 ülkeye ulaşılmıştır ve bu ülkeler arasında 22 yayın ile Amerika Birleşik Devletleri ilk sırada yer almaktadır, Türkiye ise 3 yayın ile 6. Sırada yer almaktadır. Çalışmaların yapıldığı kurumlar değerlendirildiğinde ise bu alanda en çok yayın yapan kurumun Melbourne Üniversitesi (7 yayın) olduğu, en çok atıf alan kurumun ise Baylor College of Medicine olduğu saptanmıştır. Anahtar kelimeler açısından değerlendirildiğinde 165 farklı anahtar kelimenin kullanıldığı bulunmuştur. En çok kullanılan anahtar kelimeler ise COVID-19, aşı tereddüdü, engellilik, halk sağlığı ve bağışıklamadır. Bu çalışma ile aşı tereddüdü ve engellilik alanında yapılan çalışmaların oldukça yeni olduğu, özellikle COVID-19 pandemisi ile bu alanda yapılan çalışmaların sayısının arttığı saptanmıştır. Bu çalışmadan elde edilen verilerin engelli bireylerde aşı tereddüdü konusu ile ilgili farkındalığı arttıracağı ve bu alanda çalışmaların artmasına olumlu katkı sağlayacağı düşünülmektedir.

Anahtar Kelimeler: Aşı tereddüdü, Engellilik, Bibliyometrik analiz

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THE RELATIONSHIP between HEALTH LITERACY and PSYCHOSOCIAL HEALTH in PREGNANT WOMEN

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ABSTRACT

This study was conducted to determine the relationship between health literacy and psychosocial health in pregnant women. The population of this descriptive and correlational study consisted of pregnant women aged 18 years and older living in Turkey. The sample size was determined as 272 people with the G*Power 3.1 program based on previous studies. Data were collected through Google Form using the sociodemographic information form created by the researcher, the Scale for Assessing Psychosocial Health Level in Pregnant Women and the Health Literacy Scale (HLS). SPSS 25 program was used for statistical analysis and the data were evaluated with parametric and non-parametric tests. In this study, it was determined that the level of health literacy in pregnant women showed a significant relationship with their psychosocial health status. It was determined that pregnant women with high health literacy had lower stress levels, acted more consciously in the prenatal process and had better psychosocial health. In addition, factors such as education level and socioeconomic status were also found to affect health literacy. These findings emphasize the importance of educational programs to improve health literacy during pregnancy.

Keywords: Pregnancy, Psychosocial health, Health literacy

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GEBELERDE SAĞLIK OKURYAZARLIĞININ PSİKOSOSYAL SAĞLIK İLE İLİŞKİSİ

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ÖZET

Bu çalışma, gebelerde sağlık okuryazarlığının psikososyal sağlıkla olan ilişkisini belirlemek amacıyla yapılmıştır. Tanımlayıcı ve ilişki arayıcı tipte tasarlanana bu çalışmanın evrenini Türkiye'de yaşayan 18 yaş ve üzeri gebe kadınlar oluşturmaktadır. Örneklem büyüklüğü, önceki çalışmalar temel alınarak G*Power 3.1 programıyla 272 kişi olarak belirlenmiştir. Veriler, araştırmacı tarafından oluşturulan sosyodemografik bilgi formu, Gebelerde Psikososyal Sağlık Düzeyini Değerlendirme Ölçeği ve Sağlık Okuryazarlığı Ölçeği (SOÖ) kullanılarak Google Form aracılığıyla toplanmıştır. İstatistiksel analizler için SPSS 25 programı kullanılmış ve veriler parametrik ve non-parametrik testler ile değerlendirilmiştir. Bu çalışma ile gebelerde sağlık okuryazarlığı düzeyinin psikososyal sağlık durumlarıyla anlamlı bir ilişki gösterdiği belirlenmiştir. Sağlık okuryazarlığı yüksek olan gebelerin, daha düşük stres seviyesine sahip oldukları, doğum öncesi süreçte daha bilinçli hareket ettikleri ve psikososyal sağlıklarının daha iyi olduğu belirlenmiştir. Ayrıca, eğitim düzeyi ve sosyoekonomik durum gibi faktörlerin de sağlık okuryazarlığını etkilediği görülmüştür. Bu bulgular, gebelik sürecinde sağlık okuryazarlığının geliştirilmesine yönelik eğitim programlarının önemini vurgulamaktadır.

Anahtar Kelimeler: Gebelik, Psikososyal sağlık, Sağlık okuryazarlığı

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CHILDHOOD EXPERIENCES and EMOTIONAL EXPERIENCES of WOMEN in the POSTPARTUM PERIOD the EFFECT of INTELLIGENCE LEVELS on the ROLE of MOTHERHOOD

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ABSTRACT

The purpose of this research is to explore how childhood experiences and emotional intelligence levels affect maternal roles in women during the postpartum phase. This cross-sectional research was carried out with 294 postpartum women aged 18 to 49. The data were collected using the Personal Information Form, the Childhood Experiences Scale, the Emotional Intelligence Traits Scale – Short Form, and the Barkin Maternal Functioning Scale. Descriptive statistics, ANOVA (Analysis of Variance), and simple linear regression analysis were used in the data analysis. The mean score of the participants on the Childhood Experiences Scale was 33.20 ± 12.95, the mean score on the Emotional Intelligence Characteristics Scale - Short Form was 82.17 ± 13.57, and the mean score on the Barkin Maternal Functioning Inventory was 74.86 ± 11.04. As a result of the simple linear regression analysis, it was determined that the independent variables explained 12.5% of the total variance ($F(2, 291) = 20.717$, $p < .001$, $R^2 = .125$, Adjusted $R^2 = .119$). Adjusted $R^2 = .119$). CDÖ ($B = -0.207$, $SE = 0.046$, $\beta = -0.249$, $t = -4.472$, $p < .001$) was found to have a negative and significant effect on BAFÖ. The analysis also revealed that DZÖÖ-KF had a positive and significant effect on BAFÖ ($B = 0.170$, $SE = 0.044$, $\beta = 0.213$, $t = 3.838$, $p < .001$). The findings of the research suggest that adverse childhood experiences decrease maternal functioning, while higher emotional intelligence levels enhance maternal functioning.

Keywords: Maternal role, Childhood experiences, Postpartum period, Emotional intelligence

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DOĞUM SONU DÖNEMDEKİ KADINLARIN ÇOCUKLUK ÇAĞI DENEYİMLERİ VE DUYGUSAL ZEKÂ DÜZEYLERİNİN ANNELİK ROLÜNE ETKİSİ

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ÖZET

Bu araştırma, doğum sonu dönemdeki kadınların çocukluk çağı deneyimleri ve duygusal zekâ düzeylerinin annelik rolüne etkisini araştırmak amacıyla yürütülmüştür. Kesitsel türde tasarlanan çalışma doğum sonu dönemde ve 18-49 yaş arasında olan 294 kadının katılımıyla gerçekleştirilmiştir. Veriler; Kişisel Bilgi Formu, Çocukluk Deneyimleri Ölçeği ve Duygusal Zekâ Özellik Ölçeği– Kısa Formu ve Barkin Annelik Fonksiyonu Envanteri kullanılmıştır. Veri analizinde tanımlayıcı istatistikler, ANOVA (Varyans analizi) ve basit doğrusal regresyon analizinden yararlanılmıştır. Araştırma bulguları incelendiğinde, katılımcıların Çocukluk Deneyimleri Ölçeği puan ortalaması 33,20 ± 12,95; Duygusal Zekâ Özellik Ölçeği– Kısa Formu puan ortalaması 82.17±13.57 ve Barkin Annelik Fonksiyonu Ölçeği puan ortalaması 74.86±11.04 olarak belirlenmiştir. Basit doğrusal regresyon analizi sonucunda, bağımsız değişkenlerin toplam varyansın %12,5'ini açıkladığı tespit edilmiştir ($F(2, 291) = 20,717$, $p < .001$, $R^2 = .125$, Adjusted $R^2 = .119$). ÇDÖ'nün BAFÖ üzerindeki negatif etkisi ($B = -0,207$, $SE = 0,046$, $ß = -0,249$, $t = -4,472$, $p < .001$) ve DZÖÖ-KF'nin BAFÖ üzerindeki pozitif etkisi ($B = 0,170$, $SE = 0,044$, $\beta = 0,213$, $t = 3,838$, $p < .001$) anlamlı bulunmuştur. ÇDÖ (B= -0.207, SE = 0.046, ß-0.249, t=-4.472, p<.001), BAFÖ üzerinde negatif ve anlamlı bir etkisi olduğu bulunmuştur. Yapılan analiz sonucunda, DZÖÖ-KF'nin BAFÖ'ye yönelik pozitif ve anlamlı bir etkisi olduğu saptanmıştır ($B = 0.170$, $SE = 0.044$, $\beta = 0.213$, $t = 3.838$, $p < .001$). Araştırma sonuçları, olumsuz çocukluk çağı deneyimlerinin annelik fonksiyonlarını azalttığını, buna karşılık yüksek duygusal zekâ düzeyinin annelik fonksiyonlarını artırdığını ortaya koymaktadır.

Anahtar Kelimeler: Annelik rolü, Çocukluk deneyimleri, Doğum sonu dönem, Duygusal zekâ

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REVIEW of MASTER'S THESES with REFLEXOLOGY APPLICATION in the FIELD of WOMEN'S HEALTH between 2015-2025

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ABSTRACT

Reflexology is a technique that is applied by applying manual pressure to reflex points located in all glands, organs and areas of the body such as hands, feet and ears. The purpose of this study is to determine the areas of use and effects of reflexology in women's health by examining postgraduate theses in the field of women's health in the last 10 years where reflexology was applied. 19 postgraduate theses in the field of women's health where reflexology was applied were reached at the National Thesis Center and 14 theses were examined between 2015-2025. The studies were examined in terms of year, institute, branch of science, thesis type and application area. As a result of the examination, it was determined that 57.1% (n=8) of the studies were doctoral theses, all of them applied foot reflexology and almost all of them were conducted by the Department of Nursing. When the areas of use of reflexology were examined, it was seen that it mostly focused on pain after cesarean section and hysterectomy. In one study, it was observed that it was also applied to women with overactive bladder complaints to reduce urinary symptoms. In addition, its effects on reducing fatigue and anxiety and lactation hormone were examined. It was determined that foot reflexology reduced pain experienced after surgery and during birth and symptoms experienced in overactive bladder. It was also determined that it reduced pain, stress and anxiety, and increased hormone levels that would affect lactation. Considering the study results, it can be recommended that nurses focus on foot reflexology application and conduct studies in other areas related to women's health to determine its effectiveness.

Keywords: Reflexology, Foot reflexology, Women's health, Nursing.

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2015-2025 YILLARI ARASINDA KADIN SAĞLIĞI ALANINDA REFLEKSOLOJİ UYGULAMASI İLE YAPILAN LİSANSÜSTÜ TEZLERİN İNCELENMESİ

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ÖZET

Refleksoloji; el, ayak, kulak gibi vücudun tüm bezleri, organları ve bölümlerinde yer alan refleks noktalarına manuel basınç uygulanmasıyla uygulanan bir tekniktir. Bu çalışmanın amacı; son 10 yılda refleksolojinin kadın sağlığı alanında uygulandığı lisansüstü tezleri inceleyerek refleksolojinin kadın sağlığındaki kullanım alanlarını ve etkilerini belirlemektir. Ulusal Tez Merkezinde kadın sağlığı alanında refleksolojinin uygulandığı 19 lisansüstü tez çalışmasına ulaşılmış olup 2015-2025 yılları arasında 14 tez çalışması incelemeye alınmıştır. Çalışmalar yıl, enstitü, bilim dalı, tez türü ve uygulama alanı açısından incelenmiştir. İnceleme sonucunda çalışmaların %57.1'inin (n=8) doktora tezi olduğu, tamamında ayak refleksolojisi uygulandığı, tamamına yakının Hemşirelik Anabilim Dalı tarafından yapıldığı saptanmıştır. Refleksolojinin kullanım alanları incelendiğinde daha çok sezaryen ve histerektomi sonrası ağrı üzerine odaklanıldığı görülmektedir. Bir çalışmada da aşırı aktif mesane şikâyeti olan kadınların üriner semptomlarını azaltmada da uygulanmıştır. Ayrıca yorgunluk ve anksiyetenin azaltılması ile laktasyon hormonu üzerine etkilerine de incelenmiştir. Ayak refleksolojisinin cerrahi operasyon sonrası ve doğum eylemi sırasında yaşanan ağrı ile aşırı aktif mesanede yaşanan semptomları azalttığı belirlenmiştir. Ayrıca ağrı, stres ve anksiyeteyi azalttığı, laktasyonu etkileyecek hormon seviyelerini arttırdığı saptanmıştır. Çalışma sonuçları göz önüne alındığında hemşirelerin ayak refleksolojisi uygulamasına odaklanmaları ve etkinliğini belirlemek için kadın sağlığıyla ilgili diğer alanlarda çalışmalar yapmaları önerilebilir.

Anahtar Kelimeler: Refleksoloji, Ayak refleksolojisi, Kadın sağlığı, Hemşirelik.

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REPRODUCTİVE AUTONOMY, FAMİLY PLANNİNG ATTİTUDES and AFFECTİNG FACTORS in MARRİED WOMEN of REPRODUCTİVE AGE

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ABSTRACT

The aim of the research was to identify the reproductive autonomy, family planning attitudes and influencing factors of married women of reproductive age. The descriptive and cross-sectional study was conducted between May 2024 and September 2024 with 344 participants between the ages of 18-49 years, consisting of married women. Data were collected using the "Personal Information Form", "Reproductive Autonomy Scale" and "Family Planning Attitude Scale". The data obtained were analyzed using SPSS 25 program. Descriptive statistics and multiple linear regression analysis were used to determine the relationships between variables. Statistical significance was evaluated at $p<0.05$ level. The mean age of the participants was 33.53±7.81 years and 64.5% had university education or higher. The mean total score of the Reproductive Autonomy Scale was 2.96±0.43 and the mean total score of the Family Planning Attitude Scale was 138.28±23.69. Reproductive autonomy was positively correlated with educational level, use of family planning and family planning attitude ($p<0.05$). Educational level and employment status significantly predicted attitude to family planning ($p<0.05$). The study revealed sociodemographic and obstetric factors affecting reproductive autonomy of married women. It was determined that education level and employment status had a positive effect on reproductive autonomy and family planning attitudes.

Keywords: Women, Reproductive age, Reproductive autonomy, Family planning attitude.

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ÜREME ÇAĞINDAKİ EVLİ KADINLARDA ÜREME ÖZERKLİĞİ, AİLE PLANLAMASI TUTUMU VE ETKİLEYEN FAKTÖRLER

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ÖZET

Araştırmanın amacı üreme çağındaki evli kadınların üreme özerkliği, aile planlaması tutumu ve etkileyen faktörleri belirlemektir. Tanımlayıcı ve kesitsel türde olan araştırma Mayıs 2024-Eylül 2024 tarihleri arasında, 18-49 yaş aralığında, evli kadınlardan oluşan 344 katılımcı ile yürütüldü. Veriler, ‘‘Kişisel Bilgi Formu’’, ‘‘Üreme Özerkliği Ölçeği’’ ve ‘‘Aile Planlaması Tutum Ölçeği’’ kullanılarak toplanmıştır. Elde edilen veriler SPSS 25 programı kullanılarak analiz edilmiştir. Verilerin değerlendirilmesinde tanımlayıcı istatistikler ve değişkenler arası ilişkileri belirlemek için çoklu doğrusal regresyon analizi uygulanmıştır. İstatistiksel anlamlılık $p<0.05$ düzeyinde değerlendirilmiştir. Katılımcıların yaş ortalaması 33,53±7,81 idi ve %64,5’i üniversite ve üzeri eğitim düzeyine sahipti. Üreme Özerkliği Ölçeği toplam puan ortalaması 2,96±0,43, Aile Planlaması Tutum Ölçeği toplam puan ortalaması ise 138,28±23,69 olarak bulundu. Üreme özerkliği, eğitim düzeyi, aile planlaması kullanımı ve aile planlaması tutumu ile pozitif ilişki gösterdi ($p<0,05$). Aile planlaması tutumunu, eğitim düzeyi ve çalışma durumunun anlamlı şekilde yordandığı bulundu ($p<0,05$). Çalışma, evli kadınların üreme özerkliklerini etkileyen sosyodemografik ve obstetrik faktörleri ortaya koymuştur. Eğitim düzeyi ve çalışma durumunun üreme özerkliği ve aile planlaması tutumları üzerinde olumlu etkisi olduğu belirlenmiştir.

Anahtar Kelimeler: Kadın, Üreme çağı, Üreme özerkliği, Aile planlaması tutumu.

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FETAL SURGERY CURRENT APPROACHES and FUTURE PERSPECTIVES

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ABSTRACT

This study aims to evaluate the development of fetal surgery from the perspective of surgical nursing, current practices, advances in surgical techniques, and to evaluate the potential consequences of scientific developments in this field. This study is based on a comprehensive literature review analyzing the evolution and current outcomes of fetal surgery using Google Scholar, Cochrane, Pubmed, Scopus databases. Fetal surgical interventions started with intrauterine transfusion. In the last three decades, the use of advanced prenatal diagnostic methods for early diagnosis of fetal anomalies has increased the systematization and resolution of surgical interventions. Intrauterine treatment of conditions such as myelomeningocele, congenital diaphragmatic hernia, twin-to-twin transfusion procedures has become possible. However, fetal surgery can only be performed by centers with multidisciplinary teams due to the high intensity of anesthesia and technical difficulties. Within the scope of surgical nursing, patient positioning, ensuring surgical safety and not lagging behind technological innovations stand out as the most critical issues.Today, the development of minimally invasive surgical solutions and the increase in robotic surgery aim to make fetal surgery safer and more effective. Although these developments are welcomed in terms of improving the clinical presence of fetal surgery and increasing improvements in perinatal and neonatal health, they should be examined by surgical and women's health nurses and evidence-based practices should be emphasized. More scientific research should be conducted on the applicability, long-term outcomes, ethical dimensions of the changes in the fields of anesthesiology, surgical medical sciences, nursing within the scope of fetal surgery.

Keywords: Current approaches, Fetal, nursing, Surgery, Women’s health

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FETAL CERRAHİ: GÜNCEL YAKLAŞIMLAR VE GELECEK PERSPEKTİFLERİ

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ÖZET

Bu çalışmada, cerrahi hemşireliği perspektifinden fetal cerrahinin gelişmesi, mevcut uygulamalar ve cerrahi tekniklerdeki ilerlemeler ele alınarak, bu alandaki bilimsel gelişmelerin olası potansiyel sonuçlarının değerlendirilmesi amaçlanmaktadır. Bu çalışma, Google akademik, Cochrane, Pubmed, Scopus veri tabanlarının Türkçe ve İngilizce olarak fetal cerrahinin evrimini ve mevcut sonuçları analiz eden kapsamlı bir literatür taramasına dayanmaktadır. Fetal cerrahi girişimler, intrauterin transfüzyon yapılmasıyla başlamıştır. Son otuz yılda, fetal anomalilerin erken tanısında ileri prenatal tanı yöntemlerinin kullanılması, cerrahi müdahalelerin sistemleşmesini ve çözümünü artırmıştır. Özellikle miyelomeningosel, konjenital diyafragmatik herni ve ikizden ikize transfüzyon prosedürü gibi durumların intrauterin tedavisi mümkün hale gelmiştir. Ancak fetal cerrahi uygulamaları yüksek yoğunluklu anestezi ve teknik zorluklar nedeniyle, yalnızca multidisipliner ekiplerin bulunduğu merkezler tarafından gerçekleştirilebilmektedir. Cerrahi hemşireliği kapsamında hastanın pozisyonu, cerrahi güvenliğin sağlanması ve teknolojik yeniliklerin gerisinde kalınmaması en kritik konular olarak öne çıkmaktadır. Günümüzde minimal invaziv cerrahi çözümlerin geliştirilmesi ve robotik cerrahinin artması ile fetal cerrahinin daha güvenli ve etkili hale getirilmesi hedeflenmektedir. Bu gelişmeler, fetal cerrahinin klinik varlığının iyileştirilmesi, perinatal ve neonatal sağlık üzerindeki gelişmeleri artırması bakımından olumlu karşılanmakla birlikte cerrahi ve kadın sağlığı hemşireleri tarafından irdelenmesi ve kanıta dayalı uygulamaların öne çıkarılması gerekmektedir. Fetal cerrahi kapsamında anesteziyoloji, cerrahi tıp bilimleri ve hemşirelik alanlarında yol açacağı değişikliklerin uygulanabilirliği, uzun dönem sonuçları ve etik boyutları üzerinde daha fazla bilimsel araştırma yapılması gerekmektedir.

Anahtar Kelimeler: Cerrahi, Fetal, Güncel yaklaşımlar, Hemşirelik, Kadın sağlığı

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GUT MİKROBİOTA and DİABETES

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ABSTRACT

In recent years, the relationship between gut microbiota and metabolic diseases has become increasingly significant. Trillions of microorganisms residing in the gut not only affect the digestive system but also have a direct impact on the immune system, neurological processes, and metabolic health. Type 2 diabetes, in particular, is a chronic disease influenced not only by genetic factors but also by environmental and biological factors. Gut microbiota imbalance (dysbiosis) is considered a critical factor in the development of metabolic diseases. This imbalance triggers chronic low-grade inflammation, leading to insulin resistance and accelerating the onset of diabetes. This review examines the role of gut microbiota in diabetes development. The disruption of the balance between beneficial and harmful bacteria in the microbiota can increase intestinal permeability (“leaky gut” syndrome) and allow inflammatory compounds such as lipopolysaccharides (LPS) to enter the bloodstream. This process can activate the immune system, damage pancreatic beta cells, and negatively affect insulin production. Additionally, the effects of microbial metabolites, such as short-chain fatty acids (SCFAs), on glucose metabolism have been explored. SCFAs help maintain gut barrier integrity, reduce inflammation, and enhance insulin sensitivity, while certain pathogenic microorganisms produce toxic compounds that have the opposite effect. Regulating gut microbiota is emerging as a novel approach to preventing and treating diabetes. Nutritional supplements such as probiotics and prebiotics promote the growth of beneficial bacteria and support metabolic health. Moreover, microbial therapies like fecal microbiota transplantation (FMT) have shown promising results in diabetes management. High-fiber dietary models, such as the Mediterranean diet, have been observed to positively influence gut microbiota balance, reduce insulin resistance, and improve glucose regulation. This study explores the relationship between gut microbiota and diabetes, evaluating how gut microbiota modulation can be utilized in the prevention and treatment of diabetes. Based on current scientific evidence, the development of personalized therapeutic approaches targeting gut microbiota could provide a new perspective on diabetes management. Future research will further clarify the clinical effectiveness and long-term impacts of specific interventions targeting gut microbiota.

Keywords: Insulin resistance, Type 2 diabetes, Microbiota

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BAĞIRSAK MİKROBİYOTASI VE DİYABET

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ÖZET

Son yıllarda bağırsak mikrobiyotası ile metabolik hastalıklar arasındaki ilişki giderek daha anlamlı hale gelmektedir. Bağırsakta yaşayan trilyonlarca mikroorganizma, yalnızca sindirim sistemini değil, aynı zamanda immün sistem, nörolojik süreçler ve metabolik sağlık üzerinde de doğrudan etki sağlamaktadır. Özellikle Tip 2 diyabet, genetik faktörlerin yanı sıra çevresel ve biyolojik etkenlerin de önemli rol oynadığı kronik bir hastalıktır. Bağırsak mikrobiyotasındaki dengesizlik (disbiyozis), metabolik hastalıkların gelişiminde kritik bir faktör olarak kabul edilmektedir. Bu dengesizlik, kronik düşük dereceli inflamasyonu tetikleyerek insülin direncine sebep olmakta ve diyabetin oluşumunu hızlandırmaktadır. Bu derlemede, bağırsak mikrobiyotasının diyabet gelişimindeki rolü ele alınmaktadır. Mikrobiyotadaki faydalı ve zararlı bakterilerin dengesinin bozulması, bağırsak geçirgenliğinin artmasına (“sızan bağırsak” sendromu) ve lipopolisakkarit (LPS) gibi inflamatuar bileşiklerin kana geçmesine sebep olabilmektedir. Bu durum bağışıklık sistemi aktivasyonunu artırarak pankreasın beta hücrelerine zarar vererek insülin üretimini olumsuz etkileyebilmektedir. Aynı zamanda kısa zincirli yağ asitleri (SCFA) gibi mikrobiyal metabolitlerin glukoz metabolizmasına olan etkileri de incelenmiştir. SCFA’lar, bağırsak bariyer bütünlüğünü destekleyerek inflamasyonu azaltabilir ve insülin duyarlılığını artırabilirken, belirli patojenik mikroorganizmaların ürettiği toksik bileşikler ise tam tersi bir etki gösterebilir. Bağırsak mikrobiyotasının düzenlenmesi, diyabetin önlenmesi ve tedavisinde yeni bir alan olarak değerlendirilmektedir. Probiyotikler ve prebiyotikler gibi besin desteklerinin bağırsak mikrobiyotası üzerindeki olumlu etkileri, sağlıklı bakterilerin çoğalmasını teşvik ederek metabolik sağlığı desteklemektedir. Ayrıca, son yıllarda fekal mikrobiyota transplantasyonu (FMT) gibi mikrobiyal terapiler, diyabet yönetiminde umut verici sonuçlar sunmaktadır. Bu çalışma, bağırsak mikrobiyotası ve diyabet arasındaki ilişkiyi inceleyerek, bağırsak mikrobiyotasının modifikasyonunun diyabetin önlenmesi ve tedavisinde nasıl kullanılabileceğini değerlendirmektedir. Gelecekteki araştırmalar, bağırsak mikrobiyotasını hedef alan spesifik müdahalelerin klinik etkinliğini ve uzun vadeli etkilerini daha net bir şekilde ortaya koyacaktır.

Anahtar Kelimeler: İnsülin direnci, Tip 2 diyabet, Mikrobiyata

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THE EFFECT of NATURAL DISASTERS on WOMEN'S SEXUAL and REPRODUCTIVE HEALTH

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ABSTRACT

Disasters are harmful events that disrupt the normal process of life and cause widespread human, material and environmental losses. The prevalence and severity of natural disasters have increased in recent years. Due to their reproductive needs, women are more negatively affected by disasters than men. Many sexual and reproductive health problems are experienced in disaster situations. Determining sexual and reproductive health problems experienced during disasters is important in terms of increasing public health and improving interventions in new disasters. Emergencies in reproductive health include; continuation of perinatal care, difficulties in accessing family planning services, urogenital infections, sexually transmitted infections, menstrual hygiene, sexual violence, domestic violence. In addition, pregnancy-related or unrelated vaginal bleeding, abnormal uterine bleeding, lower genital tract and uterine malignancies, safe curettage services, reduced individual care, reduced routine gynecological follow-up, limited access to health services and security problems may be experienced. Pregnant women who experience disasters experience more complications due to mental and physical stress, including miscarriage, premature birth, inadequate fetal growth, low birth weight, birth defects and stillbirth. In addition, pregnancy complications such as gestational hypertension, respiratory diseases and mental disorders may be seen. In disaster situations, there are risks for women and adolescent girls such as deprivation of education, exposure to gender-based violence, early and forced marriage and teenage pregnancies. Disasters may reduce the use of reproductive health services. However, reproductive health needs increase during disasters and affect long-term maternal morbidity and mortality. In addition, women experience mental, psychological and physical stress due to disasters. In many countries, there are difficulties and inadequacies in the coordination and implementation of reproductive health services during and after disasters. Natural disasters can strain already fragile health systems and negatively affect access to reproductive health services. Sexual and reproductive health care is a part of holistic nursing. Guidelines should be created for disasters, improvements should be made with multi-sectoral coordination, and reproductive and sexual health should be prioritized in disaster response plans.

Keywords: Natural disasters, Women, Sexual health, Reproductive health

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DOĞAL AFETLERİN KADINLARDA CİNSEL SAĞLIK VE ÜREME SAĞLIĞINA ETKİSİ

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ÖZET

Afetler yaşamın normal sürecini bozan yaygın insan, maddi ve çevresel kayıplara yol açan zararlı olaylardır. Doğal afetlerin yaygınlığı ve şiddeti son yıllarda artmıştır. Üreme ihtiyaçları nedeniyle kadınlar erkeklere kıyasla afetlerden daha olumsuz etkilenmektedirler. Afet durumlarında pek çok cinsel sağlık ve üreme sağlığı sorunu yaşanmaktadır. Afet sırasında yaşanan cinsel sağlık ve üreme sağlığı sorunlarının belirlenmesi toplum sağlığının artırılması ve yeni afetlerde müdahaleleri iyileştirmek açısından önemlidir. Üreme sağlığında acil durumlar arasında; perinatal bakımın devam etmesi, aile planlaması hizmetlerine ulaşımda güçlükler, ürogenital enfeksiyonlar, cinsel yolla bulaşan enfeksiyonlar, adet hijyeni, cinsel şiddet, aile içi şiddet sayılabilir. Ayrıca gebelikle ilgili veya ilgili olmayan vajinal kanamalar, anormal uterin kanamalar, alt genital sistem ve uterus malignensileri, güvenli küretaj hizmetleri, bireysel bakımda azalma, rutin jinekolojik takibin azalması sağlık hizmetlerine sınırlı erişim ve güvenlik sorunları yaşanabilmektedir. Afeti deneyimleyen gebelerde zihinsel ve fiziksel strese bağlı daha fazla düşük, erken doğum, yetersiz fetal büyüme, düşük doğum ağırlığı, doğum kusurları ve ölü doğum dahil olmak üzere komplikasyonlar görülmektedir. Ayrıca gebelik hipertansiyonu, solunum yolu hastalıkları ve ruhsal bozukluklar gibi gebelik komplikasyonları görülebilmektedir. Afet durumlarda kadınlar ve ergen kızlar için eğitimden mahrum kalma, cinsiyete dayalı şiddete maruz kalma, erken ve zorla evlilik ve genç yaşta gebelikler gibi riskler bulunmaktadır. Afetler üreme sağlığına ilişkin sağlık hizmetlerine başvuruyu azaltabilir. Ancak üreme sağlığı ihtiyaçları afetler sırasında artmaktadır ve uzun vadeli anne morbidite ve mortalitesini etkilemektedir. Ayrıca afetler nedeniyle kadınlar zihinsel, psikolojik ve fiziksel stres yaşamaktadırlar. Afetlerde ve sonrasında pek çok ülkede üreme sağlığı hizmetlerinin koordinasyonuyla ve yürütülmesi ile ilgili sıkıntı ve yetersizlikler yaşanmaktadır. Doğal afetler zaten kırılgan olan sağlık sistemlerini zorlayabilmekte üreme sağlığı hizmetlerine erişimi olumsuz etkilemektedir. Cinsel ve üreme sağlık bakımı bütünsel hemşireliğin bir parçasıdır. Afetler için yönergeler oluşturulmalı, çok sektörlü koordinasyonla iyileştirmeler yapılmalı ve afet müdahale planlarında üreme ve cinsel sağlık önceliklendirilmelidir.

Anahtar Kelimeler: Doğal afetler, Kadın, Cinsel sağlık, Üreme sağlığı

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TRANSITIONING from STUDENT to NURSE: READINESS for PRACTICE and INFLUENCING FACTORS

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ABSTRACT

This study aimed to examine the readiness of new graduates for practice and the factors influencing it. This descriptive and cross-sectional study was conducted in two nursing departments in Konya and Isparta between June 3 and 14. Data were collected from 228 final-year students eligible for graduation using the Personal Information Form, Big Five Personality Traits Scale, and Casey-Fink Readiness for Practice Survey. Descriptive statistics, t-tests, ANOVA, correlation, and multiple regression analyses were employed for data analysis. Ethics committee approval and institutional permission were obtained for the study. The study found that the mean age of the new graduates was 22.71±1.45, with a grade point average of 3.06±1.56; 76.8% were female. The highest personality trait was agreeableness (7.92±1.39), and the mean readiness for practice score was 44.52±7.44. Clinical readiness was influenced by grade point average, income status, the intern program, and the adequacy of practical and theoretical courses. Personality traits accounted for approximately 25% of clinical readiness. This study concluded that sociodemographic, academic, and personality traits affect students' preparedness for professional practice. It is recommended to assess students' readiness for professional life before graduation, identify the influencing factors, and implement interventions to enhance their readiness prior to graduation.

Keywords: Nurse, Nursing student, Nursing education, Graduate, Curriculum.

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ÖĞRENCİLİKTEN HEMŞİRELİĞE GEÇİŞ: KLİNİĞE HAZIR OLUŞLUK VE ETKİLEYEN FAKTÖRLER

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ÖZET

Bu araştırma, yeni mezun olan hemşirelik öğrencilerinin klinik uygulamaya hazır oluşluk durumları ve etkileyen faktörleri incelemek amacıyla yürütülmüştür. Araştırma, tanımlayıcı ve ilişki arayıcı türdedir. Araştırma, 3-14 Haziran tarihleri arasında Konya ve Isparta'da bulunan iki hemşirelik bölümünde yürütülmüştür. Veriler, mezun olma hakkı kazanmış, 228 son sınıf öğrencisinden yüz yüze toplanmıştır. Verilerin toplanmasında, araştırmacılar tarafından oluşturulan Birey Tanılama Formu, Beş Faktör Kişilik Ölçeği ve Casey-Fink Uygulamaya Hazır Oluşluk Ölçeği kullanılarak toplanmıştır. Verilerin analizinde tanımlayıcı istatistikler, t- testi, ANOVA analizi, korelasyon ve çoklu regresyon analizi kullanılmıştır. Araştırmanın yürütülmesi için etik kurul ve kurum izinleri alınmıştır. Araştırmada, yeni mezunların yaş ortalamasının 22.71±1.45, akademik ortalamalarının 3,06±1.56, %76.8'nin kadın olduğu, en fazla görülen kişilik tipinin yumuşak başlılık olduğu (7,92±1,39) ve klinik uygulamaya hazır oluşluk ortalama puanlarının 44,52±7,44 olduğu bulunmuştur. Klinik uygulamaya hazır oluşluğun akademik ortalama, gelir durumu, intörnlük, uygulama ve teorik derslerin yeterli görülme durumundan etkilendiği görülmüş ve kişilik özelliklerinin yaklaşık %25 oranda klinik hazır oluşluğu açıkladığı bulunmuştur (Adjusted R2= 0,245). Araştırmanın sonucunda, sosyodemografik, akademik ve kişilik özelliklerinin öğrencilerin klinik uygulamaya hazır oluşluğunu etkilediği belirlenmiştir. Buna göre, mezun olmadan önce öğrencilerin mesleki hayata hazır oluşluğunun değerlendirilmesi, etkileyen faktörlerin belirlenmesi ve öğrenciler mezun olmadan hazır oluşluğu arttıracak girişimlerin planlanması ve uygulanmasını önermekteyiz.

Anahtar Kelimeler: Hemşire, Hemşirelik öğrencisi, Hemşirelik eğitimi, Mezun, Müfredat.

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VIEWS, FEELINGS, and THOUGHTS of FIRST-TIME MOTHERS REGARDING BREASTFEEDING in PUBLIC: A QUALITATIVE STUDY*

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ABSTRACT

This study was conducted to reveal the opinions, feelings and thoughts of women who gave birth for the first time. This exploratory research was conducted through in-depth semi-structured interviews with first-time women. Purposive sampling method was used to recruit participants. All interviews were first audio-recorded and then transcribed. Colaizzi's thematic analysis method and MAXQDA software were used to reveal themes and sub-themes. Data saturation was reached with 34 participants aged between 20 and 35 years. The views, feelings and thoughts of first-time mothers about breastfeeding in the community were identified under four main themes. These themes were; (1) Confrontation with breastfeeding in public, (2) Compelling feelings about breastfeeding in public, (3) Demotivating factors for breastfeeding in public, (4) Needs for breastfeeding in public. In addition, these themes were defined with 13 sub-themes. Acceptability for breastfeeding in public varied among new mothers, but often negative narratives were present. This study revealed that the attitude of the community towards breastfeeding plays a major role in the views, feelings and opinions of mothers. In addition, it was an important and novel finding that mothers' culture-specific beliefs also influenced their motivation to breastfeed in public. Proactive interventions targeting new mothers and their environment are needed to improve mothers' public breastfeeding experiences.

Keywords: Breastfeeding, Human milk, Nursing, Qualitative research.

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İLK KEZ DOĞUM YAPAN ANNELERİN TOPLUM İÇİNDE EMZİRMEYE İLİŞKİN GÖRÜŞ, DUYGU VE DÜŞÜNCELERİ: NİTEL BİR ÇALIŞMA

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ÖZET

Bu araştırma ilk kez doğum yapan kadınların görüş, duygu ve düşüncelerini ortaya çıkarmak amacıyla yapıldı. Bu keşifsel araştırma, ilk kez doğum yapan kadınlarla derinlemesine yarı yapılandırılmış görüşmeler yoluyla yürütüldü. Katılımcıları toplamak için amaçlı örnekleme yöntemi kullanıldı. Önce ses kaydına alınan tüm görüşmeler yazıya geçirildi. Temaları ve alt temaları ortaya çıkarmak için Colaizzi'nin tematik analiz yöntemi ve MAXQDA yazılımı kullanıldı. Veri doygunluğuna 20 ila 35 yaşları arasında 34 katılımcıyla ulaşıldı. İlk kez doğum yapan annelerin toplum içinde emzirmeye ilişkin görüş, duygu ve düşünceleri dört ana tema altında belirlendi. Bu temalar; (1) Toplum içinde emzirme ile yüzleşme, (2) Toplum içinde emzirmeye ilişkin zorlayıcı duygular, (3) Kamusal alanda emzirmeyi engelleyen faktörler, (4) Toplum içinde emzirme için ihtiyaçlar idi. Ayrıca bu temalar, 13 alt tema ile tanımlandı. Toplum içinde emzirme için kabul edilebilirlik, yeni anneler arasında değişse de sıklıkla olumsuz anlatılar mevcuttu. Bu çalışma, içinde yaşanılan toplumun emzirmeye karşı tutumunun, annelerin görüş, duygu ve düşünceleri üzerinde büyük rolü olduğunu ortaya koydu. Buna ek olarak, annelerin kültüre özgü inançlarının da kamusal alanda emzirme motivasyonlarını etkilemesi önemli ve yeni bir bulguydu. Annelerin kamusal emzirme deneyimlerini iyileştirmek için yeni anneleri ve çevresini hedefleyen proaktif müdahalelere ihtiyaç vardır.

Anahtar Kelimeler: Emzirme, Anne sütü, Hemşirelik, Nitel araştırma

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BIBLIOMETRIC ANALYSIS of ARTIFICIAL INTELLIGENCE STUDIES in HEALTHCARE

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ABSTRACT

This study aims to conduct a bibliometric analysis of research on artificial intelligence (AI) in the healthcare field and to provide a comprehensive overview of the existing literature. The study includes all AI-related articles in healthcare published until the end of 2024 and indexed in the Web of Science database. Conference papers, book chapters, and editorials were excluded. Descriptive analyses were conducted using Excel, and data visualization was performed with VOSviewer. By the end of 2024, a total of 1,538 AI-related articles in healthcare had been published. The first study in this field appeared in 1985, with only 36 articles published before 2019. In the last two years (2023–2024), 865 articles were published, accounting for more than half of the total publications. The majority of articles (1,508) were written in English. Analysis of Web of Science categories revealed that the most frequent research areas were health sciences services, medical informatics, public, environmental, and occupational health. The most frequently used publication outlets were Journal of Medical Internet Research (48), Cureus Journal of Medical Science (33), and Digital Health (26). The highest number of studies were conducted in the United States (407), China (210), and the United Kingdom (180), while Türkiye contributed 17 studies. The total number of citations for the included articles was 35,152, with an average of 22.86 citations per article. The most cited study (1,634 citations) was "Artificial Intelligence in Healthcare: Past, Present, and Future" by Jiang et al. (2017). Research on AI in healthcare has grown significantly in recent years. Expanding research output in Türkiye, assessing AI integration into health management and policy, and enhancing international collaborations are recommended. Future studies should focus on comprehensive analyses of AI's impact on healthcare services.

Keywords: Healthcare, Artificial intelligence, Bibliometric analysis

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SAĞLIK ALANINDA YAPAY ZEKA ÇALIŞMALARININ BİBLİYOMETRİK ANALİZİ

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ÖZET

Bu çalışmanın amacı sağlık alanındaki yapay zeka konulu çalışmaların bibliyometrik analizini yaparak çalışmaların genel bir görünümünü ortaya koymaktır. Araştırma kapsamına Web of Science veri tabanında yer alan ve 2024 yılı sonuna kadar yayımlanmış sağlık alanındaki yapay zeka konulu tüm makaleler dahil edilmiştir. Bildiri, kitap bölümü ve editöre mektup türündeki yayınlar hariç tutulmuştur. Tanımlayıcı analizler için excel, verilerin görselleştirilmesi için ise VOSviewer programı kullanılmıştır. Sağlık alanında 2024 yılı sonuna kadar yayımlanan yapay zeka konulu makale sayısı 1538'dir. İlk makale 1985 yılında yayımlanmıştır. 2019 yılına kadar yayımlanan makale sayısı sadece 36'dır. Son iki yılda (2023 – 2024) yayımlanan makale sayısı (865) yayımlanan toplam makalelerin yarısından fazladır. Makalelerin büyük bir kısmı (1508) İngilizce dilindedir. Web of Science alan kategorisi incelendiğinde; makalelerin en çok sağlık bilimleri hizmetleri, tıbbi bilişim, halk, çevre ve iş sağlığı alanlarında yayımlandığı belirlenmiştir. Makaleler en fazla Journal of Medical Internet Research (48), Cureus Journal of Medical Science (33) ve Digital Health (26) dergilerinde yayımlanmıştır. Çalışmalar en çok Amerika Birleşik Devletleri (407), Çin (210) ve İngiltere'de (180) yapılmıştır. Türkiye'de gerçekleştirilen araştırma sayısı 17'dir. Araştırma kapsamındaki makalelere yapılan toplam atıf sayısı 35152'dir. Makale başına ortalama atıf sayısı 22,86'dır. En fazla atıf alan (1634) makale Jiang, Fei ve ark. (2017) tarafından yapılan "Artificial intelligence in healthcare: past, present and future" başlıklı makaledir. Sağlık alanında yapay zeka çalışmaları hızla artmaktadır. Türkiye'de bu alandaki araştırma sayısının artırılması, sağlık yönetimi ve politikalarına entegrasyonunun değerlendirilmesi ve uluslararası iş birliklerinin güçlendirilmesi önerilmektedir. Gelecek çalışmalarda, yapay zekanın sağlık hizmetlerine etkisini değerlendiren derinlemesine analizlere odaklanılması faydalı olacaktır.

Anahtar Kelimeler: Sağlık, Yapay zeka, Bibliyometrik analiz

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UTILIZATION of ARTIFICIAL INTELLIGENCE-SUPPORTED DECISION SUPPORT SYSTEMS in HEALTHCARE INSTITUTIONS

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ABSTRACT

This study aims to examine the application areas, advantages, and key challenges of artificial intelligence (AI)-driven decision support systems (DSS) in healthcare institutions within an academic framework. By evaluating the impact of AI-based DSS on healthcare management and clinical decision-making processes, this study analyzes their potential contributions and limitations. The study was conducted through a literature review. Recent academic studies, reports from international health organizations, and applied case analyses were examined. Additionally, the effectiveness of AI-based models used in clinical and administrative decision support processes was comparatively analyzed. The findings indicate that AI-powered DSS provide significant benefits in various healthcare domains. Clinical decision support systems enhance diagnostic accuracy, facilitate early detection, improve treatment planning, and optimize operational efficiency. In hospital management, these systems accelerate decision-making processes related to resource allocation, patient flow, and staff planning. Furthermore, AI plays a crucial role in public health applications by predicting the spread of infectious diseases and informing health policy decisions. Despite their advantages, AI-driven DSS face critical challenges, including data security, ethical concerns, and algorithmic biases. Ensuring the effective use of these systems requires the development of regulatory frameworks to safeguard data privacy and security. Moreover, the adaptation of healthcare professionals to these technologies remains a limiting factor for widespread implementation. AI-powered DSS have the potential to transform healthcare management and play a pivotal role in enhancing patient care quality. However, sustainable and ethical integration necessitates the establishment of regulatory frameworks, the strengthening of technical infrastructure, and the development of comprehensive training programs for healthcare professionals. In the future, the integration of AI-driven systems into the healthcare sector is expected to make decision-making processes more efficient, objective, and effective.

Keywords: Artificial intelligence (AI), Decision support systems (DSS), Healthcare management, Clinical decision support systems (CDSS).

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SAĞLIK KURUMLARINDA YAPAY ZEKÂ DESTEKLİ KARAR DESTEK SİSTEMLERİNİN KULLANIMI

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ÖZET

Bu çalışmanın amacı, sağlık kurumlarında yapay zekâ (YZ) destekli karar destek sistemlerinin (KDS) kullanım alanlarını, avantajlarını ve karşılaşılan temel zorlukları akademik bir çerçevede incelemektir. YZ destekli KDS'lerin sağlık yönetimi ve klinik karar alma süreçlerine etkisi değerlendirilerek, potansiyel katkıları ve sınırlılıkları analiz edilmektedir. Çalışma, literatür taraması yöntemiyle gerçekleştirilmiştir. Güncel akademik çalışmalar, uluslararası sağlık örgütleri raporları ve uygulamalı vaka analizleri incelenmiştir. Ayrıca, klinik ve yönetsel karar destek süreçlerinde kullanılan YZ tabanlı modellerin etkinliği karşılaştırmalı olarak ele alınmıştır. Bulgular, YZ destekli KDS'lerin sağlık sektöründe önemli katkılar sunduğunu göstermektedir. Klinik karar destek sistemleri, tanı süreçlerinin doğruluğunu artırarak erken teşhisi mümkün kılmakta, tedavi planlamasını iyileştirmekte ve operasyonel verimliliği artırmaktadır. Hastane yönetiminde ise kaynak tahsisi, hasta akışı ve personel planlamasında karar süreçlerini hızlandırmaktadır. Halk sağlığı uygulamalarında ise YZ, bulaşıcı hastalıkların yayılımını tahmin etme ve sağlık politikalarını yönlendirme konusunda etkili bir araç olarak öne çıkmaktadır. YZ destekli KDS'lerin faydalarına rağmen, veri güvenliği, etik sorunlar ve algoritmik önyargılar gibi temel zorluklar bulunmaktadır. Bu sistemlerin etkin kullanımı için veri gizliliği ve güvenliği konularında yasal düzenlemelerin geliştirilmesi gerekmektedir. Ayrıca, sağlık profesyonellerinin bu sistemlere adaptasyonu, teknolojinin yaygınlaşmasını sınırlayan önemli faktörler arasındadır. YZ destekli KDS'ler, sağlık yönetiminde dönüşüm potansiyeline sahiptir ve hasta bakım kalitesini artırmada kritik rol oynamaktadır. Ancak, sürdürülebilir ve etik entegrasyon için düzenleyici çerçevelerin oluşturulması, teknik altyapının güçlendirilmesi ve sağlık çalışanlarına yönelik eğitim programlarının geliştirilmesi gerekmektedir. Gelecekte, bu sistemlerin sağlık sektörüne entegrasyonuyla karar alma süreçlerinin daha etkili ve verimli hale gelmesi beklenmektedir.

Anahtar Kelimeler: Yapay zekâ (YZ), Karar destek sistemleri (KDS), Sağlık yönetimi, Klinik karar destek sistemleri (KKDS).

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HEALTH ENTREPRENEURSHIP and ITS IMPORTANCE

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ABSTRACT

As is known, health is no longer used only to mean the absence of disease and disability, but also to mean a state of complete social and spiritual well-being. The concept of health entrepreneurship can also be considered as renewal, innovation, risk taking and proactiveness in the health sector. Health entrepreneurship involves innovation in health care and improving existing health care. It can be thought that entrepreneurial activities in this field can contribute to the achievement of quality, which is also important in health services, and to the efficient, accurate and fast transportation of services. Where traditional healthcare services remain limited, healthcare entrepreneurship has the potential to transform healthcare systems by providing innovative solutions, especially in the areas of digital health, biotechnology and medical device development. This type of entrepreneurship involves the development of new products, services, technologies and business models. Health entrepreneurship aims not only to achieve economic gain but also to provide social benefit. In this research, concepts were examined and analyzed by scanning the literature. As a result of the literature research, the general definition, importance and relationships of the concepts were examined and their contributions and effects were investigated. The aim of the research is to highlight the necessity and importance of health entrepreneurship. As a result, health entrepreneurship plays an important role in meeting the health needs of individuals and society. With innovative and sustainable solutions, great contributions are made to the health sector at both individual and social levels. Scientific studies conducted and to be carried out in this field can contribute academically to the concepts of health management, entrepreneurship and health entrepreneurship, as well as providing benefits in the transfer of health services.

Keywords: Health, Entrepreneurship, Health entrepreneurship

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SAĞLIK GİRİŞİMCİLİĞİ VE ÖNEMİ

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ÖZET

Sağlık bilindiği üzere artık sadece hastalık ve sakatlığın olmayışı anlamında kullanılmayıp, aynı zamanda sosyal ve ruh olarak da tam bir iyilik hali anlamında kullanılmaktadır. Sağlık girişimciliği kavramı sağlık sektöründe yenilenme, yenilik, risk alma ve proaktiflik olarak da düşünülebilir. Sağlık girişimciliği sağlık hizmetlerinde yeniliği ve mevcut sağlık hizmetini geliştirmeyi içerir. Bu alandaki girişimcilik faaliyetleri ile sağlık hizmetlerin de önemli olan kalitenin yakalanmasına, hizmetlerin verimli, doğru ve hızlı ulaşımına katkı sağlanabileceği düşünülebilir. Geleneksel sağlık hizmetlerinin sınırlı kaldığı durumlarda, sağlık girişimciliği, özellikle dijital sağlık, biyoteknoloji ve tıbbi cihaz geliştirme alanlarında yenilikçi çözümler sunarak sağlık sistemlerini dönüştürme potansiyeline sahiptir. Bu girişimcilik türü, yeni ürünler, hizmetler, teknolojiler ve iş modelleri geliştirilmesini içermektedir. Sağlık girişimciliği, yalnızca ekonomik kazanç elde etmeyi değil, aynı zamanda sosyal fayda sağlamayı da amaçlar. Bu araştırmada kavramlar literatür taranarak irdelenmiş ve analiz edilmiştir. Literatür araştırması sonucunda kavramların genel tanım, önem ve ilişkileri incelenip katkı ve etkiler araştırılmıştır. Araştırma ile sağlık girişimciliğinin gerekliliği ve önemi öne çıkarmak amaçlanmıştır. Sonuç olarak, sağlık girişimciliği, bireylerin toplumun sağlık ihtiyaçlarını karşılamada önemli bir rol oynar. Yenilikçi ve sürdürülebilir çözümlerle sağlık sektöründe hem bireysel hem de toplumsal düzeyde büyük katkılar sağlanmaktadır. Bu alanda yapılan ve yapılacak bilimsel çalışmalar sağlık yönetimi**,** girişimcilik ve sağlık girişimciliği kavramlarına akademik katkı sağlayabileceği gibi sağlık hizmetlerinin aktarılması aşamasında da fayda sağlayabilir.

Anahtar Kelimeler: Sağlık, Girişimcilik, Sağlık girişimciliği

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COMFORT CONCEPT and ITS APPLICATION in NURSING

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ABSTRACT

The term comfort derives from the Latin word "confortare", which means "to strengthen, comfort or encourage". The linguistic dictionary defines it as a synonym for "state of well-being". In the dictionary of the Turkish Language Association, it is defined as "Material comfort that facilitates daily life" and it is stated that its origin is French "confort". The concept of comfort is also considered in connection with the concepts of well-being and quality of life. Comfort is a pleasant experience, a desired state of contentment and feeling positive and empowered in the ability to cope with crises and difficulties. Comfort is the primary goal for patients and is at the centre of the patient experience. Therefore, maximising comfort is a universal goal for health services. However, comfort is a complex concept that is difficult to operationalise and assess, resulting in a lack of scientific and standardised comfort care practices. As in all professional disciplines, efforts to create the scientific knowledge content that nursing will use in its professional practices continue. This knowledge content is described by the terms "concept" and "theory", especially in the behavioural and social sciences. In order to put nursing practices on a scientific basis, it is necessary to define the concepts and theories related to the profession. The application of comfort as a theory in nursing was first proposed by Katharina Kolcaba in 1990. In the basic assumptions of the theory; Individuals respond holistically to complex stimuli. It is stated that comfort is a desired result specific to nursing. According to Kolcaba, the theory has two dimensions. The first one includes the stages of relief, relaxation and transcendence (overcoming problems). The second dimension consists of physical, psychospiritual, environmental and sociocultural components. The cross relationship of the two dimensions with each other forms the structure of the comfort theory. The cross relationship of the two dimensions with each other forms the structure of the comfort theory. In this review article, the concept of "comfort" and the application of comfort theory in nursing are discussed in line with the literature on the subject.

Keywords: Nursing, Comfort, Concept, Theory

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KONFOR KAVRAMI VE HEMŞİRELİKTE UYGULANIŞI

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ÖZET

Konfor terimi, "güçlenmek, rahatlatmak veya cesaretlendirmek" anlamına gelen Latince "*confortare"* kelimesinden türemiştir. Dilbilim sözlüğünde, "*iyi olma hali*"nin eşanlamlısı olarak tanımlanır. Türk Dil Kurumu sözlüğünde ise "*Günlük hayatı kolaylaştıran maddi rahatlık*" şeklinde tanımlanmış ve kökeninin Fransızca *"confort"* olduğu belirtilmiştir. Konfor kavramı ayrıca *refah* ve *yaşam kalitesi* kavramlarıyla bağlantılı olarak ele alınmaktadır. Konfor, hoş bir deneyim, istenen bir memnuniyet hali ve kriz ve zorluklarla başa çıkma becerisinde olumlu ve güçlenmiş hissetmektir. Konfor hastalar için öncelikli hedeftir ve hasta deneyiminin merkezindedir. Bu nedenle konforu en üst düzeye çıkarmak sağlık hizmetleri için evrensel bir hedef olmaktadır. Ancak konfor, işlevselleştirilmesi ve değerlendirilmesi zor olan karmaşık bir kavramdır ve bu da bilimsel ve standartlaştırılmış konfor bakım uygulamalarının eksikliğine neden olur. Tüm profesyonel disiplinlerde olduğu gibi hemşireliğin de mesleki uygulamalarında kullanacağı bilimsel bilgi içeriğini oluşturma çabaları devam etmektedir. Bu bilgi içeriği, özellikle davranış ve sosyal bilimler alanında "kavram" ve "kuram" terimleri ile açıklanır. Hemşirelik uygulamalarının bilimsel bir temele oturtulabilmesi için meslekle ilgili kavramları ve kuramları tanımlamak gereklidir. Bir kuram olarak Konfor'un Hemşirelikte uygulanışı, ilk kez 1990 yılında Katharina Kolcaba tarafından ortaya atılmıştır. Kuramının temel varsayımlarında; Bireyler, karmaşık uyarılara bütüncül yanıt verir. Konfor, hemşireliğe özgü istendik bir sonuç olduğu belirtilmiştir. Kolcaba'ya göre kuramın iki boyutu vardır. Birincisi; *ferahlama, rahatlama* ve *üstünlük* (sorunların üstesinden gelme) aşamalarını içerir. İkinci boyut ise *fiziksel, psikospiritüel, çevresel ve sosyokültürel* bileşenlerinden oluşmaktadır. İki boyutun birbiri ile çapraz ilişkisi konfor kuramının yapısını oluşturur. Bu derleme yazıda "konfor" kavramı ve hemşirelikte konfor kuramının uygulanışı, konuya ilişkin literatür doğrultusunda ele alınmıştır.

Anahtar Kelimeler: Hemşirelik, Konfor, Kavram, Kuram

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HEALTH ACCREDİTATİON SURVEYORS ACCORDİNG to FİVE-FACTOR PERSONALİTY TRAİTS

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ABSTRACT

The aim of this study was to reveal the personality traits of health accreditation surveyors (HASs) according to the Five-Factor Personality Traits (FFPT) and to determine whether the personality traits change according to the determined indicators. The study was descriptive and cross-sectional. The population of the study consisted of 134 HASs, while the sample consisted of 68 HASs who agreed to participate in the survey. Data were collected with the FFPT scale. Descriptive statistical techniques (frequency, percentage, median, interquartile range) and statistical analyses were used to evaluate the data. Mann-Whitney U and Kruskal-Wallis tests were used to compare the groups of independent variables. Statistically, 0.05 was determined as the significance level. It was found that 54.4% of the participants were female, 73.5% were married, 57.4% were 46 years of age or older, 42.6% were PhD graduates, 51.5% had 6 or more years of experience in the field of quality, and 42.6% had 20 or more quality assessments. In the comparison made according to individual characteristics, it was found that the scores of women from the ‘extroversion’ and ‘neuroticism’ sub-dimensions and the scores of singles from the ‘responsibility’ sub-dimension were statistically significantly higher than those of married people. No statistically significant difference was found according to age, educational level, duration of experience in the field of quality and the number of quality assessments performed. It was found that HASs were extroverted, responsible, easy-going individuals who are open to experience, that the "extraversion" and "neuroticism" aspects of women predominate, and that the responsibility feature comes to the fore in unmarried HASs. It is thought that forming survey teams by considering surveyors' personality and demographic characteristics will increase team harmony and support survey success.

Keywords: Accreditation surveyors, Personality traits, Surveying.

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BEŞ FAKTÖR KİŞİLİK ÖZELLİKLERİNE GÖRE SAĞLIKTA AKREDİTASYON DENETÇİLERİ

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ÖZET

Bu araştırmanın amacı Beş Faktör Kişilik (BFK) özelliklerine göre, sağlıkta akreditasyon denetçilerinin (SAD) kişilik özelliklerini ortaya koymak ve belirlenen göstergelere göre kişilik özelliklerinin değişip değişmediğini tespit etmektir. Çalışma, tanımlayıcı ve kesitsel niteliktedir. Çalışmanın evrenini 134 SAD oluştururken, örneklemi ankete katılmayı kabul eden 68 SAD oluşturmaktadır. Veriler BFK ölçeği ile toplanmıştır. Verilerin değerlendirilmesinde tanımlayıcı istatistiksel teknikler (frekans, yüzde, medyan, çeyreklikler arası aralık) ve istatistiksel analizler kullanılmıştır. Bağımsız değişkenlere ait grupların karşılaştırılmasında Mann-Whitney U ve Kruskal-Wallis testlerinden faydalanılmıştır. İstatistiksel açıdan anlamlılık düzeyi olarak 0,05 belirlenmiştir. Araştırmaya katılanların %54,4'ünün kadın, %73,5'inin evli, %57,4'ünün 46 yaş ve üzeri, %42,6'sının doktora mezunu, %51,5'inin kalite alanındaki deneyim süresinin 6 yıl ve üzeri ve %42,6'sının gerçekleştirdiği kalite değerlendiriciliği sayısının 20 ve üzeri olduğu saptanmıştır. Bireysel özelliklere göre yapılan karşılaştırmada kadınların erkeklerden "dışa dönüklük" ve "nevrotiklik" alt boyutlarından aldıkları puanların; bekarların evlilerden "sorumluluk" alt boyutundan aldıkları puanın istatistiki açıdan anlamlı bir şekilde yüksek olduğu saptanmıştır. Yaş, eğitim durumu, kalite alanındaki deneyim süresi ve gerçekleştirilen kalite değerlendiriciliği sayısına göre ise istatistiki açıdan anlamlı bir farklılık bulunamamıştır. SAD'ların dışa dönük, sorumluluk sahibi, yumuşak başlı, deneyime; kadınların "dışa dönüklük" ve "nevrotiklik" yönlerinin daha ağır bastığı; evli olmayan SAD'larda sorumluluk özelliğinin öne çıktığı tespit edilmiştir. Denetim ekiplerinin kişilik tipleri ve denetçilerin demografik özellikleri dikkate alınarak oluşturulmasının ekip uyumunu artıracağı ve denetim başarısını destekleyeceği düşünülmektedir.

Anahtar Kelimeler: Akreditasyon denetçileri, Kişilik özellikleri, Denetim

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EXAMINING THE EFFECT of SAMPLE SIZE IN REPEATED MEASURES ANALYSIS OF VARIANCE: MALPRACTICE INSURANCE EXAMPLE

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ABSTRACT

This study aimed to examine the impact of different sample sizes on the statistical analysis results in repeated measures analysis of variance. A survey, Compulsory Physician Professional Liability Insurance Knowledge Survey or shortly Malpractice Insurance Knowledge Survey, was used to collect data. Three repeated measurements were taken, and four different sample sizes (n=20, 40, 60, and 80) were used. The survey was prepared by the authors and contained demographical data and 33 knowledge-level items for malpractice. It was first administered without any training on physician malpractice insurance. The survey was then administered a second time after training had been provided. The third application was conducted three weeks after the second survey. In all sample size groups, repeated measures analysis of variance (ANOVA) revealed statistically significant differences between survey scores ($p<0.001$). The Bonferroni post-hoc comparisons found statistically significant differences between students' pre-test, post-test, and retention test scores in all sample size groups ($p<0.05$). Most students who completed the survey indicated that they had knowledge gaps regarding physician malpractice insurance, expressed a desire to receive training on this topic, and requested that it be included in the mandatory curriculum. Additionally, they suggested increasing the number of medical law courses in the curriculum. Consistent with this, it was found that the students who participated in the survey had knowledge gaps about physician malpractice insurance. The retention test revealed that the knowledge gained by students was largely retained. The statistical analyses with descriptive measures were performed by SPSS 27.0 software. The repeated survey scores were compared by Repeated Measure ANOVA with multivariate tests and sphericity tests. It is recommended that physician malpractice insurance be included as a separate topic in UCEP-2026 and that the number of medical law topics within the medical education curriculum be increased.

Keywords: Repeated measurements, Variance analysis, Sample size, Biostatistics, Malpractice insurance, Compulsory Liability Insurance for Medical Malpractice

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TEKRARLI ÖLÇÜMLÜ VARYANS ANALİZİNDE ÖRNEKLEM BÜYÜKLÜĞÜNÜN ETKİSİNİN İNCELENMESİ: MALPRAKTİS SİGORTASI ÖRNEĞİ

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ÖZET

Bu çalışmanın amacı, tekrarlı ölçümlerde varyans analizinde farklı örneklem büyüklüklerinin istatistiksel analiz sonuçları üzerindeki etkisini incelemektir. Veri toplamak için Zorunlu Hekim Mesleki Sorumluluk Sigortası Bilgi Anketi veya kısaca Malpraktis Sigortası Bilgi Anketi adlı bir anket kullanılmıştır. Üç tekrarlı ölçüm yapılmış ve dört farklı örneklem büyüklüğü (n=20, 40, 60 ve 80) kullanılmıştır. Anket, yazarlar tarafından hazırlanmış olup, demografik veriler ve malpraktis ile ilgili 33 bilgi düzeyi maddesi içermektedir. Anket ilk olarak hekim malpraktis sigortası hakkında herhangi bir eğitim verilmeden uygulanmıştır. Anket daha sonra eğitim verildikten sonra ikinci kez uygulanmıştır. Üçüncü uygulama ikinci anketten üç hafta sonra gerçekleştirilmiştir. Tüm örneklem büyüklüğü gruplarında, tekrarlanan ölçümler varyans analizi (ANOVA) anket puanları arasında istatistiksel olarak anlamlı farklılıklar olduğunu ortaya koymuştur ($p<0.001$). Bonferroni post-hoc karşılaştırmaları, tüm örneklem büyüklüğü gruplarında öğrencilerin ön test, son test ve kalıcılık testi puanları arasında istatistiksel olarak anlamlı farklılıklar bulmuştur ($p<0.05$). Anketi tamamlayan öğrencilerin çoğu, hekim malpraktis sigortası konusunda bilgi eksiklikleri olduğunu belirtmiş, bu konuda eğitim almak istediklerini ifade etmiş ve zorunlu müfredata dahil edilmesini talep etmiştir. Ayrıca, müfredattaki tıp hukuku derslerinin sayısının artırılmasını önermişlerdir. Bununla tutarlı olarak, ankete katılan öğrencilerin hekim malpraktis sigortası hakkında bilgi eksiklikleri olduğu tespit edilmiştir. Kalıcılık testi, öğrenciler tarafından edinilen bilginin büyük ölçüde korunduğunu ortaya koymuştur. Tanımlayıcı ölçümlerle istatistiksel analizler SPSS 27.0 yazılımı ile gerçekleştirilmiştir. Tekrarlanan anket puanları, çok değişkenli testler ve küresellik testleri ile Tekrarlı Ölçümlü ANOVA ile karşılaştırılmıştır. UCEP-2026'da hekim malpraktis sigortasının ayrı bir konu olarak yer alması ve tıp eğitimi müfredatındaki tıp hukuku konularının sayısının artırılması önerilmektedir.

Anahtar Kelimeler: Tekrarlanan ölçümler, Varyans analizi, Örneklem büyüklüğü, Biyoistatistik, Malpraktis sigortası, Tıbbi kötü uygulamaya ilişkin zorunlu mali sorumluluk sigortası

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GLASS CEILING in THE HEALTH SECTOR: A SYSTEMATIC REVIEW

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ABSTRACT

The glass ceiling refers to the invisible barriers that prevent women employees from rising to senior management levels in organizations. The aim of the study is to systematically examine the studies on the glass ceiling in the healthcare sector in Turkey. On 27.01.2025, a search was conducted with the keywords “glass ceiling” and “health or hospital” for English publications in Google Scholar, Web of Science and EBSCO databases. A total of 2763 publications were reached. As exclusion criteria, qualitative studies, publications within the scope of gray literature (congress presentation and dissertation), and studies conducted with students were excluded. Finally, 16 studies were included in the analysis. The sample size in the studies was at least 63 and at most 708. 60% of the studies were applied only to women. The general scale score average in all studies was found to be 2.95 (min=1.94; max=3.98). Studies generally show that the obstacles women face in their careers are more pronounced and that these obstacles cover different dimensions such as personal perceptions, organizational policies and social stereotypes. As a result of the examination, it was determined that working individuals between the ages of 30-40 experience the glass ceiling syndrome more. While it is striking that married individuals receive high scores in the dimensions of “Multiple Role Assumption” and “Organizational Culture and Policies”, there are studies that detect high scores in the dimensions of “Professional Distinction” and “Endurance” in single individuals. In most of the studies conducted, it was determined that the glass ceiling perception is higher in those at the beginning of their careers and those with postgraduate education. It is noteworthy in the studies that the glass ceiling perception is higher in physicians and employees with management positions. In addition, there are studies showing that the glass ceiling perception is positively related to mobbing, career problems and power distance, and negatively related to organizational commitment and role model. As a result, the glass ceiling perception is seen at a moderate level in the health sector. However, higher scores are seen in women, married, at the beginning of their careers and employees with postgraduate education.

Keywords: Glass ceiling, Healthcare workers, Human resources

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SAĞLIK SEKTÖRÜNDE CAM TAVAN: SİSTEMATİK DERLEME

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ÖZET

Cam tavan, kadın çalışanların organizasyonlarda üst yönetim kademelerine yükselmelerini engelleyen görünmez bariyerleri ifade etmektedir. Çalışmanın amacı Türkiye'de sağlık sektöründe yapılmış olan cam tavan konulu çalışmaların sistematik olarak incelenmesidir. 27.01.2025 tarihinde Google Akademik, Web of Science ve EBSCO veri tabanlarında "cam tavan" ve "sağlık ya da hastane" İngilizce yayınlar için "glass ceiling" and "health or hospital" anahtar kelimeleri ile arama yapılmıştır. Toplam 2763 yayına ulaşılmıştır. Dışlanma kriterleri olarak; nitel çalışmalar, gri literatür kapsamında yayınlar (sözel bildiri ve tezler), öğrencilerle yapılan çalışmalar hariç tutulmuştur. Nihai olarak 16 çalışma analize dahil edilmiştir. Çalışmalardaki örneklem büyüklüğü en az 63, en fazla 708'dir. Çalışmaların %60'ı sadece kadınlara uygulanmıştır. Tüm çalışmalarda ölçek genel puan ortalaması 2,95 (min=1,94; max=3,98) bulunmuştur. Çalışmalar genel olarak kadınların kariyerlerinde karşılaştıkları engellerin daha belirgin olduğunu ve bu engellerin kişisel algılar, örgütsel politikalar ve toplumsal stereotipler gibi farklı boyutları kapsadığını göstermektedir. İnceleme sonucu 30-40 yaş aralığındaki çalışan bireylerin cam tavan sendromunu daha fazla deneyimlediği tespit edilmiştir. Evlilerde "Çoklu Rol Üstlenme" ve "Örgüt Kültürü ve Politikaları" boyutlarının yüksek puanlar alması göze çarparken, bekarlarda "Mesleki Ayrım" ve "Dayanıklılık" boyutlarını yüksek tespit eden çalışmalar mevcuttur. Yapılan araştırmaların çoğunda, kariyerinin başında olanların ve lisansüstü eğitim alanların cam tavan algısının daha yüksek olduğunu belirlenmiştir. Çalışmalarda hekimlerin ve yönetim görevi olan çalışanların cam tavan algısının daha fazla olduğu dikkat çekmektedir. Ayrıca cam tavan algısının; mobbing, kariyer sorunları ve güç mesafesiyle pozitif, örgütsel bağlılık ve rol modelle negatif ilişkili olduğunu gösteren çalışmalar mevcuttur. Sonuç olarak, sağlık sektöründe cam tavan algısı orta düzeyde görülmektedir. Bununla birlikte kadın, evli, kariyerin başında ve lisansüstü eğitim düzeyine sahip çalışanlarda daha yüksek puanlar görülmektedir.

Anahtar Kelimeler: Cam tavan, Sağlık çalışanları, İnsan kaynakları

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INCIDENTS of VIOLENCE AGAINST HEALTHCARE WORKERS in EMERGENCY SERVİCES in TÜRKİYE

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ABSTRACT

The aim was to analyze research on violence against healthcare workers in the emergency departments of hospitals in Türkiye from 2000 to 2024. A search was performed using Google Scholar and the National Thesis Center with the keywords "emergency department" and "violence" from 2000 onward, focusing on quantitative studies conducted in Türkiye. Only quantitative research studies conducted in Türkiye were evaluated, excluding reviews, book chapters, and letters to the editor. 3,439 studies were reviewed, and the titles and abstracts were examined. Studies that did not focus on violence against healthcare workers in emergency departments in Türkiye were excluded. The final 59 studies were analyzed for content; 2 were repetitive publications, 2 were reviews, 2 focused on patients and their relatives, and 29 were excluded because they investigated incidents of violence outside the emergency department. A total of 24 studies were analyzed, including 17 research articles and 7 theses. Three studies were conducted across Türkiye, five in Istanbul, three in Ankara, and the rest in various cities. Staff exposure to violence ranged from 52.1% to 100%, with over half experiencing multiple incidents. Perpetrators were identified as patients in 0.8% to 73.1% of cases and patient relatives in 44.4% to 94.4%. Types of violence reported included verbal violence (50.6-100%), physical violence (4.2-74.9%), psychological violence (3.9-35.2%), and sexual violence (0.5-15.9%). Training on violence prevention and communication skills varied from 0% to 84.1%. The highest incidence of violence occurred between 16:00 and 08:00, primarily due to long wait times, lack of education among patients and relatives, insufficient staffing, and substance influence. Variations in findings may be attributed to the differences in city locations, hospital ownerships, sizes, and densities. Studies that are inaccessible or published in various databases, as well as a lack of alternative study types, should be seen as limitations. Incidents of violence in emergency departments in Türkiye are common, with healthcare workers encountering multiple acts of violence throughout their careers. Systemic issues, such as long wait times due to overcrowding and insufficient healthcare personnel, often contribute to this violence. To prevent such incidents in healthcare settings, it is essential to develop policies and implement systemic improvements informed by relevant researches.

Keywords: Emergency department, Health services, Hospital management, Safety, Violence.

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TÜRKİYE'DE ACİL SERVİSLERDE SAĞLIK ÇALIŞANLARINA YÖNELİK ŞİDDET OLAYLARI

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ÖZET

2000-2024 yılları arasında Türkiye'deki hastanelerin acil servislerinde sağlık çalışanlarına yönelik şiddet olaylarını ele alan çalışmaların incelenmesi amaçlanmıştır. Google akademik ve Ulusal Tez Merkezinde "acil servis" ve "şiddet" kelimeleriyle 2000 yılından itibaren arama yapılmıştır. Türkiye'de yapılan, sadece nicel araştırma çalışmaları değerlendirilmiş, derleme, kitap bölümü, editöre mektup vb. çalışmalar hariç tutulmuştur. 3.439 çalışmaya ulaşılmış, çalışmaların başlıkları ve özetleri incelenmiş; Türkiye'de acil servislerde sağlık çalışanlarına yönelik şiddeti araştırmayan çalışmalar kapsam dışı tutulmuştur. Nihai 59 çalışma içerik bakımından incelenmiş; 2'si tekrarlayan yayın, 2'si derleme, 2'si hasta ve hasta yakınlarına yönelik çalışma, 29'u acil servis dışı şiddet olaylarını araştırdığı için değerlendirmeye alınmamıştır. Toplam 24 çalışma analize dahil edilmiştir; 17'si araştırma makalesi, 7'si tez çalışmasıdır. Üç çalışma Türkiye genelinde, 5'i İstanbul'da, 3'ü Ankara'da, diğerleri ise farklı şehirlerde gerçekleştirilmiştir. Personelin şiddete maruz kalma oranları %52,1-100 arasında değişmektedir ve yarısından fazlası çalışma hayatı boyunca birden fazla sayıda şiddet olayı yaşamıştır. Şiddet uygulayan kişi %0,8-73,1 arasında hasta, %44,4-94,4 hasta yakını olarak tanımlanmıştır. Uygulanan şiddet çeşidi incelendiğinde; sözel şiddet %50,6-100, fiziksel şiddet %4,2-74,9, psikolojik şiddet %3,9-35,2 ve cinsel şiddet %0,5-15,9 arasındadır. Çalışanların şiddeti önleme, iletişim becerileri, öfke ve öfke kontrolü gibi konularda eğitim alma oranları %0-84,1 oranında değişmektedir. Şiddetin en fazla gerçekleştiği zaman dilimi 16-08 saatleri arasıdır. Şiddet olayının gerçekleşme sebebi olarak en sık belirtilenler; uzun bekleme süresi, hasta ve yakınlarının eğitim eksikliği, personel yetersizliği, hastaların talepleri ve alkol-madde etkisidir. Çalışmaların farklı şehirlerde, farklı mülkiyete, büyüklüğe ve yoğunluğa sahip hastanelerde uygulanmış olması bulgularda farklılıkların olası sebebi olarak değerlendirilmektedir. Erişilemeyen, farklı veri tabanlarında yayınlanmış ya da diğer çalışma türlerinin dahil edilmemiş olması bir kısıtlılık olarak göz önünde bulundurulmalıdır. Türkiye'de acil servislerde şiddet olayları sıklıkla yaşanmakta, sağlık çalışanları iş hayatları boyunca birden fazla şiddet olayına maruz kalmaktadır. Şiddetin sebebi çoğunlukla aşırı kalabalık nedeniyle uzun bekleme süreleri ve yetersiz sayıda sağlık personeli gibi sistemsel eksikliklerdir. Sağlıkta şiddetin önlenebilmesi için bu yönde yapılan çalışmaların bulguları ışığında politikalar geliştirilmeli ve sistem düzenlemesi yapılmalıdır.

Anahtar Kelimeler: Acil servis, Güvenlik, Hastane yönetimi, Sağlık hizmeti, Şiddet.

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PROFESSIONAL SELECTION in SURGICAL TECHNICIAN: MOTIVATIONS and AFFECTING FACTORS

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ABSTRACT

Profession can be used to mean a permanent job that a person acquires as a field of work and does to earn a living. Surgical technician is a profession that has a critical role in the health sector and makes significant contributions to the successful performance of surgical procedures. The aim of this study is to examine the factors affecting the choice of the surgical technician profession and the students' perspectives on the profession. When the factors affecting the choice of a surgical technician profession are examined, it can be seen that personal, professional and environmental factors are important in the student's motivation for choosing a profession. In addition, Career Opportunities and Job Security, Vocational Interests and Skills, Social Status and Respect, Economic Factors, Challenges and Professional Expectations are among the headings that can be effective in choosing a profession. The method in this study; It is in the form of a literature review and the opinions of Toros University surgical technician students were also taken into account in choosing a profession and looking at the profession. As a result, choosing surgical technician as a profession is not only associated with economic gain, but also with the desire to contribute to healthcare, the desire to develop technical skills, and the motivation to help people. It is important for individuals who will choose this profession to carefully analyze the requirements of the profession and the opportunities it offers.

Keywords: Profession, Career selection, Surgical technicians

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CERRAHİ TEKNİKERLİKTE MESLEK SEÇİMİ: MOTİVASYONLAR VE ETKİLEYEN FAKTÖRLER

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ÖZET

Meslek kişinin çalışma alanı edindiği, geçimini sağlamak için yaptığı sürekli iş anlamında kullanılabilir. Cerrahi teknikerlik ise sağlık sektöründe kritik bir role sahip olan, cerrahi işlemlerin başarıyla gerçekleştirilmesinde önemli katkılar sağlayan bir meslek dalıdır. Bu çalışmanın amacı cerrahi teknikerlik mesleğin seçiminde etki eden faktörleri ve öğrencilerin mesleğe bakış açılarını incelemektir. Cerrahi teknikerliği meslek seçimini etkileyen faktörler incelendiğinde öğrencinin meslek olarak seçme motivasyonları kişisel, mesleki ve çevresel faktörlerin önemli olduğu görülebilir. Ayrıca Kariyer Olanakları ve İş Güvencesi, Mesleki İlgi ve Beceriler, Toplumsal Statü ve Saygınlık, Ekonomik Faktörler, Zorluklar ve Meslekle İlgili Beklentiler meslek seçiminde etkili olabilecek başlıklardandır. Bu çalışmada metod; literatür taraması şeklinde olup meslek seçiminde ve mesleğe bakışta Toros Üniversitesi cerrahi teknikerliği eğitim alan öğrenci düşünceleri de dikkate alınmıştır. Sonuç olarak cerrahi teknikerliği meslek olarak seçmek, sadece ekonomik kazanç değil aynı zamanda sağlık hizmetlerine katkıda bulunma isteği, teknik beceri geliştirme arzusu ve insanlara yardım etme motivasyonuyla da ilişkilidir. Bu mesleği tercih edecek bireylerin, mesleğin gerekliliklerini ve sunduğu fırsatları iyi analiz etmesi önemlidir.

Anahtar Kelimeler: Meslek, Meslek seçimi, Cerrahi teknikerler

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THE IMPORTANCE of SURGICAL TECHNICIANS in the OPERATING ROOM

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ABSTRACT

Surgical technicians (operating room technicians), who generally have an associate degree from a health services school, are among the indispensable professionals of the health sector. The aim of this study is to underline the importance and characteristics of this professional group. Surgical technicians have important roles such as preparing the medical equipment needed by surgeons, assisting the operation process and the physician, and carrying out tasks related to sterilization during the operation. Presence of surgical technicians in the health system; The Role in Teamwork can be grouped under headings such as Sterilization and Hygiene Management, Equipment and Tools Preparation, Patient Safety and Monitoring, Time Management and Efficiency, Training and Continuous Development, and Prevention of Surgical Errors. The method in this study; The literature review is in the form of analyzing the thoughts of students and graduates, and the opinions of professionals are also taken into account. As a result, these professionals are not only responsible for the preparation of the tool, but also take an active role in many areas such as patient safety, infection control, collaboration and efficiency. Surgical technicians follow best practices to ensure the safety of patients while helping surgeons successfully complete the operation. As a result, the training of surgical technicians and the correct definition of their roles contribute to the creation of a safer and more efficient surgery environment in the healthcare sector.

Keywords: Surgery, Surgical technicians, Role of the technician

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CERRAHİ TEKNİKERLERİN AMELİYATHANEDEKİ ÖNEMİ

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ÖZET

Genellikle sağlık hizmetleri yüksek okulu ön lisans mezunu olan cerrahi teknikerler (ameliyathane teknikeri), sağlık sektörünün vazgeçilmez profesyonelleri arasında yer almaktadırlar. Bu çalışmada amaç bu meslek grubunun öneminin ve özelliğinin altının çizilmesidir. Cerrahi teknikerleri cerrahların ihtiyaç duyduğu tıbbi araç gereçleri hazırlamak, operasyon sürecine ve hekime yardımcı olmak, operasyonda strelizasyon ile ilgili görevleri yürütmek gibi önemli rollere sahiptir. Cerrahi teknikerlerin sağlık sisteminde varlıkları; Ekip Çalışmasındaki Rolü, Sterilizasyon ve Hijyen Yönetimi, Ekipman ve Araç Gereç Hazırlığı, Hasta Güvenliği ve İzleme, Zaman Yönetimi ve Verimlilik, Eğitim ve Sürekli Gelişim, Cerrahi Hataların Önlenmesi gibi başlıklar altında toplanabilir. Bu çalışmada metod; literatür taraması, öğrenci ve mezunların düşüncelerinin analiz edilmesi şeklinde olup, meslek mensuplarının düşünceleri de gözetilmiştir. Sonuç olarak bu profesyoneller, sadece aracın hazırlanmasından sorumlu olmakla kalmaz, aynı zamanda hasta güvenliği, enfeksiyon kontrolü, iş birliği ve verimlilik gibi birçok alanda aktif rol alırlar. Cerrahi teknikerler, cerrahların başarıyla operasyonu tamamlamalarına yardımcı olurken, hastaların güvenliğini de sağlamak için en iyi uygulamaları takip ederler. Sonuç olarak, cerrahi teknikerlerin eğitimleri ve rollerinin doğru bir şekilde tanımlanması, sağlık sektöründe daha güvenli ve verimli bir ameliyat ortamının oluşmasına katkıda bulunur.

Anahtar Kelimeler: Cerrahi, Cerrahi teknikerler, Teknikerin görevi

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COMPARISON of DIFFERENT ARTIFICIAL INTELLIGENCE TOOLS' ANSWERS to QUESTIONS RELATED to EARLY INTERVENTION: CHATGPT vs. GEMINI

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ABSTRACT

This study aimed to assess the quality and readability of ChatGPT and Gemini's responses to frequently asked questions about early intervention for individuals with at-risk infants. Ten frequently asked questions about early intervention were selected by 3 researchers) from a list generated by ChatGPT and Gemini. Questions were sent to ChatGPT version 4.0 and Gemini 1.5 and initial responses were recorded without follow-up queries. Ten independent experts .The quality of ChatGPT and Gemini's responses was assessed using a four-grade rating system. Readability levels were analysed using the Flesch-Kincaid Grade Level through WordCalc software. One of the answers given by ChatGPT was of higher quality than Gemini (p=0.025), while one answer given by Gemini was of higher quality than ChatGPT (p=0.033). The answers to the other questions were of similar quality with Gemini having a lower level quality. This study compares the quality and readability of the answers given by AI-based language models to demonstrate their potential to appeal to different user groups. While the models generally provide answers of similar quality, the readability of ChatGPT-4.0 is more suitable for general users, while the technical language of Gemini is more suitable for professionals. The findings provide a valuable basis for understanding the impact of AI tools in health communication.

Keywords: Artificial intelligence, Early intervention, Quality of answers, Readability

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FARKLI YAPAY ZEKA ARAÇLARININ ERKEN MÜDAHALE İLE İLGİLİ SORULARA VERDİĞİ CEVAPLARIN KARŞILAŞTIRILMASI: CHATGPT VS GEMİNİ

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ÖZET

Bu çalışmanın amacı, ChatGPT ve Gemini'nin riskli bebeği olan bireylere yönelik erken müdahale hakkında sıkça sorulan sorulara verdiği yanıtların kalitesini ve okunabilirliğini değerlendirmektir. ChatGPT ve Gemini tarafından oluşturulan bir listeden erken müdahale hakkında sıkça sorulan 10 soru 3 araştırmacı tarafından seçilmiştir. Sorular ChatGPT sürüm 4.0 ve Gemini 1.5'e gönderildi ve ilk yanıtlar takip sorguları olmadan kaydedildi. On bağımsız uzman ChatGPT ve Gemini'nin yanıtlarının kalitesini dört dereceli bir derecelendirme sistemi kullanılarak değerlendirilmiştir. Okunabilirlik seviyeleri WordCalc yazılımı aracılığıyla Flesch-Kincaid Grade Level kullanılarak analiz edilmiştir. ChatGPT tarafından verilen cevaplardan biri Gemini'den daha yüksek kalitede iken (p=0.025), Gemini tarafından verilen cevaplardan biri ChatGPT'den daha yüksek kalitede idi (p=0.033). Diğer sorulara verilen cevaplar benzer kalitede olup Gemini daha düşük seviyede kaliteye sahipti. Bu çalışma, farklı kullanıcı gruplarına hitap etme potansiyellerini göstermek için yapay zeka tabanlı dil modelleri tarafından verilen cevapların kalitesini ve okunabilirliğini karşılaştırmaktadır. Modeller genellikle benzer kalitede cevaplar verirken, ChatGPT-4.0'ın okunabilirliği genel kullanıcılar için daha uygunken, Gemini'nin teknik dili profesyoneller için daha uygundur. Bulgular, yapay zeka araçlarının sağlık iletişimindeki etkisini anlamak için değerli bir temel sağlamaktadır.

Anahtar Kelimeler: Yapay zeka, Erken müdahale, Cevap kalitesi, Okunabilirlik

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AN EVALUATION of the TURKISH HEALTH SYSTEM and HEALTH PROBLEMS

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ABSTRACT

Policy makers and researchers are conducting many studies on the most effective solution for the efficient use of resources allocated to health and the cost-effective management of health services. This study aims to evaluate the problems in the Turkish healthcare system and the possible solutions to these problems. The study uses a descriptive approach to analyze the current situation of the Turkish health system, using data on the health system and health expenditure between 2003 and 2023. The study identifies the policies that have been implemented to improve the coverage of social insurance, to ensure the effective use of public health expenditure, to reduce the share of out-of-pocket health expenditure, and to remove barriers to access to health services. Although important steps have been taken in reforming the Turkish health system, particularly in the area of social protection, there are still areas that need to be improved to achieve the global goal of universal health coverage.

Keywords: Health, Turkish health system, Health expenditures.

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TÜRK SAĞLIK SİSTEMİ VE SAĞLIKTA YAŞANAN SORUNLAR ÜZERİNE BİR DEĞERLENDİRME

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ÖZET

Sağlığa ayrılan kaynakların efektif kullanımı ve sağlık hizmetlerinin maliyet etkin bir şekilde yönetilmesi için politika yapıcılar ve araştırmacılar en etkin çözümün ne olacağı yönünde pek çok çalışma yürütmektedir. Bu çalışmanın amacı Türk sağlık sisteminde yaşanan sorunları ve bu sorunlara yönelik çözümlerin neler olabileceğini değerlendirmektir. Çalışmada 2003-2023 yılları arasında sağlık sistemine ve sağlık harcamalarına yönelik verilerden yararlanarak Türk sağlık sisteminin mevcut durumu betimsel bir yaklaşım ile analiz edilmiştir. Çalışmada, sosyal güvenliğin kapsamının iyileştirilmesi, kamusal sağlık harcamalarının etkin kullanımının sağlanması, cepten yapılan sağlık harcamalarının payının düşürülmesi ile sağlık hizmetlerine erişimin önündeki engellerin kaldırılması için uygulanan politikalara değinilmiştir. Türk sağlık sisteminde gerçekleşen reformist adımlar ile özellikle sosyal güvenliğin sağlanması bağlamında önemli adımlar gerçekleştirilmiş olsa da küresel olarak hedeflenen evrensel sağlık kapsayıcılığının gerçekleştirilmesi için henüz geliştirilmesi gereken alanlar bulunmaktadır.

Anahtar Kelimeler: Sağlık, Türk sağlık sistemi, Sağlıkta harcamalar

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COMPARATIVE ANALYSIS of FINANCIAL HEALTH and HEALTHCARE EXPENDITURES: THE CASES of the USA, GERMANY, and JAPAN

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ABSTRACT

This study aims to compare the financial health indicators and healthcare expenditures of the USA, Germany, and Japan and evaluate their impact on individual well-being. By analyzing data from 2010 to 2020, this study examines pre- and post-pandemic financial and healthcare trends. A descriptive statistical analysis was conducted using data from OECD, the World Bank, and the IMF. Financial health indicators such as savings rate, debt service ratio, and insurance ownership were compared with healthcare expenditure indicators, including the share of healthcare expenditures in GDP, per capita healthcare spending, and health outcomes. Germany (11.2%) and Japan (10.5%) have higher savings rates than the USA (7.5%). The USA has the highest debt service ratio (9.8%), while Germany (6.4%) and Japan (5.9%) have lower levels. Post-pandemic savings rates have increased, but the USA's debt levels remain high. The USA has the highest per capita healthcare expenditure (10,948 USD), while Germany (5,705 USD) and Japan (4,150 USD) spend significantly less. Healthcare expenditures as a share of GDP are 16.8% in the USA, 11.7% in Germany, and 11.0% in Japan. Despite high healthcare expenditures, the USA exhibits weaker health outcomes compared to Germany and Japan. Germany and Japan demonstrate greater financial stability with higher savings and lower debt levels, making them more financially resilient. In contrast, the USA's high debt service ratio increases financial vulnerability. Regarding healthcare spending, the USA's significantly higher expenditures do not translate into better health outcomes, indicating inefficiencies in the system. Germany and Japan achieve better health outcomes with more efficient healthcare spending. Post-pandemic trends indicate a general increase in savings behavior, yet the USA's debt burden remains a critical concern. Germany and Japan exhibit stronger financial health structures and more efficient healthcare expenditure management. However, the USA, despite its high healthcare spending, fails to achieve better health outcomes. Although post-pandemic savings trends have improved, the USA's debt burden remains a significant issue. This study highlights the importance of sustainable financial and healthcare policies in improving individual well-being.

Keywords: Financial Health Indicators, Healthcare Expenditure Indicators, Savings Rate, USA, Germany, Japan.

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FİNANSAL SAĞLIK HARCAMALARININ KARŞILAŞTIRMALI ANALİZİ: ABD, ALMANYA VE JAPONYA ÖRNEĞİ

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ÖZET

Bu çalışma, ABD, Almanya ve Japonya'nın finansal sağlık göstergeleri ile sağlık harcamalarının bireylerin refahı üzerindeki etkisini karşılaştırmayı amaçlamaktadır. 2010-2020 yılları arasındaki veriler incelenerek, pandemi öncesi ve sonrası finansal ve sağlık trendleri değerlendirilmiştir. Çalışmada, OECD, Dünya Bankası ve IMF verileri kullanılarak betimsel istatistiksel analiz yapılmıştır. Tasarruf oranı, borç servis oranı, sigorta sahipliği gibi finansal sağlık göstergeleri ile sağlık harcamalarının GSYİH içindeki payı, kişi başına sağlık harcaması ve sağlık çıktıları karşılaştırılmıştır. Almanya (%11.2) ve Japonya (%10.5) daha yüksek tasarruf oranlarına sahipken, ABD'de bu oran %7.5'tir. ABD'de borç servis oranı (%9.8) en yüksek seviyededir, Almanya'da %6.4, Japonya'da %5.9'dur. Pandemi sonrası tasarruf oranları artmış, ancak ABD'de borç oranı hala yüksektir. ABD kişi başına sağlık harcamasında (10.948 USD) en yüksek seviyeye sahipken, Almanya 5.705 USD, Japonya 4.150 USD harcamaktadır. Sağlık harcamalarının GSYİH içindeki payı ABD'de %16.8, Almanya'da %11.7, Japonya'da %11.0'dır. ABD'nin yüksek sağlık harcamalarına rağmen sağlık göstergeleri daha düşük seviyededir. Almanya ve Japonya yüksek tasarruf ve düşük borç seviyeleriyle finansal olarak daha dayanıklıdır. ABD'de yüksek borç servis oranı finansal kırılganlığı artırmaktadır. Sağlık harcamalarına bakıldığında ABD'nin yüksek harcamalarına rağmen sağlık göstergelerinde geride kalması sistemde verimsizlik olduğunu göstermektedir. Almanya ve Japonya sağlık harcamalarını daha verimli kullanarak daha iyi sağlık sonuçları elde etmektedir. Pandemi sonrası tasarruf eğiliminde genel bir artış gözlemlenirken, borçlanma oranları ABD'de dikkat çekici seviyede kalmıştır. Almanya ve Japonya, daha güçlü finansal sağlık yapısına ve verimli sağlık harcamalarına sahiptir. ABD ise yüksek sağlık harcamalarına rağmen düşük sağlık sonuçları elde etmektedir. Pandemi sonrası tasarruf eğilimleri artarken, ABD'de borç yükü hala önemli bir sorun olarak varlığını sürdürmektedir. Çalışma, sürdürülebilir finansal ve sağlık politikalarının bireylerin refahı üzerindeki önemini vurgulamaktadır.

Anahtar Kelimeler: Finansal sağlık göstergeleri, Sağlık harcaması göstergeleri, Tasarruf oranı, ABD, Almanya, Japonya.

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EFFECTS of CAFFEINE-CONTAINING FOODS on FETAL DEVELOPMENT DURING PREGNANCY

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ABSTRACT

The aim of this study is to discuss the effects of caffeine consumption on pregnant and fetal health. Caffeine crosses the blood-brain barrier and inhibits adenosine receptors A1 and A2A with its stimulating effect, preventing adenosine-related depression. Caffeine is highly absorbed from the digestive system and reaches its highest plasma levels within an hour. Caffeine affects adenosine receptors, causing a fluctuation in catecholamines and an increase in vascular tone and systolic blood pressure. As a result, it can lead to placental vasoconstriction, which causes intrauterine fetal hypoxia. It has been observed that there is a significant increase in the duration of wakefulness, fetal heart rate and fetal movements in the fetuses of pregnant women who consume high doses of caffeine. However, these results show that maternal caffeine consumption alters fetal functions and shows its effect on the fetal environment. It has been determined that caffeine consumption of 150 mg per day increases the epinephrine levels of mothers, which in turn increases the fetal respiratory rate. The vasoconstrictive effects of caffeine increase the risk of spontaneous abortion, fetal death, intrauterine growth retardation, low birth weight and premature birth. Pregnant women who consumed low-flavonol chocolate experienced preeclampsia in the later stages of pregnancy. Caffeine increases the risk of fetal and perinatal death by causing gestational hypertension. Animal studies have shown that high doses of caffeine have a teratogenic effect, causing malformations such as cleft palate and missing fingers, and the musculoskeletal system. During pregnancy, the mother and fetus encounter many teratogenic substances or environmental factors. One of these substances is caffeine. In order to protect fetal health, it is important for the mother to be informed about staying away from these factors and for pregnant women at risk to be closely monitored by healthcare personnel.

Keywords: Caffeine, Pregnancy, Fetal health

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GEBELİKTE KAFEİN İÇEREN GIDALARIN FETAL GELİŞİM ÜZERİNDEKİ ETKİLERİ

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ÖZET

Bu çalışmanın amacı kafein tüketiminin gebe ve fetal sağlık üzerindeki etkilerini tartışmaktır. Kafeinin kan beyin bariyerini geçerek uyarıcı etkisi ile adenozin reseptörleri A1 ve A2A'yı inhibe ederek adenozine bağlı depresyonunu engeller. Kafein sindirim sisteminden yüksek oranda emilir ve bir saat içinde en yüksek plazma seviyesine ulaşır. Kafein adenozin reseptörlerini etkileyerek katekolaminlerin dalgalanmasına ve damar tonüsünün ve sistolik kan basıncında artışa neden olur. Bunun sonucunda plasenta vazokonstriksiyonuna yol açabilir bu da intrauterin fetal hipoksiye neden olur. Yüksek dozda kafein tüketen gebelerin fetüslerinde uyanık kalma süresinde, fetal kalp hızı sayısında ve fetal hareketlerde önemli bir artış olduğu görülmüştür. Bununla birlikte, bu sonuçlar maternal kafein tüketiminin fetal fonksiyonları değiştirdiğini ve fetüsün çevresi üzerindeki etkisini gösterdiğini göstermektedir . Günlük 150 mg'dan kafein tüketimi annelerin epinefrin düzeylerini arttırdığı, bunun da fetal solunum hızını arttırdığı tespit edilmiştir. Kafeinin vazokonstrüktif etkilerinin spontan abortus, fetal ölüm, intrauterin gelişme geriliği, düşük doğum ağırlığı ve prematüre doğum riskinde artışa neden olur. .Düşük flavonollü çikolata tüketen gebeler hamileliğin ileri evrelerinde preeklampsi yaşamışlardır. Kafein gebelik hipertansiyonuna yol acarak fetal ve perinatal ölüm riskini arttırır .Yapılan hayvan çalışmalarında yüksek dozda kafeinin, teratojenik etki göstererek yarık damak, eksik parmak gibi malformasyonlar oluşturduğu ,kas iskelet sistemi. Gebelikte anne ve fetüs çok sayıda teratojen madde veya çevresel etkenle karşılaşır.Bu maddelerden biri de kafeindir.Fetal sağlığın korunması için annenin bu etkenlerden uzak durması konusunda biliçlendirilmesi ,risk durumundaki gebelerin sağlık personeli tarafıdan yakından izlenmesi önemlidir.

Anahtar Kelimeler: Kafein, Gebelik, Fetal sağlık

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POSTOPERATİVE SLEEP QUALİTY of PATİENTS UNDERGOİNG OPEN HEART SURGERY and THE EFFECT of SELECTED FACTORS on SLEEP QUALİTY*

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ABSTRACT

The objective of the study was to examine sleep quality after surgery in patients undergoing open heart surgery and the effects of selected factors, such as pain and anxiety level, on sleep quality. This study was descriptive, cross-sectional, and correlational. The sample consisted of 70 patients who had open heart surgery for the first time in the cardiovascular surgery clinic and who were hospitalized in the cardiovascular surgery clinic for at least one day after surgery. The data were collected between April and June 2024. Richard's Campbell Sleep Scale and Visual Analog Scale-Pain and Visual Analog Scale-Anxiety were used in the study. Correlation and regression analysis were used to analyze the data. The mean age of the patients was 62,00±9,78 years. 75,7% of the patients were male. 65,7% of the patients had coronary artery bypass graft surgery. 57,1% of the patients reported not sleeping enough in the clinic. 88,6% of the patients reported that their sleep was interrupted at night. Only 7,1% of the patients were found to have good sleep quality. The patients' mean score on the Richard's Campbell Sleep Scale was 36,31±22,17. The postoperative pain score of the patients was 3,52±2,79, and the anxiety level was 2,60±3,15. When the relationship between the sleep quality of the patients and the anxiety and pain scores was examined, it was found that the sleep scale had a negative relationship with the pain score and the anxiety score. It was determined that patients' anxiety levels and pain intensity significantly and negatively predicted night sleep. Anxiety level and pain intensity explained 15,4% of patients' sleep quality. Patients' postoperative sleep quality was poor. Postoperative pain intensity and anxiety level predicted sleep quality. It is predicted that nurses' implementation of interventions to reduce postoperative pain and anxiety will increase patients' sleep quality.

Keywords: Cardiac surgery, Sleep, Anxiety, Pain

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AÇIK KALP CERRAHİSİ GEÇİREN HASTALARIN AMELİYAT SONRASI UYKU KALİTESİ VE SEÇILMIŞ FAKTÖRLERİN UYKU KALİTESİNE ETKİSİ*

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ÖZET

Bu çalışmanın amacı, açık kalp cerrahisi geçiren hastalarda ameliyat sonrası uyku kalitesini ve seçilmiş faktör olan ağrı varlığı ve anksiyete düzeyinin uyku kalitesine etkisini incelemektir. Bu araştırma tanımlayıcı, kesitsel ve ilişki arayıcı tiptedir. Kalp-damar cerrahisi kliniğinde ilk kez açık kalp cerrahisi olan, ameliyat sonrası en az bir gün kalp-damar cerrahi kliniğinde yatan 70 hasta araştırmanın örneklemini oluşturmuştur. Araştırmanın verileri Nisan-Haziran 2024 tarihlerinde toplanmıştır. Araştırmada hastalara Richard's Campbell Uyku Ölçeği, Vizüel Analog Skala- ağrı, Vizüel Analog Skala-Anksiyete kullanılmıştır. Verilerin analizinde korelasyon ve regresyon analizi kullanılmıştır. Hastaların yaş ortalaması 62,00±9,78 yıldır. Hastaların %75,7 si erkekti. Hastaların %65,7'si koroner arter baypas greft ameliyatı olmuştur. Hastaların %57,1'i klinikte yeterince uyuyamadığını bildirmiştir. Hastaların %88,6'sı gece uykusunun bölündüğünü bildirmiştir. Hastaların sadece %7,1'inin uyku kalitesinin iyi olduğu saptanmıştır. Hastaların Richard's Campbell Uyku Ölçeği puan ortalaması 36,31±22,17'dir. Hastaların ameliyat sonrası ağrı puanı 3,52±2,79, anksiyete düzeyi 2,60±3,15 olarak saptanmıştır. Hastaların uyku kalitesi ile anksiyete ve ağrı puanları arasında ilişki incelendiğinde uyku ölçeğinin ağrı puanı(r:-0,307, p:0,01) ve anksiyete puanı (r: -0,317, p:0,007) ile negatif yönde ilişkisinin olduğu saptanmıştır. Hastaların anksiyete düzeylerinin (β: -0,253, p= 0,03) ve ağrı şiddetlerinin (β: -0,240, p= 0,04) anlamlı ve negatif yönde gece uykusunu yordadığı saptanmıştır. Anksiyete düzeyi ve ağrı şiddeti hastaların uyku kalitesinin %15,4'ünü açıklamaktadır. Hastaların ameliyat sonrası uyku kaliteleri kötüdür. Ameliyat sonrası ağrı şiddeti ve anksiyete düzeyi uyku kalitesini yordamaktadır. Hemşirelerin ameliyat sonrası ağrıyı ve anksiyeteyi azaltmaya yönelik girişimleri uygulamasının hastaların uyku kalitesini artıracağı öngörülmektedir.

Anahtar Kelimeler: Kalp cerrahisi, Uyku, Anksiyete, Ağrı

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INVESTIGATION of STRESS LEVELS and REACTIONS of CAREGIVERS of PATIENTS UNDERGOING ORTHOPEDIC SURGERY on the DAY of SURGERY*

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ABSTRACT

The objective of the study was to examine the stress levels and reactions of caregivers of patients undergoing orthopedic surgery on the day of surgery. This study was descriptive, cross-sectional, and correlational. The sample consists of 65 caregivers who provide at least 24-hour care to patients who are admitted to the orthopedic clinic for the first time. The data were collected between April and June 2024. The caregivers were administered the Caregiver Stress Index and Caregiver Response Assessment Scale, and their vital signs were measured. Correlation analysis was used to analyze the data. The average age of the caregivers was 49,06±13,16 years. 64,6% of the caregivers were female, and 46,2% are parents. The caregivers provide care for an average of 6 days. The caregivers' blood pressure, pulse, and peripheral oxygen saturation values were within the normal range. The score stress index of the caregivers on the day of surgery is 5,03±3,06. It was determined that 27,7% of the caregivers were stressed according to the stress index scale. According to the Caregiver Response Assessment Scale, the self-esteem sub-dimension mean score was lower. The lack of family support sub-dimension score was the highest. A relationship was found between the number of caregiving days and the caregiver's stress level. A negative relationship was found only between the peripheral oxygen saturations of the caregivers and the caregiver stress index scores (r: -0,257, p: 0,03). Three out of ten caregivers were stressed. The lack of family support negatively affected them, and their stress increased as the duration of caregiving increased.

Keywords: Caregivers, Stress, Orthopedic surgery

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ORTOPEDİ AMELİYATI OLACAK HASTALARA BAKIM VERENLERİN AMELİYAT GÜNÜ STRES DÜZEYLERİNİN VE TEPKİLERİNİN İNCELENMESİ*

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ÖZET

Bu araştırmanın amacı, ortopedi ameliyatı olacak hastaların bakım verenlerinin ameliyat günü stres düzeyleri ve tepkilerinin incelenmesidir. Bu araştırma tanımlayıcı, kesitsel ve ilişki arayıcı tiptedir. Ortopedi kliniğine ilk kez yatan hastalara en az 24 saat bakım veren 65 bakım veren araştırmanın örneklemini oluşturmuştur. Araştırmanın verileri Nisan-Haziran 2024 tarihlerinde toplanmıştır. Araştırmada Bakım verenlere Bakım veren stres indeksi ve Bakım Verici Tepki Değerlendirme Ölçeği uygulanmıştır. Bakım verenlerin yaşam bulguları ölçülmüştür. Verilerin analizinde korelasyon analizi kullanılmıştır. Bakım verenlerin yaş ortalaması 49,06±13,16 yıldır. Bakım verenlerin %64,6'sı kadın ve %46,2'si ebeveyndir. Bakım verenler ortalama 6 gün bakım vermektedir. Bakım verenlerin kan basıncı, nabız ve periferik oksijen saturasyonu değerleri normal aralıktaydı. Bakım verenlerin ameliyat günü stres indeksi ortalaması 5,03±3,06 dır. Bakım verenlerin %27,7'sinin stres indeksi ölçeğine göre stresli olduğu saptanmıştır. Bakım Verici Tepki Değerlendirme Ölçeğine göre benlik saygısı alt boyut puan ortalaması en düşüktür. Aile desteğinin olmaması alt boyutu puanı en yüksektir. Bakım verilen gün sayısı ile bakım veren stres düzeyi arasında bir ilişki bulunmuştur. Bakım verenlerin sadece periferik oksijen satürasyonları ile bakım veren stres indeksi puanları arasında negatif yönlü bir ilişki saptanmıştır (r:-0,257, p:0,03). On bakım verenden üçünün stresli olduğu saptanmıştır. Bakım verenlerin aile desteğinin olmamasına bağlı olumsuz etkilendiği, bakım verme süresi artıkça bakım verenin stresinin arttığı görülmektedir.

Anahtar Kelimeler: Bakım verenler, Stres, Ortopedi ameliyatları

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REVIEW of SCALE STUDIES ASSESSING the COMMUNICATION COMPETENCE of PATIENTS and HEALTHCARE PROFESSIONALS in HEALTH SERVICES

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ABSTRACT

This study examines the scales developed to assess the communication skills of patients, doctors, and healthcare professionals in healthcare services. The scales utilized in these studies are designed to evaluate individuals' communication competence, improve healthcare services, and contribute to educational processes. As part of this review, studies on the development and evaluation of health communication scales were analyzed. The studies were examined through a comparative analysis in terms of the scales' objectives, development processes, psychometric evaluations, and areas of application. Scales assessing healthcare professionals' communication skills in medical consultations and patient interactions were reviewed. Most of these scales focus on evaluating empathy, information exchange, and active listening skills. A study aimed at measuring communication competence through simulated patient interviews sought to assess students' ability to establish accurate and effective communication with patients. Research examining the quality of doctor-patient communication identified key challenges such as language barriers, lack of empathy, and deficiencies in information sharing. Studies conducted in private hospitals explored the impact of communication barriers on patient satisfaction. Communication assessment scales in healthcare serve as effective tools for evaluating and improving individuals' communication skills. Scales developed for both healthcare professionals and students contribute to educational processes and enhance doctor-patient relationships. Scales developed for nursing and medical students provide guidance in assessing and improving communication skills. When incorporated into the training of healthcare professionals, these tools can enhance patient satisfaction and improve the quality of healthcare services. Doctor-patient communication scales help identify factors affecting patient trust and treatment adherence. Research findings emphasize that doctors' levels of empathy and clarity significantly influence patients' trust in healthcare services.The adaptation of cross-cultural scales is crucial for ensuring accessibility and applicability on a global scale. However, each scale's applicability across different healthcare systems and cultural settings must be carefully evaluated.Future research should focus on integrating communication assessment scales with digital health technologies. The evaluation of communication skills through mobile health applications and telemedicine services could offer innovative approaches to improving healthcare communication.

Keywords: Health services, Communication competence, Patients, Healthcare professional

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SAĞLIK HİZMETLERİNDE HASTALARIN VE SAĞLIK ÇALIŞANLARININ İLETİŞİM YETERLİLİĞİNİ DEĞERLENDİREN ÖLÇEKLİ ÇALIŞMALARIN İNCELENMESİ

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ÖZET

Bu çalışma, sağlık hizmetlerinde hasta, doktor ve sağlık profesyonellerinin iletişim becerilerini değerlendirmek için geliştirilen ölçekleri incelemektedir. Bu çalışmalarda kullanılan ölçekler, bireylerin iletişim yeterliliğini değerlendirmek, sağlık hizmetlerini iyileştirmek ve eğitim süreçlerine katkıda bulunmak amacıyla tasarlanmıştır. Bu derleme kapsamında, sağlık iletişimi ölçeklerinin geliştirilmesi ve değerlendirilmesine yönelik çalışmalar analiz edilmiştir. Çalışmalar, ölçeklerin amaçları, geliştirme süreçleri, psikometrik değerlendirmeleri ve kullanım alanları açısından karşılaştırmalı bir analiz yoluyla incelenmiştir. Tıbbi görüşmeler ve hasta etkileşimlerinde sağlık profesyonellerinin iletişim becerilerini değerlendiren ölçekler gözden geçirilmiştir. Bu ölçeklerin çoğu empati, bilgi paylaşımı ve aktif dinleme becerilerini değerlendirmeye odaklanmaktadır. Simüle hasta görüşmeleri yoluyla iletişim yetkinliğini ölçmeyi amaçlayan bir çalışma, öğrencilerin hastalarla doğru ve etkili iletişim kurma becerilerini değerlendirmeyi hedeflemiştir. Doktor-hasta iletişiminin kalitesini inceleyen araştırmalar, dil bariyerleri, empati eksikliği ve bilgi paylaşımındaki yetersizlikler gibi temel zorlukları tespit etmiştir. Özel hastanelerde yürütülen çalışmalar, iletişim engellerinin hasta memnuniyeti üzerindeki etkisini araştırmıştır. Sağlık hizmetlerinde kullanılan iletişim değerlendirme ölçekleri, bireylerin iletişim becerilerini değerlendirmek ve geliştirmek için etkili araçlar sunmaktadır. Hem sağlık profesyonelleri hem de öğrenciler için geliştirilen ölçekler, eğitim süreçlerine katkı sağlamakta ve doktor-hasta ilişkisini güçlendirmektedir. Hemşirelik ve tıp öğrencileri için geliştirilen ölçekler, iletişim becerilerinin değerlendirilmesi ve geliştirilmesinde rehberlik sağlamaktadır. Sağlık profesyonellerinin eğitimine entegre edildiğinde, bu araçlar hasta memnuniyetini artırabilir ve sağlık hizmetlerinin kalitesini iyileştirebilir. Doktor-hasta iletişimini değerlendiren ölçekler, hasta güvenini ve tedaviye uyumu etkileyen faktörleri belirlemede yardımcı olmaktadır. Araştırma bulguları, doktorların empati ve açıklık düzeylerinin, hastaların sağlık hizmetlerine olan güvenini önemli ölçüde etkilediğini vurgulamaktadır. Kültürlerarası ölçeklerin adaptasyonu, sağlık hizmetlerinin küresel ölçekte erişilebilirliğini ve uygulanabilirliğini sağlamak açısından kritik öneme sahiptir. Ancak, bu ölçeklerin farklı sağlık sistemleri ve kültürel bağlamlardaki uygulanabilirliği dikkatle değerlendirilmelidir. Gelecekteki araştırmalar, iletişim değerlendirme ölçeklerinin dijital sağlık teknolojileriyle entegrasyonuna odaklanmalıdır. Mobil sağlık uygulamaları ve tele-sağlık hizmetleri aracılığıyla iletişim becerilerinin değerlendirilmesi, sağlık iletişimini geliştirmek için yenilikçi yaklaşımlar sunabilir.

Anahtar Kelimeler: Sağlık hizmetleri, İletişim yetkinliği, Hasta ve sağlık çalışanı

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HIV SEROPREVALENCE in VAN PROVİNCE: A THREE-YEAR RETROSPECTİVE ANALYSİS

Kübra ERDEM

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ABSTRACT

Turkey is among the European countries with the lowest HIV-1/AIDS prevalence. This study aimed to determine the HIV test request rates in Van, a province on Turkey's eastern border, the frequency of reactivity detected by macroELISA tests, and the epidemiological profile of individuals with confirmed positive results. In this retrospective study, Anti-HIV ELISA tests conducted at Van Training and Research Hospital between January 2022 and December 2024 were analyzed using hospital database records. All serum samples were tested with fully automated macroELISA systems. Patient data, including age, gender, the department requesting the test, and confirmatory test results, were evaluated. Over the three-year period, a total of 26,450 Anti-HIV ELISA tests were performed in our laboratory, with 203 (0.76%) showing reactivity. Confirmatory testing diagnosed 76 patients (37.4%) with HIV infection. Of these, 64 (84.3%) were male, and 12 (15.7%) were female. The mean age of male patients was 38.5 years (range: 20–68), while the mean age of female patients was 35.3 years (range: 3–61). The number of confirmed HIV-positive cases increased over time, with 2 (0.027%) cases in 2022, 29 (0.32%) in 2023, and 45 (0.43%) in 2024. Although HIV prevalence remains low in Turkey, our study indicates an increasing trend in the number of HIV diagnoses in Van province over the years. This finding highlights the continued importance of ELISA tests as a primary screening tool for early diagnosis and monitoring.

Keywords: Epidemiology, HIV/AIDS, Screening test.

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VAN İLİNDE HIV SEROPOZİTİFLİĞİ: ÜÇ YILLIK RETROSPEKTİF ANALİZ

Kübra ERDEM

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ÖZET

Avrupa'da HIV-1/AIDS prevalansının en düşük olduğu ülkelerden biri olan Türkiye'de, doğu sınır ili Van'a ait HIV test istem oranlarını, makroELISA testleriyle saptanan reaktivite sıklığını ve doğrulama testi pozitif çıkan bireylerin epidemiyolojik profilini belirlemek amaçlanmıştır. Bu çalışmada, Ocak 2022 - Aralık 2024 tarihleri arasında Van Eğitim ve Araştırma Hastanesi'nde çalışılmış Anti-HIV ELISA testleri hastane veritabanı üzerinden incelendi. Tüm serum örnekleri tam otomatik makroELISA cihazları kullanılarak analiz edildi. Hastaların yaş, cinsiyet, test isteminin yapıldığı birim ve doğrulama test sonuçları değerlendirildi. Üç yıllık süreçte laboratuvarımızda toplam 26.450 Anti-HIV ELISA testi çalışılmış olup, bunların 203'ünde (%0,76) reaktivite saptanmıştır. Doğrulama testi pozitif çıkan ve HIV enfeksiyonu tanısı alan hasta sayısı 76 (%37,4) olarak belirlenmiştir. Bu hastaların 64'ü (%84,3) erkek, 12'si (%15,7) kadındır. Erkek hastaların ortalama yaşı 38,5 yıl (20-68 yaş aralığı), kadın hastaların ortalama yaşı ise 35,3 yıl (3-61 yaş aralığı) olarak hesaplanmıştır. Yıllara göre HIV enfeksiyonu tanısı alan hasta sayıları 2022'de 2 (%0,027), 2023'te 29 (%0,32), 2024'te ise 45 (%0,43) olarak tespit edilmiştir. Türkiye'de HIV prevalansı halen düşük olmakla birlikte, çalışmamız Van ilinde yıllar içinde HIV tanısı alan hasta sayısında artış eğilimi olduğunu göstermektedir. Bu durum, erken tanı ve takip süreçlerinde ELISA testlerinin tarama yöntemi olarak önemini koruduğunu ortaya koymaktadır.

Anahtar Kelimeler: Epidemiyoloji, HIV/AIDS, Tarama testleri.

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EVALUATION of ANTINUCLEAR ANTIBODY (ANA) IMMUNOFLUORESCENCE PATTERNS of CLINICAL SAMPLES

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ABSTRACT

Antinuclear antibodies (ANAs) target intracellular antigens and may indicate the systemic autoimmune disorders. The inspection of ANA patterns is essential for the diagnosis and management of systemic autoimmune disorders. This study aims to assess ANA samples gathered from many clinics over the course of one year. The study included ANA IFA results from 5,120 patients collected from various clinics between January 1, 2024, and December 31, 2024. The ANA test was conducted using the Aesku İFA, and the patterns were assessed by three experienced microbiologists. ANA pattern assessments were conducted using the latest AC codes. Of the patients, 3230 (63%) were women, 1088 (21%) were men, and 802 (16%) were children. ANA positivity was detected in 1040 (20.3%) of the samples. In women, the positivity of autoantibodies was higher compared to men and children ($p<0.001$). ANA positivity was higher in girls than in boys ($p<0.001$). In 750 (72.1%) of the samples, a nuclear pattern was observed; in 160 (15.4%), a cytoplasmic pattern; in 19 (1.8%), a mitotic pattern; and in 111 (10.7%), more than one pattern (mixed) was observed. The most frequently detected patterns were homogeneous (AC-1) (30.6%), fine speckled (AC-4) (13.4%), and dense fine speckled (AC-2) (11.1%). The most frequently identified cytoplasmic pattern was the reticular pattern (AC-21) (9.7%). The most frequently identified mitotic pattern was the midbody (AC-27) (1.1%). In pediatric patients, the most frequently observed patterns were homogeneous (42%), dense fine speckled (9.6%), and nucleolar (8.8%). Higher ANA positivity were shown in women relative to men and children, with girls showing a higher prevalence than boys. Most frequent patterns were homogenous (AC-1), fine speckled (AC-4), and dense fine speckled (AC-2). This study analyzes the frequency and variation of ANA IFA patterns over one year, providing insights into ANA positivity across different patient groups.

Keywords: Autoantibody, Antinuclear antibody, IFA, Homogenous pattern

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KLİNİK ÖRNEKLERİN ANTİNÜKLEER ANTİKOR İMMUNFLORASAN PATERNLERİNİN BELİRLENMESİ

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ÖZET

Antinükleer antikorlar (ANA), hücre içi antijenleri hedef alan otoantikorlar olup, sistemik otoimmün romatizmal hastalıkların varlığını gösterebilir. ANA immünofloresan paternlerinin incelenmesi, sistemik otoimmün hastalıkların teşhisi ve yönetimi için esastır. Bu çalışma, bir yıl boyunca birçok klinikten toplanan ANA örneklerini değerlendirmeyi amaçlamaktadır. Çalışma, 1 Ocak 2024 ile 31 Aralık 2024 tarihleri arasında çeşitli kliniklerden gelen 5.120 hasta örneğinden elde edilen ANA IFA sonuçlarını içermektedir. ANA testi, Aesku İFA cihazları kullanılarak gerçekleştirildi ve paternler üç deneyimli uzman tarafından değerlendirildi. ANA pattern değerlendirmeleri, ICAP'a uygun olarak ve güncel AC kodları kullanılarak gerçekleştirildi. Hastaların 3230 (%63)'u kadın ,1088 (%21)'i erkek, 802 (%16)'si çocuktur. Örneklerin 1040 (%20,3)'ında ANA pozitifliği saptanmıştır. Kadınlarda otoantikor pozitifliği erkek ve çocuklara göre daha fazladır ($p< 0,001$). Kız çocuklarında ANA pozitifliği erkek çocuklarına göre daha fazladır ($p< 0,001$). Örneklerin 750 (%72,1)'sinde yalnızca nükleer pattern, 160 (%15,4)'ında yalnızca sitoplazmik pattern, 19 (%1,8)'unda yalnızca mitotik pattern, 111 (%10,7)'inde birden fazla pattern (miks) görülmüştür. En sık saptanan patternler homojen (AC-1) (%30,6), ince benekli (AC-4) (%13,4) ve yoğun ince benekli (AC-2) (%11,1)'dir. En sık saptanan sitoplazmik pattern sitoplazmik retikuler pattern (AC-21) (%9,7)'dir. En sık saptanan mitotik pattern midbody (AC-27) (%1,1) paternidir. Çocuk hastalarda en sık saptanan paternler homojen (%42), yoğun ince benekli (%9,6) ve nükleolar (%8,8) paterndir. Kadınlarda, erkek ve çocuklara göre daha yüksek ANA pozitif oranları saptanmıştır. Kız çocuklarında erkek çocuklarına göre daha yüksek bir ANA pozitif oranları olduğu görüldü. En sık görülen paternler homojen (AC-1), ince benekli (AC-4) ve yoğun ince benekli (AC-2) idi. Bu çalışma, bir yıl boyunca ANA IFA paternlerinin sıklığını ve varyasyonunu analiz ederek, farklı hasta gruplarında ANA pozitifliği hakkında bilgiler sunmaktadır.

Anahtar Kelimeler: Otoantikor, Antinükleer antikor, IFA, Homojen pattern

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THE EFFECT of RESİSTANCE EXERCİSES COMBİNED with BLOOD FLOW RESTRİCTİON METHOD on MUSCLE HYPERTROPHY

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ABSTRACT

This study aims to compare the effects of low-intensity blood flow restriction resistance exercise (BFR-RE) and high-intensity resistance exercise (HL-RE) on muscle hypertrophy. Twenty-seven healthy male participants aged 19-26 were included in this study. The participants were randomly assigned to two groups and performed leg extension exercises three times a week for eight weeks. The experimental group followed a low-load BFR-RE protocol, while the control group followed a high-load HL-RE protocol. Muscle adaptations were assessed through pre-test and post-test measurements; the time and interaction effects were analyzed using a 2 (group) × 2 (time) repeated measures ANOVA. Within-group and between-group comparisons were made using paired and independent t-tests with Bonferroni correction. The findings indicate similar improvements in quadriceps muscle adaptations in both the BFR-RE and HL-RE groups. Significant increases were observed in both groups for 1RM and muscle stiffness measurements. However, it was found that the greatest increase in 1RM values occurred in the BFR-RE group compared to the HL-RE group.

Keywords: Hypertrophy, HL-RE, BFR-RE

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KAN AKIŞI KISITLAMA YÖNTEMİ İLE KOMBİNE EDİLEN DİRENÇ EGZERSİZLERİNİN KAS HİPERTROFİSİ ÜZERİNE ETKİSİ

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ÖZET

Bu araştırma, düşük şiddetli kan akışı kısıtlama antrenmanı (BFR-RE) ile yüksek şiddetli direnç antrenmanının (HL-RE) kas hipertrofisi üzerindeki etkilerini karşılaştırmayı amaçlamaktadır. Bu çalışmaya, yaşları 19-26 arasında değişen 27 sağlıklı erkek katılımcı dâhil edilmiştir. Katılımcılar rastgele iki gruba ayrılmış ve sekiz hafta boyunca haftada üç gün leg extension egzersizi uygulanmıştır. Deney grubu düşük şiddetli BFR-RE, kontrol grubu ise yüksek şiddetli HL-RE protokolünü takip etmiştir. Kas adaptasyonları, ön test ve son test ölçümleriyle değerlendirilmiş; zaman ve etkileşim etkisi 2 (grup) × 2 (zaman) tekrarlı ölçümler ANOVA testiyle analiz edilmiştir. Gruplar içi ve arası karşılaştırmalar paired ve independent t-testleri ile Bonferroni düzeltmesi uygulanarak gerçekleştirilmiştir. Çalışmanın bulguları incelendiğinde hem BFR-RE hem de HL-RE gruplarında kuadriseps kas adaptasyonlarında benzer iyileşmelerin meydana geldiğini tespit edilmiştir. Her iki grupta da 1RM ve kas sertliği ölçümlerinde anlamlı artışlar gözlemlenmiştir. Ancak, HL-RE grubuna kıyasla 1RM değerlerindeki en fazla artışın BFR-RE grubunda olduğu belirlenmiştir

Anahtar Kelimeler: Hipertrofi, HL-RE, BFR-RE

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EFFECTS of HERBAL EXTRACTS on MALE INFERTILITY: ANTIOXIDANT and SPERMATOPROTECTIVE MECHANISMS

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ABSTRACT

The testicles are among the most rapidly affected tissues in the male reproductive system due to various internal and external factors. Male infertility resulting from disruptions in spermatogenesis is a complex health issue influenced by genetic, environmental, and lifestyle factors. Recent research has highlighted the antioxidant, anti-inflammatory and spermatoprotective properties of various plant-derived compounds. This review aims to explore the potential therapeutic benefits of herbal extracts on male reproductive health. A detailed literature analysis was conducted using PubMed, ScienceDirect, Scopus, and Web of Science databases to identify research and review articles published within the last decade. The keywords "herbal extract" and "male infertility" were employed to retrieve relevant studies. The selected articles were analyzed for the effects of herbal extracts on testicular dystrophy, sperm parameters, testicular histology and oxidative stress markers. Several herbal extracts including *Ginkgo biloba*, *Tribulus terrestris*, *Withania somnifera*, *Hochu-ekki-to* and *Panax ginseng* have been reported to exert beneficial effects on male reproductive health. These compounds have demonstrated the ability to enhance sperm motility, mitigate DNA damage and preserve testicular histology through antioxidant mechanisms. However some studies suggest that the therapeutic efficacy of these extracts may be influenced by dosage and duration of administration. The existing literature suggests that specific plant-derived compounds hold promise as adjunctive therapies for male infertility. Nevertheless the necessity for further well-designed clinical studies remains a critical consideration in establishing their efficacy and safety in clinical practice.

Keywords: Herbal extracts, Male infertility, Sperm parameters, Testicular histology

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BİTKİ EKSTRAKTLARININ ERKEK İNFERTİLİTESİ ÜZERİNE ETKİLERİ: ANTİOKSİDAN VE SPERMATOPROTEKTİF MEKANİZMALAR

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ÖZET

Erkek üreme sisteminde testisler çeşitli faktörlerden en çabuk etkilenen dokulardan biridir. Özellikle spermatogenez süreçlerinin etkilenmesinden kaynaklanan erkek infertilitesi, genetik, çevresel ve yaşam tarzı faktörlerine bağlı olarak gelişen multifaktöriyel bir sağlık sorunudur. Son yıllarda yapılan çalışmalar, çeşitli bitki ekstraktlarının antioksidan, antiinflamatuar ve spermatoprotektif etkilerini göstermektedir. Bu derlemede, çeşitli bitki ekstraktlarının erkek üreme sağlığı üzerindeki potansiyel yararları ele alınmıştır. PubMed, Science Direct, Scopus, Web of Science veri tabanlarında "herbal extract, male infertility" anahtar kelimeleriyle son 10 yılda yayımlanan araştırma ve derleme makaleleri incelenmiştir. Çalışmalarda değerlendirilen bitki ekstraktlarının testis distrofisi, sperm parametreleri, testiküler histoloji ve oksidatif stres üzerindeki etkileri incelenmiştir. Ginkgo biloba, Tribulus terrestris, Withania somnifera, Hochu-ekki-to, Panax ginseng gibi çeşitli bitki ekstraktlarının erkek üreme sağlığı üzerinde olumlu etkileri olduğu bildirilmiştir. Bu bitkilerin antioksidan mekanizmalar yoluyla sperm motilitesini artırdığı, DNA hasarını azalttığı ve testiküler histolojiyi koruduğu gösterilmiştir. Ancak, bazı çalışmalar bitki ekstraktlarının etkilerinin doza ve kullanım süresine bağlı olarak değişebileceğini öne sürmektedir.Mevcut literatür, bazı bitkisel bileşiklerin erkek infertilitesinin tedavisinde destekleyici olarak kullanılabileceğini göstermektedir. Ancak, bu alanda daha fazla klinik çalışmaya ihtiyaç duyulduğu açıktır.

Anahtar Kelimeler: Bitki ekstraktları, Erkek infertilitesi, Sperm parametreleri, Testis histolojisi

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THE ROLE and CLINICAL SIGNIFICANCE of ADROPIN in the PATHOGENESIS of CARDIOVASCULAR DISEASES and DIABETES

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ABSTRACT

Adropin is a regulatory peptide involved in energy metabolism, insulin sensitivity, and vascular homeostasis. Recent studies have suggested its potential role in metabolic and cardiovascular diseases, including diabetes and atherosclerosis. This review aims to evaluate the role of adropin in the pathogenesis of cardiovascular diseases (CVDs) and diabetes, focusing on its regulatory mechanisms and clinical significance as a potential biomarker or therapeutic target.
This study is a systematic review of current literature exploring the relationship between adropin, CVDs, and diabetes. Relevant studies were identified through PubMed, Scopus, and Web of Science databases, focusing on adropin gene expression, circulating levels, and its impact on metabolic and vascular functions. The review examines how adropin modulates endothelial function, lipid metabolism, inflammation, and insulin signaling.
Existing evidence suggests that adropin plays a key role in maintaining vascular integrity, regulating glucose and lipid metabolism, and reducing inflammation. Studies indicate that decreased adropin levels are associated with endothelial dysfunction, atherosclerosis, and insulin resistance, which are critical factors in the development of both CVDs and diabetes. However, the precise molecular mechanisms linking adropin to these diseases remain unclear, necessitating further investigation. Adropin holds promise as a potential biomarker and therapeutic target for CVDs and diabetes due to its role in metabolic and vascular homeostasis. Further clinical and experimental studies are required to elucidate its precise mechanisms and to explore its potential applications in disease prevention and treatment. This review highlights the need for more comprehensive research to determine the full clinical significance of adropin in cardiovascular and metabolic diseases.

Keywords: Adropin, Cardiovascular diseases, Diabetes, Metabolic regulation, Endothelial dysfunction, Inflammation

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KARDİYOVASKÜLER HASTALIKLAR VE DİYABET PATOGENEZİNDE ADROPİN'İN ROLÜ VE KLİNİK ÖNEMİ

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ÖZET

Adropin, enerji metabolizması, insülin duyarlılığı ve vasküler homeostazda rol oynayan bir düzenleyici peptittir. Son çalışmalar, adropinin diyabet ve ateroskleroz dahil olmak üzere metabolik ve kardiyovasküler hastalıklardaki potansiyel rolünü öne sürmektedir. Bu derleme, adropinin kardiyovasküler hastalıklar (KVH) ve diyabet patogenezindeki rolünü değerlendirerek, düzenleyici mekanizmalarını ve klinik biyobelirteç veya terapötik hedef olarak önemini incelemeyi amaçlamaktadır. Bu çalışma, adropin, KVH ve diyabet arasındaki ilişkiyi araştıran mevcut literatürün sistematik bir incelemesidir. PubMed, Scopus ve Web of Science veri tabanlarında yapılan taramalarla ilgili çalışmalar belirlenmiş; adropin gen ekspresyonu, dolaşımdaki seviyeleri ve metabolik ile vasküler fonksiyonlara etkileri üzerine odaklanılmıştır. İnceleme, adropinin endotel fonksiyonu, lipid metabolizması, inflamasyon ve insülin sinyalizasyonu üzerindeki etkilerini değerlendirmektedir. Mevcut kanıtlar, adropinin vasküler bütünlüğün korunmasında, glukoz ve lipid metabolizmasının düzenlenmesinde ve inflamasyonun azaltılmasında önemli bir rol oynadığını göstermektedir. Çalışmalar, düşük adropin seviyelerinin endotel disfonksiyonu, ateroskleroz ve insülin direnci ile ilişkili olduğunu ve bunların KVH ve diyabet gelişiminde kritik faktörler olduğunu ortaya koymaktadır. Ancak, adropinin bu hastalıklarla ilişkili moleküler mekanizmaları hala tam olarak anlaşılamamış olup, daha fazla araştırmaya ihtiyaç duyulmaktadır. Adropin, metabolik ve vasküler homeostazdaki rolü nedeniyle KVH ve diyabet için potansiyel bir biyobelirteç ve terapötik hedef olarak öne çıkmaktadır. Hastalıkların önlenmesi ve tedavisindeki potansiyel uygulamalarını keşfetmek için daha fazla klinik ve deneysel çalışmaya ihtiyaç vardır. Bu derleme, adropinin kardiyovasküler ve metabolik hastalıklardaki klinik önemini tam olarak belirlemek için daha kapsamlı araştırmalara duyulan ihtiyacı vurgulamaktadır.

Anahtar Kelimeler: Adropin, Kolorektal kanser, Diyabet, Moleküler mekanizmalar, Metabolik düzenleme, İnflamasyon

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INVESTIGATION of the RELATIONSHIP between SLEEP QUALITY, EMOTIONAL STATE and ACADEMIC ACHIEVEMENT in UNIVERSITY STUDENTS

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ABSTRACT

The aim of this study was to examine the relationship between sleep quality, mood and academic achievement in university students. This study was conducted with a total of 78 individuals (28 males, 50 females) studying at Toros University. Sleep quality was assessed with the Pittsburgh Sleep Quality Index (PSQI), emotional state was assessed with the Beck Depression Inventory (BDI), and academic achievement was recorded as General Weighted Grade Point Average (GWGPA). The mean age of the students who participated in the study was 22.24 ± 3.88 years. Spearman's correlation analysis was used for statistical analysis of non-normally distributed data. A statistically positive and moderately significant correlation was found between the PSQI scores of the university students and the total scores of the BDI ($r=0.572$, $p<0.05$). There was no statistically significant difference between the participants PSQI and BDI total scores and their academic achievement levels ($p>0.05$). There was a positive relationship between sleep quality and mood of university students. No relationship was found between academic achievement status and sleep quality and mood. There is a need for comprehensive studies in which other parameters that may affect academic achievement status are also taken into consideration.

Keywords: Sleep quality, Emotional state, Academic achievement

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ÜNİVERSİTE ÖĞRENCİLERİNDE UYKU KALİTESİ, DUYGU DURUMU VE AKADEMİK BAŞARI DURUMU ARASINDAKİ İLİŞKİNİN İNCELENMESİ

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ÖZET

Bu çalışmanın amacı üniversite öğrencilerinde uyku kalitesi, duygu durumu ve akademik başarı durumu arasındaki ilişkinin incelenmesidir. Bu çalışma Toros Üniversitesinde öğrenim gören toplam 78 birey (28 erkek, 50 kadın) ile gerçekleştirildi. Uyku kaliteleri Pittsburgh Uyku Kalitesi İndeksi (PUKİ) ile, duygu durumları Beck Depresyon Ölçeği (BDÖ) ile değerlendirildi ve akademik başarıları Genel Ağırlıklı Not Ortalaması (GANO) şeklinde kaydedildi. Çalışmaya katılan öğrencilerin yaş ortalaması 22,24 ± 3,88 idi. Normal dağılıma sahip olmayan verilerin istatistiksel analizinde Spearman korelasyon analizi kullanıldı. Üniversite öğrencilerinin PUKİ skorları ile BDÖ toplam skorları arasında istatistiksel olarak pozitif yönlü orta düzeyde anlamlı korelasyon saptandı ($r=0,572$, $p<0.05$). Katılımcıların PUKİ ve BDÖ toplam skorları ile akademik başarı düzeyleri arasında istatistiksel olarak anlamlı bir fark tespit edilmedi ($p>0.05$). Üniversite öğrencilerinin uyku kalitesi ile duygu durumları arasında pozitif yönlü bir ilişki vardı. Akademik başarı durumları ile uyku kalitesi ve duygu durumu arasında bir ilişki bulunmamıştır. Akademik başarı durumunu etkileyebilecek diğer parametrelerin de göz önünde bulundurulduğu kapsamlı çalışmalara ihtiyaç duyulmaktadır.

Anahtar Kelimeler: Uyku kalitesi, Duygu durumu, Akademik başarı

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THE INVESTİGATİON of the IMPACT of CLASSİFİCATİON SCORES in WHEELCHAİR BASKETBALL PLAYERS on SPORTS PERFORMANCE and DAİLY LİFE

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ABSTRACT

The aim of our study is to investigate the impact of classification scores (CS) on sports performance and daily life in wheelchair basketball players. The study included 20 athletes playing in the wheelchair basketball league. The athletes were divided into two groups: Group 1 (CS < 3), Group 2 (CS > 3). Sports performance tests were applied to wheelchair basketball players divided into two groups. These are the 20-meter sprint test to determine wheelchair usage speeds, the zone shot test to measure accurate shooting to evaluate shooting skills for 2 minutes, and the slalom test to measure wheelchair usage skills. In addition, abdominal inhalation test with the stabilizer pressure unit was applied to evaluate the activity of the deep abdominal wall muscles, sitting function test to evaluate wheelchair sitting, balance and reactive motor control, SF-36 to evaluate activities of daily living, and McGill pain questionnaire to question pain. At the end of the evaluations, significant differences were found in favor of Group 1 in terms of prone ($p=0.03$) and supine ($p<0.001$) stabilization values, zone shot ($p=0.04$) values measuring accurate shots, function in sitting test ($p<0.001$), and SF-36 ($p=0.04$) values. However, no significant differences were observed between the groups in the 20-meter sprint ($p=0.21$), slalom ($p=0.17$), and pain ($p=0.38$) values. It is believed that as the classification scores increase in wheelchair basketball players, sports performance will also improve proportionally. However, when looking at the results of our study, we observed that as the classification scores increased, there was an improvement in prone and supine stabilization values, sitting postures, and accurate shooting values between the groups, while there was no change in other values.

Keywords: Wheelchair basketball, Performance, Stabilization

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TEKERLEKLİ SANDALYE BASKETBOLCULARINDA KLASİFİKASYON PUANLARININ, SPORTİF PERFORMANS VE GÜNLÜK YAŞAM ÜZERİNE ETKİSİNİN İNCELENMESİ

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ÖZET

Çalışmamızın amacı tekerlekli sandalye basketbolcularında klasifikasyon puanlarının (KP) sportif performans ve günlük yaşam üzerine etkisini araştırmaktır. Çalışmaya tekerlekli sandalye basketbol liginde oynayan 20 sporcu dahil edildi. Sporcular iki gruba ayrıldı: Grup 1 (KP<3), Grup 2 (KP>3). İki gruba ayrılan tekerlekli sandalye basketbol oyuncularına spora yönelik performans testleri uygulandı. Bunlar, tekerlekli sandalye kullanım hızlarını tespit amacıyla 20 metre sprint testi, 2 dakika boyunca şut atma becerilerini değerlendirmek için isabetli atışı ölçen zone shot testi ve tekerlekli sandalye kullanım becerilerini ölçen slalom testidir. Bunlara ek olarak, derin karın duvarı kaslarının aktivitesini değerlendirmek için stabilizer basınç ölçeriyle abdominal içe çekme testi, tekerlekli sandalyede oturma, denge ve reaktif motor kontrolü değerlendirmek için oturma fonksiyon testi, günlük yaşam aktivitelerini değerlendirmek için SF-36 ve ağrıyı sorgulamak için McGill ağrı anketi uygulandı. Yapılan değerlendirmelerin sonunda, Grup 1 ve Grup 2 arasında yüzüstü (p=0,03) ve sırt üstü (p < 0,001) stabilizasyon değerleri, isabetli atışı ölçen zone shot (p=0,04) değerleri, oturma fonksiyon testi (p < 0,001) ve SF-36 (p=0,04) değerlerinde Grup 1 lehine anlamlı fark bulundu. Ancak 20 metre sprint (p=0,21), slalom (p=0,17) ve ağrı (p=0,38) değerlerinde ise gruplar arası anlamlı fark gözlenmedi. Tekerlekli sandalye basketbolcularında klasifikasyon puanlarının yükselmesi ile sportif performansın doğru orantılı olarak artacağı düşünülmektedir. Ancak çalışmamızın sonuçlarına baktığımızda kalsifikasyon puanlarının yükselmesi ile, sporcuların yüzüstü ve sırt üstü stabilizasyon değerleri, oturma düzgünlükleri ve isabetli atış değerlerinde gruplar arası artış gözlenirken, diğer değerlerde bir değişiklik görülmemiştir.

Anahtar Kelimeler: Tekerlekli sandalye basketbolu, Performans, Stabilizasyon

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EFFECTS of BREATHING EXERCISES COMBINED with HAMSTRING STRETCHING EXERCISES on MUSCLE SHORTENING and BALANCE in HEALTHY YOUNG INDIVIDUALS with HAMSTRING SHORTNESS

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ABSTRACT

Hamstring muscle flexibility is essential for performing many activities of daily living effectively and efficiently. Despite this, hamstring shortness is a fairly common condition in the general population. The purpose of this study was to determine the effectiveness of breathing exercises combined with stretching exercises on hamstring shortness and balance in healthy individuals with hamstring shortness. 33 healthy individuals between the ages of 18-25 were included in the study. Participants were randomly divided into two groups. The first group (conventional group) was given hamstring static stretching; the second group (breathing exercise + hamstring static stretching group) was given diaphragm breathing exercises and hamstring static stretching exercises. The study period lasted 4 weeks. Active knee extension, sit and reach and flamingo balance tests were performed on the participants at the beginning and end of the study. When the pre- and post-treatment values of the Sit-and-Reach test, Flamingo balance test and active knee extension were compared within the groups, a statistically significant difference was found between the pre- and post-treatment evaluation parameters in both groups ($p<0.05$). When the pre- and post-treatment values of the Sit-and-Reach test, Flamingo balance test and active knee extension parameters were compared between the groups, no statistically significant difference was found between the groups ($p>0.05$). Diaphragmatic breathing exercise performed together with hamstring static stretching exercise yielded similar results to hamstring static stretching exercise performed alone.

Keywords: Hamstring shortness, Diaphragmatic breathing, Static stretching

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HAMSTRİNG KISALIĞI OLAN SAĞLIKLI GENÇ BİREYLERDE HAMSTRİNG GERME EGZERSİZLERİYLE BİRLİKTE YAPILAN NEFES EGZERSİZLERİNİN KAS KISALIĞINA VE DENGEYE ETKİSİ

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ÖZET

Hamstring kasının esnekliği, günlük yaşamın birçok aktivitesini etkili ve verimli bir şekilde gerçekleştirmek için gereklidir. Buna rağmen, hamstring kası kısalığı genel popülasyonda oldukça yaygın bir durumdur. Bu çalışmanın amacı hamstring kısalığı olan sağlıklı bireylerde germe egzersizleriyle birlikte yapılan nefes egzersizlerinin hamstring kısalığına ve dengeye etkinliğini tespit etmektir. Çalışmaya 18-25 yaş aralığında 33 sağlıklı birey dahil edildi. Katılımcılar randomize olarak iki gruba ayrılmıştır. Birinci gruba (konvansiyonel grup) hamstring statik germe verilirken; ikinci gruba (solunum egzersizi + hamstring statik germe grubu) diyafram solunum egzersizleri ve hamstring statik germe egzersizleri verilmiştir. Çalışma süresi 4 hafta sürmüştür. Çalışma başında ve sonunda katılımcılara aktif diz ekstansiyonu, otur-uzan ve flamingo denge testleri yapılmıştır. Grup içi Otur uzan testi, Flamingo denge testi ve aktif diz ekstansiyonu tedavi öncesi ve sonrası değerleri karşılaştırıldığında, her iki grupta da tedavi öncesi ve sonrası değerlendirme parametreleri arasında istatistiksel olarak anlamlı bir fark olduğu görüldü ($p<0.05$). Gruplar arası Otur uzan testi, Flamingo denge testi ve aktif diz ekstansiyonu parametrelerinin tedavi öncesi ve sonrası değerleri karşılaştırıldığında ise, gruplar arasında istatistiksel olarak anlamlı bir fark olmadığı görüldü ($p>0.05$). Hamstring statik germe egzersiziyle birlikte yapılan diyafram solunumu egzersizi tek başına yapılan hamstring statik germe egzersizi ile benzer sonuçlar vermiştir.

Anahtar Kelimeler: Hamstring kısalığı, Diyafram solunumu, Statik germe

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INVESTIGATION of the EFFECTS of POST-ISOMETRİC RELAXATİON and NEURAL MOBİLİZATİON in PATİENTS with NONSPECİFİC NECK PAİN

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ABSTRACT

Non-specific neck pain (NSNP) refers to pain in the posterior or lateral neck without pathological findings, often due to mechanical or postural factors. Conservative treatments are standard, yet no universally accepted protocol exists. This study compares Post-Isometric Relaxation (PIR) and Neural Mobilization (NM) to identify an effective, acute intervention for clinical use. This randomized controlled study included 41 participants (29% male, 70% female) aged 25–45 years with a Neck Disability Index (NDI) score of 5 and at least three months of NSNP without diagnosed pathology. Participants were assessed at Istanbul Medipol Mega University Hospital between January and December 2024. They were randomly allocated into NM (n=21) and PIR (n=20) groups. Pre- and post-intervention assessments included a demographic form, NDI for disability, Visual Analog Scale (VAS) for pain, and a goniometer for cervical range of motion (ROM). Following treatment, participants rested for 15 minutes before reassessment. Both groups showed significant improvements in cervical flexion, extension, ROM, and VAS scores post-treatment ($p<0.05$), but no significant differences between groups ($p>0.05$). In the PIR group, right-left lateral flexion ($p=0.015$, $p=0.03$) and right-left rotation ($p=0.01$, $p=0.04$) improved significantly. However, intergroup comparisons remained statistically non-significant ($p>0.05$). Neck pain and restricted motion impact daily activities. Both manual therapy techniques provided acute symptom relief and improved cervical ROM, yet neither proved superior. These methods can be safely integrated into clinical practice to facilitate muscle relaxation and pain reduction.

Keywords: Non-specific neck pain, Post-isometric relaxation, Neural mobilization techniques

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NON-SPESİFİK BOYUN AĞRILI HASTALARDA POST-İZOMETRİK RELAKSASYON İLE NÖRAL MOBİLİZASYON ETKİLERİNİN İNCELENMESİ

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ÖZET

Non-spesifik boyun ağrısı (NSBA), boynun arka veya yan kısımlarında, herhangi bir patolojik bulguya bağlı olmayan ve mekanik ya da postüral sebeplerle gelişebilen bir ağrıdır. Tedavi yöntemi olarak genellikle konservatif yaklaşımlar tercih edilmektedir. Ancak standart bir tedavi protokolü bulunmamaktadır. Bu çalışmanın amacı, kullanılan tedavi yöntemlerinden Post-izometrik Relaksasyon ile Nöral Mobilizasyon yöntemlerini karşılaştırarak klinikte uygulanabilecek pratik, etkili ve akut etki gösteren tedavi yöntemini belirlemektir. Randomize kontrollü olarak yürütülen çalışmaya 25-45 yaş arasında, boyun özürlülük indeksinden 5 puan almış, en az 3 aydır boyun ağrısı şikayeti olan ancak hekim muayenesinde servikal bölgede spesifik bir tanı veya patolojisi olmayan 41 katılımcı (%29 erkek, %70 kadın) dahil edilmiştir. Katılımcılar, İstanbul Medipol Mega Üniversite Hastanesinde Ocak 2024 - Aralık 2024 tarihleri arasında değerlendirilmiştir. Bireyler nöral mobilizasyon (n:21) ve post-izometrik (n:20) olarak iki tedavi grubuna ayrılmıştır. Tüm bireyler tedavi öncesi ve tedavi sonrası yüz yüze değerlendirilmiştir. Değerlendirmede demografik bilgi formu, boyun özür düzeyin değerlendirilmesi için Boyun Özürlülük Indeksi, ağrı değerlendirmesi için Vizüel Analog Skala (VAS) ve servikal eklem hareket açıklığı için gonyometre kullanılmıştır. Tedavi sonunda hastalar 15 dakika dinlendirilerek değerlendirme yöntemleri tekrarlanmıştır. Her iki tedavi grubunda da boyun fleksiyon, ekstansiyon, eklem hareket açıklıklarında ve VAS değerlerinde grup içi tedavi öncesi ve sonrasında olumlu yönde anlamlı fark bulunmuştur ($p<0,05$) ancak iki tedavi yöntemi karşılaştırıldığında gruplar arası anlamlı fark görülmemiştir($p>0,05$). Sağ-sol lateral fleksiyon ($p=0,015$, $p=0,03$), sağ-sol rotasyon ($p=0,01$, $p=0,04$) eklem hareket açıklıklarında sadece post- izometrik grubu içinde anlamlı fark bulunmuştur fakat iki grup arası anlamlı istatiksel fark kaydedilmemiştir ($p>0,05$). Boyun ağrısı ve eklem hareket kısıtlılığı, hastaların günlük yaşam aktivitelerini etkileyen temel şikayetlerdendir. Yapılan çalışma sonucunda manuel olarak uygulanan iki tedavi yönteminin de akut olarak hastanın ağrı ve hareket açıklığı üzerinde teröpatik etkisi olduğu ancak yöntemlerin birbirinden daha üstün olmadığı görülmüştür. Klinik tedavide hastada hızlı gevşeme sağlamak ve şikayetleri azaltmak için iki tedavi yöntemi de güvenle kullanılabilir.

Anahtar Kelimeler: Non-spesifik boyun ağrısı, Nöral mobilizasyon, Post-izometrik relaksasyon

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CURRENT MUSCLE STRENGTHENING METHODS in STROKE REHABILITATION

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ABSTRACT

One of the primary goals of stroke rehabilitation is to improve muscle strength. Increased muscle strength supports improvements in several key parameters, including balance, walking performance, and daily living activities. Studies on strengthening different muscle groups and evaluating the clinical outcomes of interventions are crucial for stroke rehabilitation. Muscle strengthening methods used in stroke rehabilitation have evolved over the years, incorporating various approaches such as respiratory function training, cognitive strategies, and taping applications. Researchers continue to develop new protocols that combine these methods with different exercise techniques to optimize rehabilitation outcomes. This study aims to examine the most recently targeted muscle groups, intervention methods, and their effects in individuals with stroke. The "Google Scholar" and “Web of Science” databases were used for this study. The articles included in the study were selected based on the following criteria: the title must contain the word "stroke," the exact phrase "muscle strength," and at least one of the terms "randomised controlled trial." To ensure a focus on recent literature, the search was limited to studies published between 2021 and 2025. Articles without full-text access, protocol studies, and review articles were excluded from the study. A total of eleven articles were included in the study. The findings indicate that strengthening respiratory and core muscles contributes to positive outcomes in stroke rehabilitation. Additionally, interventions such as pelvic taping, robot-assisted arm training, cognitive training, upper limbs cycle ergometer, low-intensity resistance training with blood flow restriction, community-based exercise programs, and sit-to-stand training were found to be beneficial for individuals with stroke. However, creatine supplementation was not found to be an effective method for increasing muscle strength.

Keywords: Stroke, Muscle strength, Exercise

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İNME REHABİLİTASYONUNDA GÜNCEL KAS KUVVETLENDİRME YÖNTEMLERİ

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ÖZET

İnme rehabilitasyonunun temel hedeflerinden birisi kas kuvvetinin artırılmasıdır. Kas kuvvetinin artması dengenin geliştirilmesi, yürüyüş performansının artırılması ve günlük yaşam aktivitelerinin desteklenmesi başta olmak üzere birçok önemli parametredeki gelişimi desteklemektedir. Farklı kas gruplarında kuvvetinin artırılması ve müdahalelerin klinik sonuçları ile ilgili çalışmalar inme rehabilitasyonu için oldukça önemlidir. İnme rehabilitasyonunda kullanılan kas güçlendirme yöntemleri yıllar içinde gelişmiş olup solunum fonksiyon eğitimi, bilişsel stratejiler, bantlama uygulamaları gibi çeşitli yaklaşımları içermektedir. Araştırmacılar, rehabilitasyon sonuçlarını optimize etmek için bu yöntemleri farklı egzersiz teknikleriyle birleştiren yeni protokoller geliştirmeye devam etmektedir. Bu çalışmanın amacı inmeli bireylerde en son çalışılan kas gruplarını, müdahale yöntemlerini ve bunların sonuçlarını incelemektir. Bu çalışmada “Google akademik” ve “Web of Science” veri tabanları kullanıldı. Çalışmaya dahil edilecek makaleler, makale başlığında; "stroke" kelimesini içeren, "muscle strength" kelime grubunu aynen içeren ve "randomised controlled trial" kelimelerinden herhangi birini içeren çalışmalar arasından seçilmiştir. Ek olarak güncel literatürü yansıtmak için arama 2021-2025 yılı ile sınırlandırılmıştır. Tam metnine ulaşılamayan çalışmalar, protokol çalışmaları ve derleme çalışmaları çalışmaya dahil edilmemiştir. Çalışmaya toplam on bir makale dahil edilmiştir. Sonuçlara göre solunum ve çekirdek kasların kuvvetlendirilmesi inme rehabilitasyonu için olumlu gelişmeler sağlamaktadır. Ayrıca pelvik bantlama, robot destekli kol eğitimi, bilişsel eğitim, üst ekstremite bisiklet ergometresi, kan akımını kısıtlayan düşük yoğunluklu direnç antrenmanları, toplum temelli egzersiz programları ve oturma kalkma eğitimi gibi uygulamaların inmeli bireyler için faydalı olduğu bulunmuştur. Kreatin takviyesinin ise kas kuvvetini artırmada etkili bir yöntem olmadığı bulunmuştur.

Anahtar Kelimeler: İnme, Kas kuvveti, Egzersiz

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WHAT is the THERAPEUTIC POTENTIAL of ASIAN PROPOLIS?

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ABSTRACT

Propolis is widely utilized as a commercial dietary supplement aimed at disease prevention. Propolis of Asian origin is rich in essential antioxidants, such as flavonoids and flavonoids. The objective of this study is to investigate the potential health effects of propolis collected from various regions of Asia. In accordance with the objective of the study, research published in 2022 and thereafter, which investigates the potential health effects of Asian propolis and is accessible in full text, has been reviewed and compiled. Studies have shown that propolis from *Apis mellifera jemenitica* in Saudi Arabia is effective against *Staphylococcus aureus*; Chinese red propolis demonstrates activity against *Staphylococcus aureus* and methicillin-resistant *Staphylococcus aureus* (MRSA); ethanol extract of Chinese propolis is effective against MRSA; Kazakh propolis exhibits activity against gram-positive bacteria and *Helicobacter pylori*; Chinese poplar propolis essential oil reduces bacterial viability in *Streptococcus mutans* biofilm without cytotoxic effects on normal oral epithelial cells; Iranian propolis samples inhibit the growth of *Brucella* isolates; Korean propolis samples show varying wound healing, anti-inflammatory, and antioxidant activities depending on geographic origin; Poplar bud extract and Chinese propolis are rich in phenolic acids and flavonoids, exhibiting strong antioxidant activity; and Turkish propolis possesses strong antioxidant properties, delays oxidation in sunflower oil, and may be utilized in the food industry to prevent oil oxidation. It has been demonstrated that propolis can inhibit biofilm formation, provide effective treatment due to its high flavonoid and phenolic content, and strengthen the immune system through its antioxidant capacity. Given its potential for inclusion in dietary routines, further research in clinical studies and the food industry is recommended for the benefit of public health.

Keywords: Propolis, Asia, Antimicrobial

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ASYA PROPOLİSİNİN TERAPÖTİK POTANSİYELİ NEDİR?

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ÖZET

Propolis, hastalıkları önlemeye yönelik ticari besin takviyesi olarak sıkça değerlendirilmektedir. Asya kökenli propolisler, flavonlar ve flavonoidler gibi temel antioksidanlar bakımından zengindir. Araştırmanın amacı, Asya'nın farklı bölgelerinden toplanan propolislerin sağlık üzerindeki potansiyel etkilerini araştırmaktır. Araştırmanın amacı doğrultusunda, Asya propolislerinin sağlık üzerindeki potansiyel etkilerini inceleyen 2022 yılı ve sonrasında yayınlanmış tam metnine ulaşılabilen araştırmalar incelenmiş ve derlenmiştir. Suudi Arabistan'da *Apis mellifera* jemenitica propolisinin *Staphylococcus aureus*'a; Çin kırmızı propolisinin *Staphylococcus aureus*'a ile metisiline dirençli *Staphylococcus aureus* (MRSA)'a; Çin propolisi etanol ekstraktının MRSA'ya; Kazak propolisinin gram-pozitif bakteriler ve *Helicobacter pylori*'ye karşı etkili olduğu; Çin kavak propolisi esansiyel yağının *Streptococcus mutans* biyofilmi içerisindeki bakteriyel canlılığı azaltıp normal oral epitel hücrelerine karşı sitotoksik etki yapmadığı; İran propolis örneklerinin Brucella izolatlarının büyümesini inhibe ettiği; Kore propolis örneklerinin yara iyileşmesi, anti-inflamatuar ve antioksidan aktivitelerinin coğrafi kökenlere göre farklılık gösterdiği; Poplar tomurcuğu ekstresi ve Çin propolisinin fenolik asitler ile flavonoidler bakımından zengin olduğu ve kuvvetli antioksidan aktivite sergilediği; Türkiye propolisinin güçlü antioksidan özelliklere sahip olduğu, ayçiçek yağındaki oksidasyonu geciktirdiği ve böylece gıda sektöründe yağların oksidasyonunu geciktirmek için kullanılabileceği belirlenmiştir. Propolisin biyofilm oluşumunu önleyebildiği, yüksek flavonoid ve fenolik içeriği ile etkili bir tedavi sunduğu, antioksidan kapasitesiyle bağışıklık sistemini güçlendirdiği ortaya koyulmuştur. Beslenme rutini içinde kullanılabilmesi nedeniyle klinik çalışmalarda ve gıda endüstrisinde daha fazla araştırılması toplum sağlığı yararına önerilmektedir.

Anahtar Kelimeler: Propolis, Asya, Antimikrobiyal

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COMPARİSON of BROTH MİCRODİLUTİON and COMMERCİAL METHODS for the DETECTİON of COLİSTİN SUSCEPTİBİLİTY in CARBAPENEM-RESİSTANT GRAM-NEGATİVE BACTERİA

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ABSTRACT

With the increasing prevalence of carbapenem-resistant Enterobacteriaceae infections, the use of colistin has become more widespread. Various testing methods are utilized to assess colistin susceptibility, with the broth microdilution method being the reference standard recommended by EUCAST and CLSI. This study aims to evaluate colistin susceptibility in carbapenem-resistant *Klebsiella pneumoniae*, *Pseudomonas aeruginosa*, and *Acinetobacter baumannii* isolates using the broth microdilution method and the commercial systems VITEK 2 (BioMerieux, France) and MicroScan (Beckman Coulter, USA), and to compare the results with the reference method. The study included 25 *A. baumannii*, 25 *K. pneumoniae*, and 25 *P. aeruginosa* isolates resistant to carbapenems. Colistin susceptibility was determined using the ISO-20776 standard broth microdilution method and VITEK 2 and MicroScan automated systems. This study was supported by the Mersin University Scientific Research Projects Unit under project code 2018-1-TP2-2905. Of the 75 isolates tested by broth microdilution, 64% were found to be susceptible to colistin, while 36% were resistant. Using the VITEK 2 system, 81% were susceptible and 19% were resistant, whereas the MicroScan system identified 73% as susceptible and 27% as resistant. The MicroScan system demonstrated a sensitivity of 89% and a specificity of 55%, while the VITEK 2 system exhibited a sensitivity of 93% and a specificity of 66%. Although both systems showed high sensitivity, their specificity was relatively low. The categorical agreement was 78% for MicroScan and 84% for VITEK 2. In conclusion, broth microdilution is accepted as the reference method for accurate determination of colistin susceptibility. However, in laboratories that do not have the opportunity to work with broth microdilution method in routine use, commercial automated systems can be considered as an alternative, provided that they are interpreted with caution and supported by confirmatory tests when necessary.

Keywords: Colistin, Broth microdilution, MicroScan, VITEK 2

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KARBAPENEM DİRENÇLİ GRAM NEGATİF BAKTERİLERDE KOLİSTİN DUYARLILIĞININ SAPTANMASINDA SIVI MİKRODİLÜSYON VE TİCARİ YÖNTEMLERİN KARŞILAŞTIRILMASI

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ÖZET

Karbapenem dirençli Enterobacteriaceae enfeksiyonlarının artmasıyla birlikte kolistin kullanımı yaygınlaşmıştır. Kolistin duyarlılığını değerlendirmek için farklı test yöntemleri kullanılmaktadır. EUCAST ve CLSI tarafından önerilen referans yöntem sıvı mikrodilüsiyondur. Bu çalışmanın amacı, karbapenem dirençli *Klebsiella pneumoniae, Pseudomonas aeruginosa* ve *Acinetobacter baumannii* izolatlarında kolistin duyarlılığının sıvı mikrodilüsiyon yöntemi ile ticari sistemler VITEK 2 (BioMerieux, Fransa) ve MicroScan (Beckman Coulter, USA) kullanılarak değerlendirilmesi ve elde edilen sonuçların referans yöntem ile karşılaştırılmasıdır. Karbapenemlere dirençli 25 *A. baumannii*, 25 *K. pneumoniae* ve *25 P. aeruginosa* izolatı çalışmaya dâhil edilmiştir. Kolistin duyarlılığı ISO-20776 standart sıvı mikrodilüsiyon metodu ve VITEK 2 ile MicroScan sistemleriyle belirlenmiştir. Bu çalışma 2018-1-TP2-2905 kodlu proje olarak Mersin Üniversitesi Bilimsel Araştırma Projeleri Birimi tarafından desteklenmiştir. Sıvı mikrodilüsiyon ile 75 izolatın %64'ü kolistine duyarlı, %36'si dirençli bulunmuştur. VITEK 2 ile %81 duyarlı, %19 dirençli; MicroScan ile %73 duyarlı, %27 dirençli sonuç elde edilmiştir. MicroScan %89 duyarlılık, %55 özgüllük; VITEK 2 ise %93 duyarlılık, %66 özgüllük göstermiştir. Her iki sistemin duyarlılığı yüksek ancak özgüllükleri düşüktür. Kategorik uyum; MicroScan %78, VITEK 2 %84 olarak bulunmuştur. Sonuç olarak, kolistin duyarlılığının doğru belirlenmesi için sıvı mikrodilüsyon referans yöntem olarak kabul edilmektedir. Ancak, rutin kullanımda sıvı mikrodilüsyon yöntemiyle çalışma imkânı olmayan laboratuvarlarda, ticari otomatize sistemler dikkatli yorumlanmak ve gerektiğinde doğrulama testleri ile desteklenmek kaydıyla alternatif olarak değerlendirilebilir.

Anahtar Kelimeler: Kolistin, Sıvı mikrodilüsyon, MicroScan, VITEK 2

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INFECTIONS CAUSED by *CANDIDA PARAPSILOSIS*: CLINICAL FINDINGS and ANTIFUNGAL RESISTANCE TRENDS

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ABSTRACT

Candida parapsilosis has become increasingly significant, particularly in catheter-associated infections and invasive candidiasis cases. As a healthcare-associated pathogen, it is notable for its potential to develop antifungal resistance and its association with high mortality rates. This study aims to evaluate the clinical characteristics, hospitalization units, and antifungal susceptibility profiles of patients with *C. parapsilosis* infections. All *C. parapsilosis* strains isolated from various clinical samples between 2021 and 2024 at Van Training and Research Hospital were retrospectively analyzed. Species identification and antifungal susceptibility testing were performed using the VITEK 2 (bioMérieux, France) automated system. Patient data, including age, sex, hospitalization unit, sample type, co-infecting pathogens, and antifungal susceptibility results were reviewed. The study included 42 patients with a mean age of 36.6 years, of whom 57.1% were male and 42.9% were female. Recurrent *C. parapsilosis* isolation was detected in 40.4% of cases. The most common source of isolation was blood culture 31 (80.9%). Of the patients, 78.7% were in intensive care units, 16.6% in general wards, and 4.7% were outpatients. Co-infections with *C. albicans* (n=2), *C. tropicalis* (n=1), and *S. epidermidis* (n=1) were observed, all of whom had fatal outcomes. The overall mortality rate was 59.5%. Resistance rates were 9.5% for fluconazole, 4.7% for voriconazole, 7.1% for caspofungin, 2.3% for micafungin (with 4.7% intermediate susceptibility), and 7.1% for amphotericin-B. Our findings indicate that *C. parapsilosis* is a prevalent pathogen, particularly in intensive care patients, and is associated with high mortality rates. Fluconazole resistance highlights the need for careful selection of empirical antifungal therapy.

Keywords: *Candida parapsilosis*, Candidemia, Antifungal susceptibility.

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CANDİDA PARAPSİLOSİS KAYNAKLI ENFEKSİYONLAR: KLİNİK BULGULAR VE ANTİFUNGAL DİRENÇ EĞİLİMLERİ

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ÖZET

Candida parapsilosis, özellikle kateter ilişkili enfeksiyonlar ve invaziv kandidiyaz vakalarında giderek daha fazla önem kazanmaktadır. Sağlık hizmetleriyle ilişkili enfeksiyonlar arasında yer alan bu etken, antifungal direnç gelişimi ve yüksek mortalite oranları ile dikkat çekmektedir. Bu çalışmada, *C. parapsilosis* izole edilen hastaların klinik özellikleri, yatış birimleri ve antifungal duyarlılık profillerinin değerlendirilmesi amaçlanmıştır. Van Eğitim ve Araştırma Hastanesi'nde 2021-2024 yılları arasında çeşitli klinik örneklerden izole edilen tüm *C. parapsilosis* suşları retrospektif olarak değerlendirildi. Tür tanımlaması ve antifungal duyarlılık testleri, VITEK 2 (bioMérieux, Fransa) otomatize sistemi kullanılarak gerçekleştirildi. Hastaların yaş, cinsiyet, yatış birimi, kültür örneği tipi, eşlik eden enfeksiyon etkenleri ve antifungal duyarlılık test sonuçları analiz edildi. Çalışmaya dâhil edilen 42 hastanın yaş ortalaması 36,6 olup, %57,1'i erkek ve %42,9'u kadındı. Hastaların %40,4'ünde tekrarlayan *C. parapsilosis* izolasyonu saptandı. Etkenlerin en sık kan kültürlerinden 31 (%80,9) izole edildiği gözlendi. Hastaların %78,7'si yoğun bakım ünitesinde, %16,6'sı servislerde ve %4,7'si poliklinikte takip edilmekteydi. Eşlik eden patojen olarak 2 hastada *C. albicans*, 1 hastada *C. tropicalis* ve 1 hastada *S. epidermis* izole edildi ve bu hastaların tamamının exitus olduğu gözlendi. Genel mortalite oranı ise %59,5 olarak belirlendi. İzolatların flukonazol direnci %9,5, vorikonazol %4,7, kaspofungin %7,1, mikafungin %2,3 (orta duyarlı %4,7) ve amfoterisin-B %7,1 olarak saptandı. Çalışma bulgularımız, *C. parapsilosis*'in özellikle yoğun bakım hastalarında sık rastlanan bir patojen olduğunu ve yüksek mortalite oranları ile ilişkilendirildiğini ortaya koymaktadır. Flukonazol direnci, ampirik antifungal tedavi seçiminde dikkatli olunması gerektiğini göstermektedir.

Anahtar Kelimeler: *Candida parapsilosis,* Kandidemi, Antifungal duyarlılık.

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THE PLACE of *in VITRO* and *in VIVO* STUDIES in ONCOLOGY

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ABSTRACT

Cancer is one of the leading causes of death in the world and its mortality rate and incidence are increasing day by day. A lot of work is being done to reveal the mechanisms responsible for the formation of the disease, to find new and effective treatment methods, and to prevent relapse after treatment. The success of the studies is achieved by better understanding the biological, genetic, and cellular interactions of tumor cells and their microenvironment. This review evaluates the purposes and contributions of *in vitro* and *in vivo* methods used in cancer research. *In vitro* methods used in oncology can provide information about proliferation, migration, intravasation, extravasation, angiogenesis, and drug distribution in tumor cells. In vitro tumor models have developed rapidly, especially with the development of tissue engineering and biomaterials. Each method is designed to examine a specific aspect of cancer or to support a specific research goal. These are two (2D) and three-dimensional (3D) cell culture, avascular microfluidic models, cell-transition modules, co-culture models, tumor-microvessel models, 3D models with bioprinting, hybrid models (Microfluidic + 3D models), colony formation assay, epithelial-mesenchymal transition (EMT) models, hypoxia model systems, cancer stem cell models, CRISPR/Cas9-based genetic models. *In vivo* studies have an important place among in vitro and clinical studies. These studies are important for observing the effects of new treatment strategies and understanding how the tumor behaves in the body. These are xenograft models, genetically modified mouse models, chemically induced models, transgenic mouse models, implantation models. Studies have shown that these methods are promising but new methods and studies, including different molecular techniques, are still needed to understand cancer.

Keywords: Cancer, *In Vitro* models, *In Vivo* models, Oncology

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ONKOLOJİDE *in VİTRO* VE *in VİVO* ÇALIŞMALARIN YERİ

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ÖZET

Kanser, dünyada önde gelen ölüm nedenlerinden birisidir ve mortalite oranı ile insidansı her geçen gün artmaktadır. Hastalığın oluşumundan sorumlu mekanizmaların ortaya çıkarılması, yeni ve etkili tedavi yöntemlerinin bulunması, tedavi sonrası nüksün önlenmesi için çok fazla çalışma yapılmaktadır. Çalışmaların başarısı tümör hücrelerinin ve mikroçevresinin biyolojik, genetik, hücresel etkileşimler yönünden daha iyi anlaşılmasıyla gerçekleşir. Bu derleme, kanser araştırmalarında kullanılan *in vitro* ve *in vivo* yöntemlerin amaç ve katkılarını değerlendirmektedir. Onkolojide kullanılan *in vitro* yöntemler, tümör hücresinde proliferasyon, migrasyon, intravazasyon, ekstravazasyon, anjiogenez ve ilaç dağılımı ile ilgili bilgiler verebilir. Özellikle doku mühendisliği ve biyomalzemelerin gelişimi ile *in vitro* tümör modelleri hızla gelişmiştir. Her bir yöntem, kanserin belirli bir yönünü incelemek veya belirli bir araştırma hedefini desteklemek için tasarlanmıştır. Bunlar, iki (2D) ve üç boyutlu (3D) hücre kültürü, avasküler mikroakışkan modeller, hücre-geçişli modüller, ko-kültür modeller, tümör-mikrodamar modelleri, biyoyazılım ile 3D modeller, hibrit modeller (Mikroakışkan +3D modeller), koloni oluşturma testi, epitelyal-mezenşimal geçiş (EMT) modelleri, hipoksi model sistemleri, kanser kök hücre modelleri, CRISPR/Cas9 tabanlı genetik modellerdir. *İn vivo* çalışmalar ise *in vitro* ve klinik çalışmalar arasında önemli bir yer tutar. Bu çalışmalar yeni tedavi stratejilerinin etkisini gözlemlemek ayrıca tümörün vücutta nasıl davrandığını anlamak için önemlidir. Bunlar, ksenograft modeller, genetiği değiştirilmiş fare modelleri, kimyasal olarak indüklenen modeller, transjenik fare modelleri, implantasyon modelleridir. Çalışmalar bu yöntemlerin umut verici olduğunu ancak hala kanseri anlamak için farklı moleküler teknikleri de içeren yeni yöntemlere ve çalışmalara gereksinim olduğunu göstermiştir.

Anahtar Kelimeler: Kanser, *İn vitro* modeller, *İn vivo* modeller, Onkoloji

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RELATIONSHIP between MICROBIOTA AWARENESS, PROBIOTIC FOOD CONSUMPTION FREQUENCY and ORTHOREXIA NERVOSA in HEALTH PROFESSIONAL CANDIDATES: DESCRIPTIVE RESEARCH

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ABSTRACT

This study aims to evaluate the relationship between Orthorexia Nervosa and probiotic food consumption frequencies and microbiota awareness levels in university students. This cross-sectional and descriptive study was conducted with 275 volunteer participants in the Health Sciences, Medicine, Pharmacy and Dentistry Faculties. Data were collected via an online survey. A 10-question Sociodemographic Form including demographic and anthropometric measurement features, a Probiotic Food Consumption Frequency Form consisting of 14 food categories, a Microbiota Awareness Scale to evaluate microbiota awareness levels, and ORTO-11 to evaluate orthorexia tendencies were used. Data were analyzed with the SPSS 22.0 program. The participants' ORTO-11 mean score was 24.68±6.3, and the Microbiota Awareness Scale mean score was 70.6±18.03. No significant difference was found between the frequency of probiotic food consumption and ON ($p>0.05$). A positive correlation was found between the Microbiota Awareness Scale scores and the ORTO-11 scale ($p<0.05$). It was found that Microbiota Awareness Scale scores affected ORTO-11 by 16.4% (R=0.164), and a 1-unit increase in the Microbiota Awareness Scale score increased ORTO-11 by 0.057 (B=0.057) points, and this was statistically significant ($p<0.05$). Our results indicate that the orthorexia tendency decreased as the participants microbiota awareness levels increased. While there is no study on microbiota awareness with orthorexia in the literature, the number of studies on probiotic consumption with orthorexia is quite limited. In this context, studies on orthorexia, microbiota awareness and probiotic consumption in a large sample will help shed light on this issue.

Keywords: Microbiota, Awareness, Probiotics, Orthorexia nervosa

*****This study was produced from Asmin Yavuz's thesis titled "The Relationship Between Probiotic Food Consumption Frequency and Microbiota Awareness Levels with Orthorexia Nervosa among University Students" (Bahçeşehir University, 2024).

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SAĞLIK PROFESYONELİ ADAYLARINDA MİKROBİYOTA FARKINDALIĞI, PROBİYOTİK BESİN TÜKETİM SIKLIĞI VE ORTOREKSİYA NERVOZA İLİŞKİSİ: TANIMLAYICI ARAŞTIRMA

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ÖZET

Bu çalışma, üniversite öğrencilerinde Ortoreksiya Nervoza ile probiyotik besin tüketim sıklıkları ve mikrobiyota farkındalık düzeyleri ilişkisini değerlendirmek amacıyla planlanmıştır. Kesitsel ve tanımlayıcı tipte olan bu araştırma Sağlık bilimleri, Tıp, Eczacılık ve Diş Hekimliği Fakültelerinde okuyan 275 gönüllü katılımcı ile yürütülmüştür. Veriler E-anket aracılığı ile toplanmıştır. Demografik ve antropometrik ölçüm özellikleri içeren 10 soruluk bir Sosyodemografik Form, 14 besin kategorisinden oluşan Probiyotik Besin Tüketim Sıklık Formu, mikrobiyota farkındalık düzeylerini değerlendirmek için MFÖ ve ortoreksiya eğilimlerini değerlendirebilmek amacıyla ORTO-11 kullanılmıştır. Veriler SPSS 22.0 programı ile analiz edilmiştir. Katılımcıların ORTO-11 puan ortalaması 24,68±6,3 olup, MFÖ puan ortalaması ise 70,6±18,03'tür. Probiyotik besin tüketim sıklıkları ile ON arasında anlamlı bir fark bulunmamıştır (p>0.05). MFÖ puanları ile ORTO-11 ölçeği arasında pozitif yönde bir korelasyon saptanmıştır (p<0.05). MFÖ'nün ORTO-11'i %16,4 (R=0,164) oranında etkilediği, MFÖ puanındaki 1 birimlik artışın ORTO-11'i 0,057 (B=0,057) puan artırdığı ve bunun istatistiksel olarak anlamlı olduğu saptanmıştır (p<0.05). Sonuçlarımız, katılımcılarda mikrobiyota farkındalık düzeylerinin artmasıyla ortoreksiya eğiliminin azaldığına işaret etmektedir. Literatürde ortoreksiya ile mikrobiyota farkındalığı üzerine yapılmış çalışma bulunmamakla birlikte ortoreksiya ile probiyotik tüketimi ile ilgili yapılan çalışma sayısı oldukça sınırlıdır. Bu kapsamda ortoreksiya, mikrobiyota farkındalığı ve probiyotik tüketimi ile geniş örneklemde yapılacak çalışmalar bu konuyu aydınlatmaya yardımcı olacaktır.

Anahtar Kelimeler: Mikrobiyata, Farkındalık, Probiyotikler, Ortoreksiya nervoza

*Bu çalışma Asmin Yavuz'un "Üniversite Öğrencilerinde Probiyotik Besin Tüketim Sıklığı ve Mikrobiyota Farkındalık Düzeylerinin Ortoreksiya Nervoza ile İlişkisi" isimli tezden üretilmiştir (Bahçeşehir Üniversitesi, 2024).

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FORENSIC GENETIC HEALTH SERVICES

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ABSTRACT

Forensic genetics plays a critical role in solving crimes and significantly contributes to justice through identification and evidence analysis. This study will evaluate the contributions of forensic genetics to the criminal justice system in light of existing literature, emphasizing the importance of this field in forensic investigations. DNA fingerprinting, preliminary and confirmatory tests, and serological analyses are among the effective methods used to elucidate events. While preliminary tests detect the presence of biological fluids, confirmatory tests provide reliable results by validating these findings. Various techniques are available for DNA extraction, structuring, and quantification. Polymerase chain reaction (PCR) and electrophoresis are important tools in genetic polymorphism analyses. The analysis of mixed DNA samples has advanced significantly with the introduction of new technologies. Additionally, DNA analysis of skeletal remains aids in identifying victims of disasters, while plant and animal evidence contributes to solving crimes at the crime scene. Next-generation sequencing stands out as a revolutionary application in the field of forensic genetics. Statistical analyses and competitive software play a vital role in interpreting DNA data. Furthermore, epigenetics provides valuable information for age estimation and identification processes. While laboratory accreditation enhances the reliability of analyses, forensic genetic services must be supported by continuous development and training. Adhering to standards in this field increases the capacity to provide effective solutions at the international level. In conclusion, forensic genetics is critically important for the provision of justice and plays a significant role in creating a more effective justice system through scientific advances.

Keywords: Forensic genetics, Forensic sciences, DNA, Identification.

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ADLİ GENETİK SAĞLIK HİZMETLERİ

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ÖZET

Adli genetik, suçların çözümünde kritik bir rol oynamakta, kimlik tayini ve delil analizi ile adalete önemli katkılar sağlamaktadır. Bu çalışmada, adli genetik biliminin kriminal adalet sistemine olan katkıları, mevcut literatür ışığında değerlendirilecek ve bu alanın adli araştırmalardaki önemi vurgulanacaktır. DNA parmak izi, öncül ve doğrulayıcı testler ile serolojik analizler, olayların aydınlatılmasında etkili yöntemlerdendir. Öncül testler, biyolojik sıvıların varlığını tespit ederken, doğrulayıcı testler bu bulguları kesinleştirerek güvenilir sonuçlar sunar. DNA'nın çekitlenmesi, yapı ve miktar tayini için çeşitli teknikler mevcuttur. Polimeraz zincir reaksiyonu (PCR) ve elektroforez, genetik polimorfizm analizlerinde önemli araçlar olarak öne çıkar. Karışık DNA örneklerinin analizi, yeni teknolojilerin katkısıyla büyük ilerlemeler kaydetmiştir. Ayrıca, iskelet kalıntılarından yapılan DNA analizi, felaketlerin kimliklendirilmesine yardımcı olurken, bitki ve hayvan delilleri de olay yerindeki suçların çözümüne önemli katkılar sağlamaktadır. Yeni nesil dizileme, adli genetik alanında devrim niteliğinde bir uygulama olarak dikkat çekmektedir. İstatistiksel analizler ve rekabetçi yazılımlar, DNA verilerinin yorumlanmasında hayati bir yer tutar. Ayrıca, epigenetik bilim dalı, yaş tahmini ve kimliklendirme süreçlerine faydalı veriler sunmaktadır. Laboratuvar akreditasyonu, yapılan analizlerin güvenilirliğini artırırken, adli genetik hizmetlerinin sürekli gelişim ve eğitimle desteklenmesi gerekmektedir. Bu alandaki standartlara uyum, uluslararası düzeyde etkili çözümler sunma kapasitesini artırmaktadır. Sonuç olarak, adli genetik disiplinleri, adaletin sağlanmasında kritik bir öneme sahip olup, bilimsel ilerlemelerle birlikte daha etkili bir adalet sistemi oluşturma yolunda önemli bir destekçi konumundadır.

Anahtar Kelimeler: Adli genetic, Adli bilimler, DNA, Kimliklendirme.

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MOLECULAR INVESTIGATION of ANAPLASMA PHAGOCYTOPHILUM in IXODID TICKS in MERSIN REGION

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ABSTRACT

Anaplasma phagocytophilum (A. phagocytophilum) is a tick-borne, intra-granulocytic, Gram-negative pleomorphic alpha-proteobacterium that causes Human Granulocytic Anaplasmosis (HGA). In healthy individuals, it tends to be self-limiting, whereas in immunocompromised individuals and those over 60 years old. The case fatality rate is reported to be less than 1%. A. phagocytophilum is transmitted by Ixodid ticks and can cause various diseases in cats, dogs, horses, and ruminants. This study aimed to investigate the presence of A. phagocytophilum in Ixodid ticks in the Mersin region using molecular methods. A total of 1,497 adult Ixodid ticks were collected from six different locations in the Tarsus, Erdemli, and Silifke districts between April 1 and November 30, 2020. The ticks were obtained from both natural habitats and domestic animals. Morphological identification using a stereo microscope revealed 11 species belonging to the Hyalomma, Rhipicephalus, Haemaphysalis, and Dermacentor genera. The ticks were classified based on collection sites, genera, species, and gender, forming 210 tick pools. This study was supported by the Mersin University Scientific Research Projects Unit under project code 2020-1-TP3-4027. DNA isolation was performed on tick pools, and PCR targeting the common gene region of Anaplasma/Ehrlichia genera was applied to all isolates. Nine pools (4.3%) tested positive for genus-level DNA. A. phagocytophilum DNA was analyzed using Nested PCR and Real-time PCR, targeting the Msp2 gene region. Two tick pools, one containing Hyalomma excavatum and the other Rhipicephalus sanguineus, collected in Tarsus-Çağbaşı-Çiçekli in July 2020, were found to be positive for A. phagocytophilum DNA. The prevalence of A. phagocytophilum in Ixodid ticks in the study area was determined as 0.95% (2/210). Nested PCR and Real-time PCR methods were found to be statistically consistent ($p<0.001$), with a Cohen's kappa coefficient of $\kappa=+1$. This study demonstrates the presence of A. phagocytophilum in Ixodid ticks in the Mersin region, emphasizing the importance of large-scale epidemiological research. Conducting studies in regions with different climatic characteristics may lead to the identification of more tick species and a broader range of epidemiological data. Furthermore, seasonal variations in tick activity are considered significant in the spread of pathogens.

Keywords: Anaplasma phagocytophilum, Ixodid tick, Prevalence, Mersin region

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MERSİN YÖRESİ'NDE IXODID KENELERDE ANAPLASMA PHAGOCYTOPHİLUM'UN MOLEKÜLER YÖNTEMLE ARAŞTIRILMASI

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ÖZET

Anaplasma phagocytophilum (A. phagocytophilum), İnsan Granulositik Anaplazmoz'una (HGA) neden olan, kene kaynaklı, intra-granulositik, Gram negatif pleomorfik bir alpha-proteobakteridir. Sağlıklı bireylerde kendini sınırlama eğiliminde olup, bağışıklığı baskılanmış kişilerde ve 60 yaş üstü bireylerde ölümcül komplikasyonlara yol açabilir. Ixodid kenelerle taşınan A. phagocytophilum, kedi, köpek, at ve ruminantlarda da farklı hastalıklara sebep olmaktadır. Bu çalışmada, Mersin yöresinde Ixodid kenelerde A. phagocytophilum varlığının moleküler yöntemlerle araştırılması amaçlanmıştır. Tarsus, Erdemli ve Silifke ilçelerinin altı farklı bölgesinden 1 Nisan - 30 Kasım 2020 tarihleri arasında doğal alanlardan ve evcil hayvanlar üzerinden 1497 ergin Ixodid kene toplanmıştır. Stereo mikroskopla yapılan morfolojik incelemelerde Hyalomma, Rhipicephalus, Haemaphysalis ve Dermacentor cinslerine ait 11 tür belirlenmiş ve bu keneler toplama noktalarına, soylarına, türlerine ve cinsiyetlerine göre 210 havuza ayrılmıştır. Çalışma, Mersin Üniversitesi Bilimsel Araştırma Projeleri Birimi tarafından 2020-1-TP3-4027 koduyla desteklenmiştir. Kene havuzlarından DNA izolasyonu gerçekleştirilmiş, tüm izolatlara Anaplasma/Ehrlichia soylarına özgü PZR uygulanmıştır. 9 havuzda (%4,3) soy DNA'sı tespit edilmiştir. A. phagocytophilum DNA'sı, Msp2 gen bölgesine yönelik Nested PZR ve Real-time PZR ile analiz edilmiştir. Tarsus-Çağbaşı-Çiçekli bölgesinden Temmuz 2020'de toplanan Hyalomma excavatum ve Rhipicephalus sanguineus türü kenelerin bulunduğu iki farklı havuzda A. phagocytophilum DNA'sı tespit edilmiştir. Bölgede Ixodid kenelerde A. phagocytophilum prevalansı %0,95 (2/210) olarak belirlenmiştir. Nested PZR ve Real-time PZR yöntemleri, istatistiksel olarak uyumlu bulunmuş ($p<0,001$), Cohen'in kappa testi ile $\kappa=+1$ olarak hesaplanmıştır. Bu çalışma, Mersin yöresinde Ixodid kenelerde A. phagocytophilum varlığını ortaya koyarak, geniş çaplı epidemiyolojik araştırmaların gerekliliğini vurgulamaktadır. Farklı iklim özelliklerine sahip bölgelerde yapılan çalışmalar, daha fazla kene türü ve daha kapsamlı epidemiyolojik verilere ulaşılmasına katkı sağlayacaktır. Ayrıca, kenelerin aktivite dönemlerindeki artış ve azalışlar, patojen yayılımı açısından önemli görülmektedir.

Anahtar Kelimeler: Anaplasma phagocytophilum, İxodid kene, Prevalans, Mersin Yöresi

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ANTİBİOTİC RESİSTANCE of SALMONELLA STRAİNS ISOLATED from STOOL and EXTRAİNTESTİNAL CULTURES

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ABSTRACT

Salmonella infections are among the most frequently encountered infectious diseases worldwide and are recognized as a significant public health concern. *Salmonella* species are important enteropathogens that can cause widespread food- and waterborne infections. These infections can present with various clinical manifestations, including enteric fever, acute gastroenteritis, bacteremia, and invasive septic infections. Moreover, the increasing prevalence of strains resistant to commonly used antibiotics restricts treatment options and highlights the necessity for alternative therapeutic approaches. The aim of this study is to retrospectively analyze the antibiotic resistance profiles and infection incidence of *Salmonella* strains isolated from various clinical samples sent to the Department of Medical Microbiology at Mersin University Faculty of Medicine between January 2022 and December 2024. This retrospective study was conducted over a three-year period from January 2022 to December 2024 and included *Salmonella* strains isolated from stool and extraintestinal samples (peripheral blood, urine, and tissue cultures). *Salmonella* strains were identified using conventional culture methods and the Vitek-2 automated system. Antibiotic susceptibility testing was performed using the disk diffusion method in accordance with EUCAST criteria. A total of 41 *Salmonella* strains were isolated, of which 68.3% (28/41) were obtained from stool samples and 31.7% (13/41) from extraintestinal samples. Among the infected patients, 51.2% were children, while 48.8% were adults. Antibiotic resistance analysis revealed that 10.7% of the *Salmonella* strains isolated from stool cultures were resistant to ampicillin, 14.3% to ciprofloxacin, and 7.1% to trimethoprim-sulfamethoxazole. Among the strains isolated from extraintestinal cultures, 15.4% were resistant to ampicillin, 7.7% to ciprofloxacin, 7.7% to trimethoprim-sulfamethoxazole, and 7.7% to ceftriaxone. *Salmonella* infections are particularly common among pediatric patients, and antibiotic resistance poses a significant public health threat. Due to the observed resistance to commonly used antibiotics such as ampicillin and ciprofloxacin, treatment should be guided by antibiotic susceptibility test results to ensure appropriate management.

Keywords: *Salmonella* spp., Antibiotic resistance, Clinical isolation, Epidemiology

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DIŞKI VE BAĞIRSAK DIŞI KÜLTÜRLERDEN İZOLE EDİLEN SALMONELLA SUŞLARININ ANTİBİYOTİK DİRENCİ

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ÖZET

Salmonella enfeksiyonları dünya çapında sık görülen ve halk sağlığı problemi olarak kabul edilen enfeksiyon hastalıklarından biridir. Salmonella türleri, gıda ve su kaynaklı enfeksiyonlarla yaygın hastalık yapabilen önemli enteropatojenlerdir. Salmonella çeşitli klinik tablolarla seyredebilir; bunlar arasında enterik ateş, akut gastroenterit, bakteriyemi ve invaziv septik enfeksiyonlar yer almaktadır. Ayrıca yaygın kullanılan antibiyotiklere dirençli suşların giderek yaygınlaşması, tedavi seçeneklerini kısıtlamakta ve alternatif yaklaşımların gerekliliğini ortaya koymaktadır. Bu çalışmanın amacı, Ocak 2022- Aralık 2024 tarihleri arasında Mersin Üniversitesi Tıp Fakültesi Tıbbi Mikrobiyoloji Anabilim Dalı'na gönderilen çeşitli klinik örneklerden izole edilen Salmonella suşlarının antibiyotik direnç profillerini ve enfeksiyon insidansını retrospektif olarak incelemektir. Çalışma, Ocak 2022- Aralık 2024 tarihleri arasında üç yıllık sürede dışkı ve bağırsak dışı örneklerden (periferik kan, idrar ve doku kültürleri) izole edilen Salmonella suşları retrospektif olarak incelenmiştir. Salmonella suşları, konvansiyonel kültür yöntemleri ve Vitek-2 Otomatize sistem ile tanımlanmış, antibiyotik duyarlılık testleri EUCAST kriterlerine göre disk difüzyon yöntemiyle gerçekleştirilmiştir. Toplamda 41 Salmonella suşu izole edilmiş olup, bunların %68,3'ü (28/41) dışkı, %31,7'si (13/41) ise bağırsak dışı örneklerden elde edilmiştir. Enfekte hastaların %51,2'sini çocuk, %48,8'ini ise yetişkin vakalar oluşturmaktadır. Dışkı kültürlerinden izole edilen Salmonella suşlarının %10,7'sinin ampisiline, %14,3'ünün siprofloksasine ve %7,1'inin trimetoprim-sülfametoksazole, bağırsak dışı kültürlerden izole edilen suşların ise %15,4'ü ampisiline, %7,7'si siprofloksasine, %7,7'si trimetoprim-sülfametoksazole ve %7,7'si seftriaksona dirençli olarak bulunmuştur. Salmonella enfeksiyonları, özellikle çocuk hastalarda sık görülmektedir ve antibiyotik direnci, halk sağlığı açısından önemli bir tehdit oluşturmaktadır. Ampisilin ve siprofloksasin gibi yaygın kullanılan antibiyotiklere karşı görülen direnç sebebiyle antibiyotik duyarlık sonucuna göre tedavi verilmesi uygun olacaktır.

Anahtar Kelimeler: Salmonella spp., Antibiyotik direnci, Klinik izolasyon, Epidemiyoloji.

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MOLECULAR CHARACTERİZATİON of CORONAVİRUSES in PATİENTS with RESPİRATORY SYMPTOMS

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ABSTRACT

In the last 20 years, new members of the Coronaviridae family have become a global public health issue due to their high transmission rates and variable mortality rates. This preliminary study aims to evaluate the circulation of potential CoV types in patients presenting with respiratory symptoms at Mersin University Medical Faculty Hospital, by targeting all Coronaviruses (CoV) through reverse transcription-polymerase chain reaction (RT-PCR) and sequencing analysis, followed by phylogenetic analysis..Between September 15, 2023, and December 18, 2023, 60 nasopharyngeal swab samples were collected from patients with respiratory symptoms who applied to the Department of Medical Microbiology, Molecular Laboratory of Mersin University, and included in the study. First, Initially, nucleic acid purification of these samples was performed using the innuPREP Virus DNA/RNA Kit (ST Innuscreen GmbH, Germany) following the manufacturer's recommendations. Subsequently, cDNA synthesis was carried out using the RevertAid™ First Strand cDNA Synthesis Kit (Thermo Scientific™, #K16291). RT-PCR targeting the conserved RNA-dependent RNA polymerase (RdRp) genomic region, which is common to all members of the Orthocoronavirinae subfamily, was applied. To determine the length of the amplified gene region, agarose gel electrophoresis was performed. The specific RdRp gene region was sequenced using the BigDye Terminator v3.1 Cycle Sequencing Kit (Applied Biosystems, USA), and the Cycle Sequence PCR was carried out for both sense and antisense strands. After the purification process, sequencing reactions were analyzed by electrophoresis using the ABI PRISM 3130XL Genetic Analyzer (Applied Biosystems, Foster City, CA, USA). According to RT-PCR results, 13 out of 60 samples (21.6%) were found to be CoV-positive. The sequencing analysis results were compared with reference sequences in the BLAST, NCBI database. Among the sequenced samples, 5 (83.3%) were identified as SARS-CoV-2, and 1 (16.7%) as HCoV-OC43. The sequences of the remaining seven samples could not be determined. This preliminary study demonstrated the circulation of the pandemic-causing SARS-CoV-2 among patients presenting with respiratory symptoms at the hospital.

Keywords: Coronavirus, Pancoronavirus, RT-PCR

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SOLUNUM YOLU SEMPTOMU OLAN HASTALARDA KORONOVİRUSLARIN MOLEKÜLER KARAKTERİZASYONU

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ÖZET

Son 20 yılda, Coronaviridae ailesinin yeni üyeleri yüksek bulaşma oranı ve değişken ölüm oranlarıyla dünya genelinde halk sağlığı sorunu haline gelmiştir. Bu ön çalışmada, Mersin Üniversitesi Tıp Fakültesi Hastanesi'ne solunum semptomları ile başvuran hastalarda bütün Coronavirusları (CoV) hedefleyen RT-PCR ve dizi analizi yöntemleri ile filogenetik analiz kullanarak olası CoV tiplerinin sirkülasyonunun değerlendirilmesi amaçlanmıştır. 15 Eylül 2023 - 18 Aralık 2023 tarihleri arasında, Mersin Üniversitesi Tıp Fakültesi Hastanesi, Tıbbi Mikrobiyoloji Anabilim Dalı, Moleküler Laboratuvarı'na başvuran solunum semptomu olan hastalara ait 60 nasofaringeal sürüntü örneği çalışmaya dahil edilmiştir. Öncelikle bu örneklerin nükleik asit saflaştırılması, innuPREP Virus DNA/RNA Kit (ST Innuscreen GmbH, Almanya) kullanılarak üretici firma önerileri doğrultusunda gerçekleştirilmiştir. Sonrasında, RevertAid™ First Strand cDNA Synthesis Kit (Thermo Scientific™, #K16291) ile cDNA sentezi yapılmıştır. Sonrasında Orthocoronavirinae ailesinin tüm üyeleri için ortak olan korunmuş RNA'ya bağımlı RNA polimeraz (RdRp) genom bölgesini hedefleyen RT-PCR tekniği uygulanmıştır. RT-PCR'da amplifiye edilen gen bölgesinin uzunluğunu saptamak için agaroz jel elektroforez tekniği kullanımıştır. Spesifik RdRp gen bölgesi, BigDye Terminator v3.1Cycle Sequencing Kit (Applied Biosystems, ABD) kullanarak, sense ve antisense zincirinin "Cycle Sequence" PCR'ı yapılmıştır. Saflaştırma işlemi sonrasında, "ABI PRISM 3130XL Genetic Analyzer" (Applied Biosystems, Foster City, CA, ABD) otomatize DNA dizi analizi cihazında, reaksiyon ürünlerinin elektroforez işlemi gerçekleştirilmiştir. RT-PCR sonuçlarına göre, 60 örneğin 13'ünde (%21,6) CoV pozitifliği tespit edilmiştir. Örneklerin dizi analizi sonucunda BLAST, NCBI veritabınındaki referans dizilerle karşılaştırılması yapılmıştır.Bu örneklerden 6'sının dizi analizi okunmuş, bunlardan 5'i SARS-CoV-2 (%83,3), 1'i HCoV-OC43 (%16,7) olarak belirlenmiştir. Diğer 7 örneğin dizisi okunamamıştır. Bu ön çalışmada, solunum yolu semptomları ile hastaneye başvuran hastalar arasında pandemi etkeni SARS-CoV-2 sirkülasyonu belirlenmiştir.

Anahtar Kelimeler: Koronavirus, Pankoronavirus, RT-PZR.

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DETERMINATION and MOLECULAR CHARACTERIZATION of ENTERIC ADENOVIRUSES in the STOOL SAMPLES OF PATIENTS with GASTROENTERITIS SYMPTOMS

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ABSTRACT

The main causative agents of viral gastroenteritis are rotavirus, enteric adenovirus, norovirus, and astrovirus**.** Rotaviruses and enteric adenoviruses are the most common viral causes of acute gastroenteritis, followed by noroviruses and astroviruses. More than 100 adenovirus serotypes that cause disease in humans have been identified, with HAdV-40 and HAdV-41 being specifically associated with gastroenteritis.In this thesis study, it was aimed to molecular detection of HAdVs by targeting the hexon gene region in stool samples of patients who applied to Mersin University Faculty of Medicine Hospital with gastroenteritis symptoms or were hospitalized with a diagnosis of acute gastroenteritis, and then to typing them by molecular characterization with phylogenetic analysis. Totally, 259 watery stool samples of diarrheal patients who came to Mersin University Faculty of Medicine Hospital, Department of Medical Microbiology, Bacteriology and Parasitology Laboratory were included in the study. Nucleic acid isolation was performed from stool samples using the innuPREP Virus DNA/RNA Kit (IST Innuscreen GmbH, Germany). PCR amplification was performed using specific primer sequences targeting the hexon gene. Region of the HAdV genome. PCR products were sequenced using the BigDye Terminator v3.1 Cycle Sequencing Kit (Applied Biosystems, USA) with sense and antisense strands. The electrophoresis process was performed using the ABI PRISM 3130XL Genetic Analyzer**.** The sequence analysis results were uploaded to the NCBI-BLAST program**,** compared with GenBank data, and possible HAdV genotyping was conducted. As a result of RT-PCR, a band was obtained in the positive control alignment in 6 out of 259 samples (2.31%). By comparing the edited sequence analysis data with BLAST and NCBI database, it was determined that 4 samples were HAdV 41 and 1 sample was HAdV 3. The obtained data showed the frequency of HAdV in stool samples of patients with gastrointestinal symptoms. HAdV 41 and HAdV B3 were also determined as circulating genotypes in the enteric tract. HAdV isolates whose genotypes were determined by sequence analysis significantly contributed to the molecular epidemiology of HAdVs in gastroenteritis cases.

Keywords: Adenovirus; Stool, Hexon gene, PCR, Sequence analysis.

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GASTROENTERİT SEMPTOMU OLAN HASTALARIN DIŞKILARINDA ENTERİK ADENOVİRÜSLERİN BELİRLENMESİ VE MOLEKÜLER KARAKTERİZASYONU

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ÖZET

Viral gastroenteritlerin başlıca etkenleri rotavirüs, enterik adenovirüs, norovirüs ve astrovirüslerdir. Rotavirüsler ve enterik adenovirüsler, akut gastroenteritin en yaygın viral nedenlerindendir, onları norovirüsler ve astrovirüsler takip etmektedir. İnsanlarda hastalık yapan 100'den fazla adenovirüs serotipi tanımlanmış olup, özellikle HAdV-40 ve HAdV-41 gastroenterit ile ilişkilendirilmiştir. Bu tez çalışmasında, Mersin Üniversitesi Tıp Fakültesi Hastanesi'ne gastroenterit semptomları ile başvuran veya akut gastroenterit tanısı ile yatışı yapılmış hastalara ait dışkı örneklerinde HAdV'lerin hexon gen bölgesi hedeflenerek moleküler olarak saptanması ve sonrasında filogenetik analiz ile moleküler karakterizasyonu yapılarak tiplendirilmesi amaçlandı. Çalışmaya, Mersin Üniversitesi Tıp Fakültesi Hastanesi, Tıbbi Mikrobiyoloji Anabilim Dalı, Bakteriyoloji ve Parazitoloji Laborotuvarına gelen ishalli hastalara ait 259 sulu dışkı örneği dahil edildi. Dışkı örneklerinden innuPREP Virus DNA/RNA Kit (IST Innuscreen GmbH, Almanya) kullanılarak nükleik asit izolasyonu gerçekleştirildi. HAdV genomununun hekzon gen bölgesini hedefleyen spesifik primer dizileri kullanılarak PCR amplifikasyonu gerçekleştirildi. PCR ürünleri, BigDye Terminator v3.1 Cycle Sequencing Kit (Applied Biosystems, ABD) kullanılarak sense ve antisense zincirleriyle dizilendi. Elektroforez işlemi, ABI PRISM 3130XL Genetic Analyzer ile gerçekleştirildi. Dizi analiz sonuçları, NCBI-BLAST programına yüklenerek GenBank verileriyle karşılaştırıldı ve olası HAdV tiplendirilmesi yapıldı.RT-PCR sonucunda toplam 259 örneğin 6'sında (%2,31) pozitif kontrol hizasında bant elde edildi. Düzenlemesi yapılan dizi analizi verilerinin BLAST, NCBI veritabanında karşılaştırılması ile 4 örneğin HAdV 41 ve 1 örneğin HAdV 3 olduğu belirlendi. Elde edilen veriler ile gastrointestinal semptomu olan hastaların dışkı örneğinde HAdV görülme sıklığı gösterildi. Enterik kanalda da HAdV 41 ve HAdV B3'ün sirküle olan genotipler olarak belirlendi. Dizi analizi ile genotipleri belirlenen HAdV izolatları, gastroenterit olgularında HAdV'lerin moleküler epidemiyolojisine önemli katkı sağlamıştır.

Anahtar Kelimeler: Adenovirus, Dışkı, Hexon gen, PZR, Dizi analizi.

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METHODS to CREATE AN EXPERIMENTAL ALZHEIMER'S MODEL USING ALCL

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ABSTRACT

Studies on experimental Alzheimer's animal models are very important in understanding the pathogenesis of the disease and developing new treatment methods. When the burden of Alzheimer's disease is evaluated in terms of quality of life, the individual and his/her family, and the health system, it is therefore very important to elucidate the pathophysiology of this disease. There are various methods to create animal models of Alzheimer's disease. Some of these methods include surgical or neurotoxic agents in various parts of the brain or transgenic model development. In this study, experimental Alzheimer's model development using $AlCl_3$ will be discussed. However, there are also differences between the models developed using $AlCl_3$. Although no role of aluminium in human and animal biochemistry is known, it is used in everyday life for food preservation and as a colouring agent. Although the absorption of aluminium taken into the body is limited, it accumulates in the brain, heart, lungs and bones and shows toxic effects. Increasing the amount of aluminium in the food intake leads to aluminium accumulation, especially in the brain and spinal cord. Studies have shown that aluminium toxicity can lead to neurological diseases. In the present study, the findings that ocur/observed as a result of low dose and long term aluminium exposure in accordance with the human life cycle will be discussed.

Keywords: Alzheimer's Disease, $AlCl_3$, Experimental animal models

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ALCL$_3$ KULLANILARAK DENEYSEL ALZHEIMER MODELİ OLUŞTURMA YÖNTEMLERİ

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ÖZET

Deneysel Alzheimer hayvan modelleri üzerine yapılan çalışmalar, hastalığın patogenezinin anlaşılmasında ve yeni tedavi yöntemlerinin geliştirilmesinde oldukça önemlidir. Alzheimer hastalığının; yaşam kalitesi, kişinin kendisi ve ailesi, sağlık sistemi açısından getirdiği yük değerlendirildiğinde, bu hastalığın patofizyolojisinin aydınlatılması bu nedenle çok önemlidir. Alzheimer hayvan modelleri oluşturmak için çeşitli yöntemler mevcuttur. Beynin çeşitli bölgelerinde cerrahi veya nörotoksik ajanlarla harabiyet oluşturmak ya da transgenik model geliştirmek bu yöntemlerden birkaçıdır. Bu çalışmada $AlCl_3$ kullanılarak deneysel Alzheimer modeli geliştirmekten bahsedilecektir. Ancak $AlCl_3$ kullanılarak geliştirilen modeller arasında da farklılıklar mevcuttur. Alüminyumun insan ve hayvan biyokimyasında herhangi bir rolü bilinmese de günlük hayatta yiyeceklerin korunmasında ve renk verici madde olarak kullanılır. Vücuda alınan alüminyumun emilimi sınırlı da olsa beyin, kalp, akciğer ve kemiklerde birikerek toksik etki gösterir. Alınan besinlerde alüminyum miktarının artması özellikle beyin ve omurilikte alüminyum birikmesine yol açar. Yapılan çalışmalar alüminyum toksisitesinin nörolojik hastalıklara yol açabileceğini göstermiştir. Sunulan çalışmada insanın hayat döngüsüne uygun olacak şekilde düşük doz ve uzun süreli alüminyum maruziyeti sonucu oluşan/gözlenen bulgular tartışılacaktır.

Anahtar Kelimeler: Alzheimer Hastalığı, $AlCl_3$, Deneysel hayvan modelleri

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SYNTHESIS of A NOVEL COMPOUND as DITHIOCARBAMIC ACID ESTER and EVALUATION of DRUGLIKENESS

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ABSTRACT

Dithiocarbamate group organic compounds are a class of compounds that are the subject of a wide range of research in the medical field due to their broad pharmacological effects and functionalizable structures. In recent years, they have been investigated as potential drug candidates in the treatment of a wide variety of diseases, especially in various health fields such as neurology, cardiology, microbiology and ophthalmology. Dithiocarbamates are also used as precursor substances in the synthesis of various substances. In addition, they have shown enzyme inhibitory properties in biological systems and their use as catalysts of various enzymes has been investigated. Various studies investigating dithiocarbamate derivatives suggest that the inclusion of dithiocarbamates as active pharmacophores as side chains or bridges improves biological activity. The study, which includes the hybridization of dithiocarbamate and kojic acid with the molecular hybridization technique, aims to contribute to drug development studies. The potential drug-like properties of the compound (5-hydroxy-4-oxo-4H-pyran-2-yl)methyl 3-methylpiperidine-1-carbodithioate), whose synthesized and structure was proven with appropriate methods, were also evaluated using the *in silico* SwissADME tool as a potential drug candidate.

Keywords: Dithiocarbamate, Synthesis, Characterization

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DİTİYOKARBAMİK ASİT ESTERİ YENİ BİR BİLEŞİĞİN SENTEZİ VE İLAÇ BENZERİ ÖZELLİKLERİNİN DEĞERLENDİRİLMESİ

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ÖZET

Ditiyokarbamat grubu organik bileşikler, geniş farmakolojik etkileri ve işlevselleştirilebilir yapıları sayesinde tıp alanında oldukça geniş bir araştırma konusu olan bileşik sınıfıdır. Son yıllarda özellikle nöroloji, kardiyoloji, mikrobiyoloji ve oftalmoloji gibi çeşitli sağlık alanlarında çok çeşitli hastalıkların tedavisinde potansiyel ilaç adayları olarak araştırılmaktadır. Ditiyokarbamatlar çeşitli maddelerin sentezinde prekürsör madde olarak da kullanılmaktadır. Ayrıca biyolojik sistemlerde, enzim inhibitörü özellikler göstermiş ve çeşitli enzimlerin katalizörü olarak kullanımı araştırılmıştır. Ditiyokarbamat türevlerini araştıran çeşitli çalışmalar, ditiyokarbamatların aktif farmakofor olarak yan zincir veya köprü olarak bileşiğe dahil edilmelerinin biyolojik aktiviteyi iyileştirdiğini önerilmektedir. Moleküler hibridizasyon tekniği ile ditiyokarbamat ve kojik asitin hibridizasyonunu içeren çalışmayla, ilaç geliştirme çalışmalarına katkı sunulması amaçlanmaktadır. Sentezlenen ve yapısı uygun yöntemlerle kanıtlanan bileşiğin ((5-hidroksi-4-okso-4*H*-piran-2-il)metil 3-metilpiperidin-1-karboditiyoat), potansiyel bir aday olarak ilaç olabilirlik özellikleri de *in silico* SwissADME uygulaması kullanılarak değerlendirilmiştir.

Anahtar Kelimeler: Ditiyokarbamat, Sentez, Karakterizasyon

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THE ROLE and IMPORTANCE of TWO and THREE-DIMENSIONAL CELL CULTURES *in VITRO* STUDIES

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ABSTRACT

In vitro cell culture models are essential in biological research, biotechnology, and medical sciences. Both two-dimensional (2D) and three-dimensional (3D) cell culture systems play a critical role in the analysis of cellular behaviors and the development of therapeutic applications. This study evaluates the history, advantages, limitations, and current applications of these two culture systems. 2D cell cultures are low-cost and standardized systems in which cells are proliferated to form a monolayer on two-dimensional surfaces. The ability to culture cells over extended periods in laboratory settings has enabled the use of these systems in a wide range of biomedical research. However, 2D systems fail to fully represent cell-to-cell and cell-microenvironment interactions, which limits their ability to model molecular mechanisms and analyze processes such as metastasis and tissue regeneration. 3D cell cultures allow cells to proliferate and differentiate within three-dimensional structures that mimic the microenvironment in the organism. This method offers a more accurate representation of cellular morphology and physiology, enabling the creation of structures such as spheroids and organoids. In fields such as cancer research, drug development, and toxicology, 3D systems provide higher biological accuracy. However, high costs, technical challenges, and lack of standardization limit their practical application. 2D cultures offer rapid cell proliferation and economic efficiency but provide limited insight into the natural cellular environment. In contrast, 3D cultures produce more reliable data, especially in metastasis, drug efficacy and toxicology studies, by better reflecting cellular interactions and tissue morphology, but these systems require more time, experience and resources. Advances in medical and bioengineering fields are expected to enhance the future potential of these systems. The integrated use of both methods could strengthen the translational potential of in vitro data for clinical applications.

Keywords: Cell Culture, 3D Culture, 2D Culture, Spheroid, Organoid

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İN VİTRO ÇALIŞMALARDA İKİ VE ÜÇ BOYUTLU HÜCRE KÜLTÜRLERİNİN YERİ VE ÖNEMİ

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ÖZET

In vitro hücre kültürü modelleri, biyolojik araştırmalar, biyoteknoloji ve tıp bilimlerinde temel araç olarak kabul edilmektedir. Hem iki boyutlu (2D) hem de üç boyutlu (3D) hücre kültür sistemleri, hücresel davranışların analizi ve terapötik uygulamaların geliştirilmesinde kritik rol oynamaktadır. Bu çalışma, bu iki kültür sisteminin tarihçesini, avantajlarını, sınırlamalarını ve güncel kullanım alanlarını değerlendirmektedir. 2D hücre kültürleri, hücrelerin iki boyutlu yüzeylerde tek tabaka oluşturacak şekilde çoğaltıldığı, düşük maliyetli ve standardize sistemlerdir. Hücrelerin laboratuvar ortamında uzun sürelerde üretilebilmesi bu sistemlerin biyomedikal araştırmalarda geniş bir yelpazede kullanımını sağlamıştır. Ancak 2D sistemler, hücre-hücre ve hücre-mikroçevre etkileşimlerini tam olarak yansıtamaması, moleküler mekanizmaların, metastaz ve doku rejenerasyonu gibi süreçlerin analizinde yetersiz kalmaktadır. 3D hücre kültürleri, hücrelerin organizmadaki mikroçevreye benzer koşullarda üç boyutlu yapılar içinde proliferasyonuna ve farklılaşmasına olanak tanır. Bu yöntem, hücresel morfoloji ve fizyolojiyi daha gerçekçi bir şekilde modellemekte olup, sferoidler ve organoidler gibi yapıların oluşturulmasını sağlar. Kanser araştırmaları, ilaç geliştirme ve toksikoloji gibi alanlarda, 3D sistemler daha yüksek biyolojik doğruluk sunmaktadır. Bununla birlikte, yüksek maliyet, teknik zorluklar ve standardizasyon eksiklikleri, 3D kültürlerin uygulanabilirliğini sınırlamaktadır. 2D kültürler, hızlı hücre proliferasyonu ve ekonomik verimlilik sunarken, hücrelerin doğal ortamlarına ilişkin sınırlı bilgiler sağlar. Buna karşılık, 3D kültürler, hücresel etkileşimleri ve doku morfolojisini daha iyi yansıtarak özellikle metastaz, ilaç etkinliği ve toksikoloji çalışmalarında daha güvenilir veriler üretmektedir, ancak bu sistemler daha fazla zaman, tecrübe ve kaynak gerektirir. Tıp ve biyomühendislik alanlarındaki ilerlemeler, bu sistemlerin gelecekteki potansiyelini artıracaktır. Her iki yöntemin entegre kullanımının, *in vitro* çalışmalardan elde edilen verilerin klinik uygulamalara aktarılabilirliğini güçlendirebileceğini düşünmekteyiz.

Anahtar Kelimeler: Hücre kültürü, 3D kültür, 2D kültür, Sferoid, Organoid

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NON-PHARMACOLOGICAL PAIN RELIEF METHODS in NEWBORNS

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ABSTRACT

Newborns may be exposed to various medical interventions in the postnatal period, which may cause them to feel pain. Non-pharmacological pain relief approaches provide relief for babies without harming their development. These approaches include breastfeeding, body contact/kangaroo care, physical contact temperature therapy, white noise, eye contact and speech, massage and physical movements. As a result of the literature review, it has been determined that breastfeeding plays an important role in pain management for newborns, breast milk helps babies to relax and calm down, the baby's pain threshold increases during breastfeeding, and the release of oxytocin hormone in the body reduces the stress levels of babies and provides peace of mind. Skin-to-skin contact and kangaroo care established by the mother and father make newborns feel in a safe and comfortable environment, improve the temperature regulation of babies, stabilise heartbeats and reduce the feeling of pain. It has been observed that newborns are more peaceful by gently hugging their bodies, simulating the safe environment in the womb. Warm compresses or hot water bags used in temperature therapy applied to newborns reduce pain levels by relaxing the muscles of newborns, increasing blood flow and bringing their body temperature to the desired level. Looking at the literature, it has been determined that newborns are sensitive to natural sounds such as the heartbeat of their mothers, white noise or soft melodies help them calm down, making eye contact with newborns and speaking in a calm voice contribute to both strengthening the emotional bond and reducing pain perception by reducing stress levels. Gentle massage and physical movements performed on newborns regulate the digestive system, relax the muscles and release endorphins. Endorphins are known to be natural painkillers and have been found to be effective in reducing the feeling of pain in infants. In conclusion, various non-pharmacological techniques such as pain management in newborns, breastfeeding, body contact, temperature therapy, and white noise offer effective and safe alternatives to alleviate the pain of infants. These methods can be used effectively to provide relief for infants.

Keywords: Neonate, Non-pharmacological pain relief, Breastfeeding, Body contact

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YENİDOĞANLARDA NON-FARMAKOLOJİK AĞRI GİDERME YÖNTEMLERİ

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ÖZET

Yenidoğanlar, doğum sonrası dönemde çeşitli tıbbi müdahalelere maruz kalabilir ve bu süreç, onların ağrı hissetmelerine yol açabilir. Non-farmakolojik ağrı giderme yaklaşımları, bebeklerin gelişimlerine zarar vermeden rahatlamalarını sağlar. Bu yaklaşımlar; emzirme, vücut teması/kanguru bakımı, fiziksel temas sıcaklık terapisi, beyaz gürültü, göz teması ve konuşma, masaj ve fiziksel hareketlerdir. Literatür incelenmesi sonucu yenidoğanlar için emzirmenin, ağrı yönetiminde önemli bir rol oynadığı anne sütünün ise bebeklerin rahatlamasına ve sakinleşmesine yardımcı olduğu, emzirme sırasında bebeğin ağrı eşiğinin arttığı, ayrıca vücutta oksitosin hormonunun salınması ile bebeklerin stres seviyelerinin azalarak huzurun sağlandığı belirlenmiştir. Anne ve babanın kurduğu ten tene temas ve kanguru bakımı, yenidoğanların güvenli ve rahat bir ortamda hissetmelerini sağlayarak, bebeklerin sıcaklık düzenini iyileştirir, kalp atışlarını dengeleyerek ve ağrı hissini azaltmaktadır. Yenidoğanların vücutlarının hafifçe sarılması, anne karnındaki güvenli ortamın simüle edilmesi ile, bebeklerin daha huzurlu olduğu gözlemlenmiştir. Yenidoğanlara uygulanan sıcaklık terapisinde kullanılan ılık kompresler veya sıcak su torbaları yenidoğanların kaslarının gevşemesine, kan akışının artmasına ve vücut sıcaklıklarının istenilen düzeye getirilmesini sağlayarak ağrı düzeylerini azaltmaktadır. Literatüre bakıldığında, yenidoğanların annelerinin kalp atışı gibi doğal seslere duyarlı olduğu, beyaz gürültü veya yumuşak melodilerin, sakinleşmelerini sağladığı, yenidoğanlarla göz teması kurmanın ve sakin bir sesle konuşmanın, stres seviyelerini azaltarak hem duygusal bağın güçlenmesine hem de ağrı algısının azalmasına katkı sağladığı belirlenmiştir. Yenidoğanlara yapılan nazik masaj ve fiziksel hareketler, sindirim sistemini düzenler, kasların gevşemesini sağlayarak, endorfin salınımını açığa çıkartmaktadır. Endorfinlerin, doğal ağrı kesiciler olduğunun bilinmesi ile de bebeklerin ağrı hissini azaltmada etkili olduğu belirlenmiştir. Sonuç olarak, yenidoğanlarda ağrı yönetimi, emzirme, vücut teması, sıcaklık terapisi, beyaz gürültü gibi çeşitli non-farmakolojik teknikler, bebeklerin ağrılarını hafifletmede etkili ve güvenli alternatifler sunmaktadır. Bu yöntemler, bebeklerin rahatlamalarını sağlamak için etkin bir şekilde kullanılabilir.

Anahtar Kelimeler: Yenidoğan, Non-farmakolojik ağrı giderme, Emzirme, Vücut teması

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ASSESSMENT of UPPER EXTREMITY PROBLEMS in PHYSICALLY DISABLED PEOPLE USING WALKING AIDS

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ABSTRACT

Walking aids are very important to increase independence and quality of life in people with physical disabilities. Walking aids enable physically disabled people to perform daily activities, attend work, and participate in social activities. The choice of an appropriate walking aid for the people with physical disabilities varies according to the age, activities, disease or disability status. The choice of walking aid should also be consider personal, environmental, and technological factors. The study aimed to assess the relationship between upper extremity function and quality of life in physically disabled people using walking aids. A total of 30 individuals (47.67±12.78 years) who use walking aids participated in the study. Socio-demographic information of individuals was recorded. Upper extremity problems were evaluated with the Disabilities of the Arm, Shoulder and Hand Questionnaire (Quick-DASH) and quality of life was evaluated with the SF-12 Quality of Life Scale. The mean score of the Quick-DASH was 41.36±26.16 and the mean score of the SF-12 Quality of Life Scale physical component summary score was 31.75±6.71. There was a statistically significant moderate negative correlation between the Quick-DASH score and the SF-12 Quality of Life Scale score (r=-0,327, $p<0.05$). A significant difference was found in the Quick-DASH score based on the type of wheelchair used ($p<0.05$). As a result of the study, it was found that the high level of upper extremity problems of individuals negatively affected the quality of life. It was observed that manual wheelchair users had more upper extremity problems than power wheelchair users. Walking aids should be organised according to the needs of the individual to prevent secondary deformities in physically disabled people. It is thought that appropriate modifications can positively affect the upper extremity functionality and quality of life in people with physical disabilities.

Keywords: Physically disabled, Walking aids, Upper extremity, Quality of life

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YÜRÜME YARDIMCISI KULLANAN FİZİKSEL ENGELLİ BİREYLERDE ÜST EKSTREMİTE PROBLEMLERİNİN DEĞERLENDİRİLMESİ

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ÖZET

Yürüme yardımcıları, fiziksel engelli bireylerde bağımsızlığı ve yaşam kalitesini artırmak için oldukça önemlidir. Yürüme yardımcıları fiziksel engelli bireyin günlük aktivitelerini yerine getirmesine, işe gitmesine ve sosyal aktivitelere katılmasına olanak sağlamaktadır. Fiziksel engelli bireyler için uygun olan yürüme yardımcısı bireylerin yaşına, aktivitelerine, hastalık veya engel durumuna göre farklılık göstermektedir. Aynı zamanda yürüme yardımcısı seçiminde bireysel, çevresel ve teknolojik faktörler göz önüne alınmalıdır. Bu çalışma, yürüme yardımcısı kullanan fiziksel engelli bireylerde üst ekstremite fonksiyonelliği ve yaşam kalitesi arasındaki ilişkiyi değerlendirmek amacıyla gerçekleştirilmiştir. Çalışmaya yürüme yardımcısı kullanan toplam 30 birey (47.67±12.78 yıl) katılmıştır. Bireylerin sosyo-demografik bilgileri kaydedilmiştir. Üst ekstremite sorunları Kol, Omuz ve El Sorunları Anketi (Quick-DASH) ile, yaşam kalitesi SF-12 Yaşam Kalitesi Ölçeği ile değerlendirilmiştir. Quick-DASH skoru ortalaması 41.36±26.16 ve SF-12 Yaşam Kalitesi Ölçeği fiziksel bileşen özet skoru ortalaması 31.75±6.71 olarak tespit edilmiştir. Quick-DASH skoru ile SF-12 Yaşam Kalitesi Ölçeği skoru arasında istatistiksel olarak negatif yönde anlamlı bir ilişki bulunmuştur ($p<0.05$). Kullanılan tekerlekli sandalye tipine göre Quick-DASH skorunda anlamlı bir fark görülmüştür ($p<0.05$). Çalışma sonucunda, bireylerin üst ekstremite problemlerinin yüksek düzeyde olmasının yaşam kalitesini olumsuz yönde etkilediği tespit edilmiştir. Manuel tekerlekli sandalye kullanan bireylerin, akülü tekerlekli sandalye kullanan bireylere göre daha fazla üst ekstremite problemleri yaşadığı görülmüştür. Fiziksel engelli bireylerde ikincil deformiteleri önlemek için yürüme yardımcıları bireyin ihtiyaçlarına göre düzenlenmelidir. Yapılacak uygun modifikasyonların, fiziksel engelli bireylerde üst ekstremite fonksiyonelliğini ve yaşam kalitesini olumlu yönde etkileyebileceği düşünülmektedir.

Anahtar Kelimeler: Fiziksel engelli, Yürüme yardımcıları, Üst ekstremite, Yaşam kalitesi

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COMPARISON of QUALITY of LIFE, KNESIOPHOBIA and PERCEIVED OCCUPATIONAL PERFORMANCE and SATISFACTION PEOPLE with LOW BACK and/or NECK PAIN

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ABSTRACT

Low back (LBP) and neck pain (NP) is a common disorder that negatively affects people's quality of life (QoL), kinesiophobia levels, perceived occupational performance and satisfaction (POPaS). This study aimed to compare the QoL, kinesiophobia, POPaS levels in people with and without LBP and/or NP and to identify the occupations with problems in the areas of occupational performance (OP). The study consisted of 4 groups: LBP, NP, low back and neck pain (LBNP) and control group (CG). The study was completed with a total of 435 participants. The mean age of the participants was 36.83 ± 11.16 years (min 18, max 64). QoL was assessed with the Nottingham Health Profile (NHP), kinesiophobia with the Tampa Kinesiophobia Scale, and POPaS with the Canadian Occupational Performance Measure. In terms of QoL, significant differences were observed between healthy people CG and those with LBP and LBNP ($p<0.001$). For kinesiophobia, the CG scored lower than the LBP and LBNP groups ($p<0.01$). For POPaS, the CG achieved higher scores in both performance and satisfaction parameters compared to the LBP and LBNP groups ($p<0.05$). In addition, the NP group reported lower satisfaction scores compared to the CG ($p<0.001$). Significant problems in areas such as personal care, mobility and home management were observed in the groups with pain complaints. The effect of LBP and/or NP on OP areas should not be underestimated. It is important to reduce people's kinesiophobia and ensure independence in OP areas in the planning to be made.

Keywords: Low back, Neck, Occupational performance, Satisfaction, Kinesiophobia, Quality of life

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BEL VE/VEYA BOYUN AĞRISI OLAN KİŞİLERDE YAŞAM KALİTESİ, KİNEZYOFOBİ VE ALGILANAN OKUPASYONEL PERFORMANS VE MEMNUNİYETİN KARŞILAŞTIRILMASI

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ÖZET

Bel ve boyun ağrısı bireylerin yaşam kalitesi, kinezyofobi, algılanan okupasyonel performans ve memnuniyet düzeylerini olumsuz etkileyen yaygın bir sağlık sorunudur. Bu çalışmanın amacı bel ve/veya boyun ağrısı olan bireyler ile bu bölgelerde ağrısı olmayan sağlıklı bireylerin yaşam kalitesi, kinezyofobi, okupasyonel performans ve memnuniyet düzeylerini karşılaştırmak ve günlük yaşamda problem yaşanan okupasyonları belirlemektir. Bu çalışma toplamda 435 kişi ile tamamlanmıştır. Katılımcıların yaş ortalaması 36,83±11,16 yıl olarak bulundu. Çalışma kapsamında katılımcılar yalnızca bel ağrısı, yalnızca boyun ağrısı hem bel hem boyun ağrısı yaşayan ve sağlıklı kontrol grubu olmak üzere 4 grupta incelenmiştir. Yaşam kalitesi Nottingham Sağlık Profili, kinezyofobi Tampa Kinezyofobi Ölçeği, okupasyonel performans ve memnuniyet düzeyleri ise Kanada Aktivite Performans Ölçümü ile değerlendirilmiştir. Yaşam kalitesi skorları incelendiğinde kontrol grubu ile yalnızca bel ağrısı ve hem bel hem boyun ağrısı yaşayan gruplar arasında anlamlı farklılıklar gözlemlenmiştir ($p<0,001$). Kinezyofobi düzeylerinde ise bel ağrısı ve hem bel hem boyun ağrısı olan grupta kontrol grubuna kıyasla daha yüksek puanlar bulunmuştur ($p<0,01$). Algılanan okupasyonel performans düzeyleri incelendiğinde kontrol grubunda bel ağrısı ve hem bel hem boyun ağrısı yaşayan gruplara kıyasla daha yüksek puanlar elde edilmiştir ($p<0,05$). Ek olarak yalnızca boyun ağrısı yaşayan grup ise kontrol grubuna kıyasla daha düşük memnuniyet skorları elde etmiştir ($p<0,001$). Ağrı bildiren gruplarda kişisel bakım, mobilite ve ev yönetimi gibi alanlarda belirgin problemler olduğu gözlemlendi. Bu bulgular, bel ve/veya boyun ağrısının yaşam kalitesini ve günlük işlevleri etkilediğini, kinezyofobinin de bu duruma katkı sağlamış olabileceğini göstermektedir. Sonuç olarak bel ve/veya boyun ağrısının okupasyonel performans alanları üzerindeki etkisi hafife alınmamalıdır. Yapılacak müdahale planlarında bu durum göz önüne alınarak kinezyofobi düzeyini azaltmaya, okupasyonel performansı artırmaya yönelik stratejiler geliştirmek önem arz etmektedir.

Anahtar Kelimeler: Bel, Boyun, Okupasyonel performans, Memnuniyet, Kinezyofobi, Yaşam kalitesi.

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HEAVY SLOW RESISTANCE TRAINING as a NOVEL INTERVENTION for ROTATOR CUFF TENDINOPATHY: A NARRATIVE REVIEW

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ABSTRACT

In rotator cuff tendinopathy (RCT), commonly known as subacromial impingement syndrome, exercise training is recognized as an effective method. However, there is no clear agreement on which type of resistance exercise intervention is more effective. It is useful to understand the different exercise interventions used so that individuals with RCT can benefit from physical therapy in the best way. The aim of this study was to comprehensively review studies examining the effects of heavy slow resistance training in individuals with RCT. From January 2025, previous studies were searched in PubMed, ScienceDirect, Web of Science and GoogleScholar databases using the keywords 'heavy slow resistance training', 'exercise', 'resistance exercise training', 'rotator cuff', 'tendinopathy', 'tendinitis', 'biceps tendinitis', 'subacromial pain syndrome' and 'subacromial impingement syndrome'. The literature search revealed a very limited number of studies examining the effect of heavy slow resistance (HSR) training intervention on symptoms and tendon morphology in RCT. One of these studies was designed as a single-blind randomized controlled feasibility study and examined the effects of specific HSR exercise training; the other study examined the effect of HSR training combined with various exercise modalities. Furthermore, no study was found that compared the effect of specific HSR training with other exercise interventions in individuals with RCT. The reviewed studies revealed that HSR training is a highly tolerable and feasible exercise modality for patients with RCT and provides significant improvements in RCT when performed alone or in addition to a traditional physical therapy program. There is a need for more studies examining the effects of heavy slow resistance training on tendon structure, pain, function, shoulder range of motion, muscle strength, treatment satisfaction and subjective perception of improvement in individuals with RCT.

Keywords: Exercise therapy, Rehabilitation, Heavy slow resistance training, Shoulder pain, Subacromial impingement syndrome, Tendonitis

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ROTATOR MANŞET TENDİNOPATİSİ İÇİN YENİ BİR MÜDAHALE OLARAK AĞIR YAVAŞ DİRENÇ EĞİTİMİ: BİR ANLATI İNCELEMESİ

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ÖZET

Subakromiyal sıkışma sendromu olarak bilinen rotator manşet tendinopatisinde (RMT) egzersiz eğitimi etkili bir yöntem olarak kabul edilmektedir. Bununla birlikte, hangi tür direnç egzersizi müdahalesinin daha etkili olduğu konusunda net bir fikir birliği bulunmamaktadır. RMT'li bireylerin fizik tedaviden en iyi şekilde faydalanabilmeleri için kullanılan farklı egzersiz müdahalelerinin anlaşılması faydalı olacaktır. Bu çalışmanın amacı, RMT'si olan bireylerde ağır yavaş direnç egzersizinin etkilerini inceleyen çalışmaları kapsamlı bir şekilde gözden geçirmektir. Ocak 2025'ten itibaren, önceki çalışmalar PubMed, ScienceDirect, Web of Science ve GoogleScholar veri tabanlarında 'ağır yavaş direnç eğitimi', 'egzersiz', 'direnç egzersiz eğitimi', 'rotator manşet', 'tendinopati', 'tendinit', 'biseps tendiniti', 'subakromiyal ağrı sendromu' ve 'subakromiyal sıkışma sendromu' anahtar kelimeleri kullanılarak tarandı. Literatür taraması sonucu, RMT'li bireylerde ağır yavaş direnç (AYD) eğitimi müdahalesinin semptomlar ve tendon morfolojisi üzerindeki etkisini inceleyen çok sınırlı sayıda çalışma bulundu. Bu çalışmalardan biri tek kör randomize kontrollü fizibilite çalışması olarak tasarlanmış ve spesifik HSR egzersiz eğitiminin etkilerini incelemiştir; diğer çalışma ise HSR eğitiminin çeşitli egzersiz modaliteleri ile birlikte etkisini incelemiştir. Ayrıca, RMT'li bireylerde spesifik HSR eğitiminin etkisini diğer egzersiz müdahaleleri ile karşılaştıran bir çalışmaya rastlanmamıştır. İncelenen çalışmalar, HSR eğitiminin RMT hastaları için oldukça tolere edilebilir ve uygulanabilir bir egzersiz yöntemi olduğunu ve tek başına veya geleneksel bir fizik tedavi programına ek olarak uygulandığında RMT'de önemli iyileşmeler sağladığını ortaya koymuştur. RMT'li bireylerde, ağır yavaş direnç eğitiminin, rotator manşet kaslarının tendon yapısı, ağrı, fonksiyon, omuz eklem hareket açıklığı, kas kuvvet, tedavi memnuniyeti ve öznel iyileşme algısı üzerine etkilerini inceleyen daha fazla çalışmaya ihtiyaç vardır.

Anahtar Kelimeler: Egzersiz tedavisi, Rehabilitasyon, Ağır yavaş direnç eğitimi, Omuz ağrısı, Subakromiyal sıkışma sendromu, Tendinit.

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METABOLIC EFFECTS of YOGA on WEIGHT MANAGEMENT

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ABSTRACT

Yoga is a mind-body exercise that includes breathing exercises, physical postures, and meditation. There are studies showing that yoga may be associated with weight control. It is also known that yoga has stimulatory or inhibitory effects on metabolic parameters. This study aimed to evaluate studies on the relationship between yoga and weight loss and maintenance, and especially drew attention to its effect on metabolic parameters. A literature search was conducted from Web of Science, Google Scholar, and PubMed databases on the effects of yoga on weight control. Studies published in peer-reviewed journals that included the effects of yoga on metabolic parameters were reviewed and evaluated. While the increase in leptin levels in the blood supports the reduction of feeding and energy expenditure, low leptin levels are an indicator of negative energy balance and encourage more eating. Long-term yoga practice was associated with lower leptin levels and higher adiponectin/leptin ratio, independent of body mass index. Obesity is characterized by systemic inflammation, and leptin and adiponectin secreted by fat cells can increase or decrease inflammation. Leptin stimulates the release of monocytes, interleukin-6 (IL-6), and tumor necrosis factor-α (TNF-α), and promotes the production of C-reactive protein (CRP). Adiponectin increases the production of anti-inflammatory IL-10 and reduces CRP, IL-6, and TNF-α. Yoga practices have also been shown to affect lipid profiles in obese individuals. In conclusion, yoga has various metabolic effects, and these effects suggest that yoga may be a supportive factor in weight control.

Keywords: Weight Control, Leptin, Obesity, Yoga

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KİLO YÖNETİMİNDE YOGANIN METABOLİK ETKİLERİ

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ÖZET

Yoga, nefes egzersizleri, fiziksel duruşlar ve meditasyonu içeren bir zihin-beden egzersizidir. Yoganın kilo kontrolü ile ilişkili olabileceğini gösteren çalışmalar mevcuttur. Yoganın metabolik parametreler üzerinde uyarıcı veya engelleyici etkileri olduğu da bilinmektedir. Bu çalışmada metabolik parametrelere etkisine özellikle dikkat ederek yoganın kilo verme ve koruma ile ilişkisine dair çalışmaların değerlendirilmesi amaçlanmıştır. Web of Science, Google Akademik ve PubMed veritabanlarından kilo kontrolünde yoganın etkileri üzerine literatür taraması gerçekleştirildi. Yoganın metabolik parametreler üzerine etkilerini içeren, hakemli dergilerde yayınlanan çalışmalar incelendi ve değerlendirildi. Kandaki leptin miktarının artışı, beslenmenin azalması ve enerji harcamasını teşvik ederken, düşük leptin seviyesi ise negatif enerji dengesinin göstergesidir ve daha fazla yemeye teşvik eder. Uzun dönem yapılan yoga uygulamaları beden kitle indeksinden bağımsız olarak daha düşük leptin seviyeleri ve daha yüksek adiponektin/leptin oranıyla ilişkilendirilmiştir. Obezitede sistemik inflamasyonla ile karakterizedir ve yağ hücreleri tarafından salgılanan leptin ve adiponektin, inflamasyonu artırabilir veya azaltabilir. Leptin, monosit, interlökin-6 (IL-6) ve tümör nekroz faktörü-α (TNF-α) salınımını uyarır ve C-reaktif protein (CRP) üretimini destekler. Adiponektin ise anti-inflamatuar IL-10 üretimini arttırırken CRP, IL-6 ve TNF-α'yı azaltır. Ayrıca obez bireylerde yoga pratiklerinin lipit profilininin etkilediği de gösterilmişti. Sonuç olarak, yoganın çeşitli metabolik etkileri vardır ve bu etkiler yoganın kilo kontrolünde destekleyici bir faktör olabileceğini göstermektedir.

Anahtar Kelimeler: Kilo Kontrolü, Leptin, Obezite, Yoga

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CORONAL PULPOMY of a PERMANENT TOOTH with INCOMPLETE ROOT DEVELOPMENT and SPONTANEOUS PAIN: CASE REPORT

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ABSTRACT

Pulpotomy, one of the vital pulp therapy procedures for permanent teeth, is regaining importance as a less invasive and biologically based treatment option compared to root canal treatment for teeth diagnosed with irreversible pulpitis. This method involves the partial or complete removal of the coronal pulp tissue and the placement of a biocompatible material over the pulp. The aim of this case report is to evaluate the success of coronal pulpotomy using Mineral Trioxide Aggregate (MTA) in a patient who presented to the clinic with complaints of spontaneous pain. A 9-year-old male patient presented to the clinic with severe pain in the lower right region. Clinical examination revealed tenderness on percussion in tooth #45, but no clinical abscess or fistula was detected. The vitality test showed a positive response. Radiographic evaluation indicated that the periapical tissues were normal, but root development was incomplete, and the apex of the tooth was open. Coronal pulpotomy was performed under local anesthesia, and MTA was placed at the base of the pulp chamber. A moist cotton pellet was placed over the MTA, and the tooth was restored with composite the next day. The patient was evaluated clinically and radiographically at 1, 3, 6, and 12 months. During follow-up visits, no tenderness on percussion, spontaneous or provoked pain, sinus tract, or swelling was observed. Radiographic examination confirmed that the periapical tissues remained healthy and root development continued. Coronal pulpotomy is a less invasive, more cost-effective, simpler, and quicker procedure compared to root canal treatment. Recent studies suggest that pulpotomy can be an alternative to root canal treatment for permanent teeth with an open apex diagnosed with irreversible pulpitis. In this study, the patient's clinical symptoms were successfully eliminated, and favorable outcomes were achieved with coronal pulpotomy.

Keywords: Permanent tooth, Coronal pulpotomy, Mineral trioxide aggregate

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KÖK GELİŞİMİ TAMAMLANMAMIŞ SPONTAN AĞRI GÖRÜLEN DAİMİ DİŞİN KORONAL PULPATOMİSİ: OLGU SUNUMU

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ÖZET

Daimi dişlerde vital pulpa tedavisi prosedürlerinden biri olan pulpotomi, irreversible pulpitis görülen dişler için kök kanal tedavisine göre daha az invaziv ve biyolojik temelli bir tedavi seçeneği olarak yeniden önem kazanmaktadır. Bu yöntem, koronal pulpa dokusunun kısmen veya tamamen çıkarılmasını ve pulpa üzerine biyouyumlu bir materyal yerleştirilmesini içerir.Bu olgu sunumunda amaç spontan ağrı şikayetiyle kliniğe başvuran hastaya Mineral Trioksit Agregat ile uygulanan koronal pulpotomi uygulamasının başarısını değerlendirmektir. Sağ alt tarafında şiddetli ağrı şikayetiyle kliniğe başvuran 9 yaşındaki erkek hastanın klinik muayenesinde 45 numaralı dişinde perküsyona hassasiyet görülürken herhangi bir klinik apse ya da fistül saptanmamıştır. Dişin vitalite testinde vital pozitif yanıt alınmıştır. Radyografik olarak değerlendirdiğimizde ise periapikal dokuların normal olduğu ancak kök gelişiminin henüz tamamlanmadığı, dişin apeksinin açık olduğu saptanmıştır. Dişe lokal anestezi altında koronal pulpotomi yapılarak pulpa odasının tabanına MTA konuldu. Üzerine nemli bir pamuk yerleştirilerek diş ertesi gün kompozitle restore edildi. Hasta 1. 3. 6. ve 12. aylarda klinik ve radyografik olarak değerlendirildi. Kontrol randevularında perküsyona hassasiyet, spontan ya da provake ağrı, sinüs yolu veya şişlik gözlemlenmedi. Radyografik olarak dişin periapikal dokularının sağlıklı olduğu, kök gelişiminin devam ettiği görüldü. Koronal pulpotomi, kök kanal tedavisine kıyasla daha az invaziv, daha ekonomik, uygulanması daha basit ve daha az zaman alan bir işlemdir. Güncel araştırmalar, pulpotominin apeksi açık, irreversible pulpitisli teşhisi konulan daimi dişlerin tedavisinde kök kanal tedavisine bir alternatif olabileceğini göstermektedir. Bu çalışmada da hastanın klinik semptomları başarıyla ortadan kaldırılmış ve koronal pulpotomi ile olumlu sonuçlar elde edilmiştir.

Anahtar Kelimeler: Daimi diş, Koronal pulpotomi, Mineral trioksit aggregat

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NUTRITIONAL STRATEGIES in ATHLETE MUSCULOSKELETAL INJURIES

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ABSTRACT

In the rehabilitation management of traditional musculoskeletal system injuries in athletes, three methods are focused on in terms of physiotherapy and sports medicine: mechanical activities, anti-inflammatory drugs and surgical interventions. Both in inflammation process and healing of musculoskelatal injuries there are two factors that affect non-pharmacological procedures: nutrition and supplement usage. Recently, studies evaluating the effect of nutritional strategies on musculoskeletal injuries have become important. Throughout this study, necessity of nutrition for athletes during healing of musculoskelatal injuries. Within the scope of literature review on the subject, national databases DergiPark, Ulakbim TR Dizin; international databases such as Web of Science, PubMed, Scopus and Google Scholar were used between August and October 2024. The majority of injuries seen in athletes involve musculoskeletal system injuries. In general, nutritional recommendations during the rehabilitation program for musculoskeletal injuries are similar to the recommendations for muscle gain. When determining the nutrition program for musculoskeletal system injuries; attention should be paid to the amount, type and quality of nutrients, timing, type of injury, injured body part and rehabilitation time. Nutrition recommendations during this period; it should include antioxidant and micronutrient intake through a varied and balanced diet rich in protein, fibre, fruits and vegetables, which can support the maintenance of antioxidant status. It is thought that supplements such as creatine monohydrate, omega 3, collagen peptides, hydroxy methyl butyrate and vitamin D may also be important, as they are thought to provide tissue repair and prevent inflammation.

Keywords: Nutrition, Athlete, Injury, Physiotherapy, Musculoskeletal system

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SPORCU KAS-İSKELET SİSTEMİ YARALANMALARINDA BESLENME STRATEJİLERİ

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ÖZET

Sporcularda geleneksel kas-iskelet sistemi yaralanmalarının rehabilitasyon yönetiminde fizyoterapi ve spor hekimliği açısından mekanik aktiviteler, anti-inflamatuar ilaçlar ve cerrahi müdahaleler olmak üzere üç yönteme odaklanılmıştır. Beslenme ve takviye kullanımları, kas-iskelet sistemi yaralanmalarında inflamasyon ve iyileşmenin farklı aşamalarında farmakolojik olmayan stratejiler olarak önemli bir rol oynamaktadır. Son zamanlarda beslenme stratejilerinin kas-iskelet sistemi yaralanmaları üzerindeki etkisini değerlendiren çalışmalar önemli hale gelmiştir. Bu derlemede, sporcularda görülen kas-iskelet sistemi yaralanmalarında beslenmenin önemini vurgulamak amaçlanmıştır. Konuyla ilgili literatür taraması kapsamasında Ağustos-Ekim 2024 arasında ulusal veri tabanlarından DergiPark, Ulakbim TR Dizin; uluslararası veri tabanlarından Web of Science, PubMed, Scopus ve Google Scholar veri tabanlarından yararlanılmıştır. Sporcularda görülen yaralanmaların büyük çoğunluğunu kas-iskelet sistemi yaralanmaları kapsamaktadır. Genel olarak, kas-iskelet sistemi yaralanmalarında rehabilitasyon programı sürecindeki beslenme önerileri, kas kazanımı için yapılan önerilere benzerlik göstermektedir. Kas-iskelet sistemi yaralanmalarında beslenme programı belirlenirken; besin öğelerinin miktarına, türü ve kalitesine, zamanlamaya, yaralanmanın türüne, yaralanan vücut bölgesine ve rehabilitasyon zamanına dikkat edilmesi gerekir. Bu dönemde beslenme önerileri; antioksidan durumunun korunmasını destekleyebilecek protein, lif, meyve ve sebzeler açısından zengin, çeşitli ve dengeli bir diyet yoluyla antioksidan ve mikro besin alımlarını mutlaka içermelidir. Doku onarımını sağladığı ve inflamasyonu önleyebileceği düşünüldüğü için kreatin monohidrat, omega 3, kolajen peptitleri, hidroksi metil bütirat ve D vitamini gibi takviyelerin de önemli olabileceği düşünülmektedir.

Anahtar Kelimeler: Beslenme, Sporcu, Yaralanma, Fizyoterapi, Kas iskelet sistemi

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STUDENT NURSES' PERCEPTIONS of the CONCEPT of BLENDED EDUCATION DURING THE COVID-19 PANDEMIC: A METAPHOR ANALYSIS STUDY

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ABSTRACT

The purpose of this study is to determine the perceptions of nursing students regarding the concept of "Blended Education", which was implemented for the first time due to the Covid-19 pandemic, through metaphors. In this study, nursing students who received undergraduate nursing theoretical education online and clinical practices face-to-face during the pandemic were determined as the criterion. The study was conducted in the phenomenology approach pattern, which forms the basis of qualitative research. The universe and sample of the study consisted of 2nd, 3rd and 4th year nursing students (N=593, n=331) studying at the Faculty of Nursing in the 2021-2022 academic year. The research data were collected using the "Metaphorical Perceptions Data Collection" tool. Data analysis was carried out in five stages. Student nurses created 160 metaphors for the concept of blended education. The obtained metaphors were examined in terms of similarities and combined under two categories as "Academic dimension" and "Psychosocial dimension". In line with this result, it is of great importance to integrate empowering education contents into the curriculum to eliminate students' academic and psychosocial concerns. In addition, it is recommended that various courses be organized and universities' technical infrastructures be strengthened in order to increase the competencies of academics.

Keywords: Nursing student, Blended education, Metaphor

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COVİD-19 PANDEMİSİNDE ÖĞRENCİ HEMŞİRELERİN KARMA EĞİTİM KAVRAMINA İLİŞKİN ALGILARI: BİR METAFOR ANALİZİ ÇALIŞMASI

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ÖZET

Bu çalışmanın amacı, Covid-19 pandemisi nedeniyle ilk kez uygulanan "Harmanlanmış Eğitim" kavramına ilişkin hemşirelik öğrencilerinin algılarını metaforlar aracılığıyla belirlemektir. Bu çalışmada, pandemi sürecinde çevrimiçi olarak lisans hemşirelik teorik eğitimi ve yüz yüze klinik uygulamaları alan hemşirelik öğrencileri kriter olarak belirlenmiştir. Çalışma, nitel araştırmanın temelini oluşturan fenomenoloji yaklaşımı deseninde yürütülmüştür. Çalışmanın evrenini ve örneklemini, 2021-2022 eğitim-öğretim yılında Hemşirelik Fakültesi'nde öğrenim gören 2., 3. ve 4. sınıf hemşirelik öğrencileri (N=593, n=331) oluşturmuştur. Araştırma verileri "Metaforik Algılar Veri Toplama" aracı kullanılarak toplanmıştır. Veri analizi beş aşamada gerçekleştirilmiştir. Öğrenci hemşireler, harmanlanmış eğitim kavramı için 160 metafor oluşturmuştur. Elde edilen metaforlar benzerlikler açısından incelenmiş ve "Akademik boyut" ve "Psikososyal boyut" olmak üzere iki kategori altında birleştirilmiştir. Bu sonuç doğrultusunda, öğrencilerin akademik ve psikososyal kaygılarını gidermek için müfredata güçlendirici eğitim içeriklerinin entegre edilmesi büyük önem taşımaktadır. Ayrıca, akademisyenlerin yetkinliklerini artırmak amacıyla çeşitli kurslar düzenlenmesi ve üniversitelerin teknik altyapılarının güçlendirilmesi önerilmektedir.

Anahtar Kelimeler : Hemşirelik öğrencisi, Karma eğitim, Metafor

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ASSIGNMENT STATUS of DIETITICIANS between SERVICE REGIONS and SERVICE GROUPS

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ABSTRACT

The Amendment to the Ministry of Health Appointment and Relocation Regulation was published on 27 November 2024. The aim of this study is to evaluate the effects of these amendments on the transfer status of dietitians working in institutions affiliated to the Ministry of Health between service regions and service groups. With the amendment made in the regulation, the number of service groups was increased from four to five and the regional service groups were rearranged as of November-December 2024. Before the amendments, dietitians working in 10 cities were not entitled to apply for sub-regional and intra-regional transfers, while this number increased to 51 after the amendment. At the same time, while sub-regional and intra-regional transfer was possible in 41 cities before the amendment, the possibility of sub-regional and intra-regional transfer for dietitians working in these cities has been eliminated with the new regulation. Before the amendment, the number of cities where dietitians could request sub-regional and intra-regional transfer varied between 10 and 79, while with the new regulation, this number has been set as 30. Before the amendment, dietitians working in 71 cities could apply for sub-regional and intra-regional transfers, while this number decreased to 30 after the amendment. In addition, according to a new provision in the regulation, if the occupancy rate of the staff in the cities where the staff is located falls below 79% according to the Personnel Distribution Table, it will not be applicable between service regions and service groups. After the amendment, the classification of cities according to the service region is not considered as a prerequisite for sub-regional relocation applications. The result of the changes made should be evaluated with feedback from dietitians actively working in the field and updated if necessary.

Keywords: Ministry of health, Dietician, Assignment between service regions and service groups.

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DİYETİSYENLERİN HİZMET BÖLGELERİ VE HİZMET GRUPLARI ARASINDA ATAMA DURUMU

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ÖZET

Sağlık Bakanlığı Atama ve Yer Değiştirme Yönetmeliğinde Değişiklik Yapılmasına Dair Yönetmelik 27 Kasım 2024 tarihinde yayınlanmıştır. Bu çalışmanın amacı, söz konusu değişikliklerin Sağlık Bakanlığına bağlı kuruluşlarda çalışan diyetisyenlerin hizmet bölgeleri ve hizmet grupları arasında atama durumlarına etkilerini değerlendirmektir. Yönetmelikte yapılan düzenleme ile dört olan hizmet grubu sayısı beşe çıkarılmış ve Kasım-Aralık 2024 itibariyle bölge hizmet grupları yeniden düzenlenmiştir. Yapılan değişikliklerden önce 10 şehirde görev yapan diyetisyenler alt bölge ve bölge içi tayinine başvurma hakkına sahip değilken, değişiklik sonrasında bu sayı 51'e yükselmiştir. Aynı zamanda, değişiklik öncesinde 41 şehirde alt bölge ve bölge içi tayini mümkünken, yeni düzenleme ile bu illerde görev yapan diyetisyenlerin alt bölge ve bölge içi tayini yapabilme imkânı ortadan kalkmıştır. Değişiklik öncesi çalıştıkları illere göre diyetisyenlerin alt bölge ve bölge içi tayini isteyebileceği illerin sayısı 10 ile 79 arasında değişirken, yeni düzenleme ile bu sayı sabit olarak 30 olarak belirlenmiştir. Değişiklik öncesi 71 şehirde çalışanlar alt bölge ve bölge içi tayinine başvurabilirken değişiklik sonrası bu sayı 30'a düşmüştür. Ayrıca, yönetmelikte yer alan yeni bir hükme göre, atama sonucu personelin kadrosunun bulunduğu ildeki Personel Dağılım Cetveline göre doluluk oranının %79'un altına düşmesi halinde hizmet bölgeleri ve hizmet grupları arasında uygulanamayacaktır. Yapılan değişikliklerin sonucu, sahada aktif olarak çalışan diyetisyenlerden alınacak geri bildirimlerle değerlendirilmeli ve ihtiyaç halinde güncellenmelidir.

Anahtar Kelimeler: Sağlık Bakanlığı, Diyetisyen, Hizmet bölgeleri ve hizmet grupları arasında atama

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INNOVATIONS IN COSMETIC GYNECOLOGY

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ABSTRACT

Cosmetic gynecology is a rapidly evolving field aimed at addressing women's expectations for genital health and aesthetics. This discipline focuses on improving the appearance and functionality of vaginal tissue through surgical and non-surgical techniques. Procedures such as labiaplasty, clitoral hood reduction, and energy-based vaginal rejuvenation enhance patients' physical and psychological satisfaction. Technologies like laser and radiofrequency have demonstrated significant improvements in issues such as vaginal laxity, dryness, and sexual dysfunction. However, ethical responsibilities, informed consent, and patient autonomy are critical considerations in the field of cosmetic gynecology. Studies show that most of these procedures are associated with high patient satisfaction and low complication rates. Nevertheless, further research is required to support the ethical and scientific dimensions of this discipline.

Keywords: Cosmetic gynecology, Women health, Innovations

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KOZMETİK JİNEKOLOJİDE YENİLİKLER

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ÖZET

Kozmetik jinekoloji, kadınların genital sağlık ve estetik beklentilerini karşılamayı amaçlayan hızla gelişen bir alandır. Bu disiplin, cerrahi ve cerrahi olmayan tekniklerle vajinal dokunun görünümünü ve fonksiyonunu iyileştirmeye odaklanır. Labioplasti, klitoral başlık küçültme ve enerji bazlı vajinal gençleştirme gibi prosedürler, hastaların fiziksel ve psikolojik memnuniyetini artırmaktadır. Özellikle lazer ve radyo frekansı gibi teknolojiler, vajinal gevşeklik, kuruluk ve cinsel işlev bozuklukları gibi sorunlarda önemli iyileşmeler sağlamaktadır. Bununla birlikte, kozmetik jinekoloji alanında etik sorumluluklar, bilgilendirilmiş onam ve hasta özerkliği gibi konular kritik önem taşımaktadır. Yapılan çalışmalar, bu prosedürlerin çoğunun yüksek hasta memnuniyeti ve düşük komplikasyon oranları ile başarılı olduğunu göstermektedir. Ancak, disiplinin etik ve bilimsel boyutlarını desteklemek için daha fazla araştırmaya ihtiyaç duyulmaktadır.

Anahtar Kelimeler: Kozmetik jinekoloji, Kadın sağlığı, Yenilikler

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EARLY DIAGNOSIS of ORAL CAVITY TUMORS and the IMPORTANCE of EARLY DETECTION

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ABSTRACT

Oral cavity tumors constitute a significant group among head and neck malignancies, with oral squamous cell carcinoma (OSCC) being the most frequently encountered histological subtype. These tumors may develop in various anatomical regions such as the floor of the mouth, tongue, palate, buccal mucosa, and gingiva. Tobacco and alcohol use, poor oral hygiene, HPV infection, and chronic trauma are among the primary risk factors. Unfortunately, the majority of OSCC cases are diagnosed at a late stage, as they are often only recognized when symptoms become prominent or lesions become painful. Early diagnosis enables intervention during the localized stage of the disease, thereby increasing treatment success, prolonging survival, and reducing morbidity. The diagnostic process begins with a detailed medical history and physical examination. Lesions such as ulcers that persist for more than two weeks, leukoplakia, erythroplakia, or mixed lesions should be carefully evaluated. Lymph node examination should be performed, and in suspicious lesions, excisional or incisional biopsy followed by histopathological evaluation is essential. This method is still regarded as the gold standard for definitive diagnosis. In recent years, several non-invasive adjunctive diagnostic tools have been introduced into clinical practice. Techniques such as toluidine blue staining, brush biopsy, and autofluorescence imaging (VELscope) are helpful in assessing the malignant potential of lesions. Additionally, optical imaging techniques such as fluorescence diagnosis, optical coherence tomography (OCT), and laser confocal endomicroscopy show promising potential in early detection. Molecular imaging modalities like CT, MRI, and PET can be used to evaluate cellular and metabolic activity of tumors. Furthermore, innovative approaches such as salivary proteomics, spectroscopy, and biomarker analysis also hold promise for early diagnosis. Dentists play a critical role in early detection, as up to 99% of oral cancers can be identified through routine oral examinations. Therefore, increasing awareness among healthcare professionals, ensuring regular screening of high-risk groups, and promoting public education on self-examination of the oral cavity are of great importance. In conclusion, the widespread implementation of early diagnostic strategies and the integration of modern diagnostic tools into clinical practice are essential steps toward reducing mortality and morbidity while improving patient prognosis in oral cavity tumors.

Keyword: Oral cancer, Early diagnosis, Biopsy, Screening

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AĞIZ İÇİ TÜMÖRLERİNİN ERKEN TANISI VE ERKEN TANININ ÖNEMİ

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ÖZET

Ağız içi tümörleri, baş-boyun bölgesi maligniteleri içerisinde önemli bir yer tutmakta olup, en sık görülen histolojik alt tipi oral skuamöz hücreli karsinom (OSCC)'dur. Bu tümörler; ağız tabanı, dil, damak, yanak mukozası ve diş etleri gibi birçok anatomik bölgede gelişebilir. Tütün ve alkol kullanımı, kötü ağız hijyeni, HPV enfeksiyonu ve kronik travmalar, başlıca risk faktörleri arasında yer almaktadır. Ne yazık ki OSCC olgularının büyük bir kısmı, ancak semptomlar belirginleştiğinde veya lezyonlar ağrılı hale geldiğinde fark edilmekte ve geç evrede tanı almaktadır. Erken tanı, hastalığın lokalize olduğu evrede müdahale edilmesini sağlayarak tedavi başarısını artırır, yaşam süresini uzatır ve morbiditeyi azaltır. Tanı süreci detaylı anamnez ve fizik muayene ile başlar. Özellikle iki haftadan uzun süredir iyileşmeyen ülserler, lökoplaki, eritroplaki veya kombine lezyonlar dikkatle değerlendirilmelidir. Lenf nodu muayenesi yapılmalı ve şüpheli lezyonlarda eksizyonel ya da insizyonel biyopsi ile histopatolojik inceleme gerçekleştirilmelidir. Bu yöntem halen altın standart olarak kabul edilmektedir. Tanıya yardımcı non-invaziv araçlar da son yıllarda klinik kullanıma girmiştir. Toluidin mavisi ile boyama, brush biyopsi, otofloresan görüntüleme (VELscope) gibi teknikler, lezyonların malign potansiyelini değerlendirmede faydalıdır. Ayrıca floresans tanı, optik koherens tomografi (OCT) ve lazer konfokal endomikroskopi gibi optik görüntüleme yöntemleri erken tanıda umut vadetmektedir. Moleküler görüntüleme teknikleri olan BT, MRG ve PET, tümörlerin hücresel ve metabolik aktivitesini değerlendirmede kullanılabilmektedir. Bununla birlikte, tükürük proteomikleri, spektroskopi ve biyobelirteç analizi gibi yenilikçi yaklaşımlar da erken tanıya katkı sağlayabilecek potansiyele sahiptir. Diş hekimleri, rutin ağız muayeneleri yoluyla oral kanserlerin %99'una kadarını tespit edebilmeleri nedeniyle erken tanıda kritik rol üstlenmektedir. Bu nedenle sağlık profesyonellerinin farkındalığının artırılması, risk gruplarının düzenli taramaya alınması ve toplum genelinde bireysel ağız içi muayene bilincinin oluşturulması büyük önem taşır. Sonuç olarak, ağız içi tümörlerinde erken tanının yaygınlaştırılması ve modern tanı araçlarının klinik pratiğe entegrasyonu, mortalite ve morbidite oranlarını düşürerek hasta prognozunu iyileştirecek önemli adımlardır.

Anahtar Kelimeler: Ağız kanseri, Erken tanı, Biyopsi, Tarama

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Bilgilerinizi ve gereğini arz ederim.

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Bilgilerini ve gereğini rica ederim.

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