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4thInternational Congress of Multidisciplinary Medical and Health Sciences Studies

Parents' Awareness and Attitudes Toward Teledentistry: A Preliminary Study

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Abstract

Teledentistry is increasingly used to support oral health care beyond traditional clinical settings. This preliminary cross-sectional study evaluated parents' awareness, experience, and attitudes toward teledentistry regarding their children's oral health. The first 80 parents who completed an online questionnaire were included after approval by the Karabük University Non-Interventional Clinical Research Ethics Committee (No: 2025/2513). Sociodemographic data were collected, and a 13-item, 5-point Likert scale assessed perceived benefits, barriers, and concerns. Of the participants, 77.5% were female, and the mean age was 37.3 ± 6.2 years. Only 16.3% had heard of teledentistry, while 10.0% had used such a service for their child. Despite low awareness, 20.0% reported contacting a dentist by sending a photograph, suggesting that some parents already use teledentistry-like communication without knowing the term. The highest mean score was for the need for face-to-face examination in clinically important cases (mean = 4.41/5.00), followed by teledentistry as a useful alternative in emergencies or when face-to-face examination is not possible (mean = 4.31), and its potential to save time and reduce costs (mean = 4.21). The main concern was misdiagnosis risk (mean = 3.69), while confidence in data security was moderate to positive (mean = 3.59), and technological barriers were limited (mean = 2.13). Overall, despite limited prior awareness and experience, parents showed generally positive attitudes, and some were already using similar communication methods without knowing the term. Addressing concerns about diagnostic reliability and data security may improve acceptance. Teledentistry appears best positioned as a supportive tool for triage and follow-up rather than a substitute for in-person dental care.

Keywords: Teledentistry; Pediatric Dentistry; Parental Attitudes; Health Communication; Digital Health

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4th International Congress of Multidisciplinary Medical and Health Sciences Studies

Bioactive Restorative Materials in Pediatric Dentistry: Mechanisms, Clinical Applications, and Contemporary Perspectives

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Nevra KARAMÜFTÜOĞLU²

Abstract

Dental caries is a multifactorial and biofilm-mediated disease characterized by an imbalance between demineralization and remineralization processes. Contemporary pediatric dentistry increasingly emphasizes biologically oriented restorative approaches aimed not only at replacing lost dental tissue but also at supporting remineralization and reducing secondary caries risk. In this context, bioactive restorative materials have gained considerable attention because of their ability to interact with dental tissues and the oral environment through therapeutic ion release and biologically beneficial effects.

This review aims to evaluate the mechanisms, clinical applications, advantages, and limitations of bioactive restorative materials used in pediatric dentistry based on current evidence. Glass ionomer cements, resin-modified glass ionomer cements, bioactive composites, calcium silicate-based materials, and alkasite restorative systems were reviewed regarding their ion release capacity, remineralization potential, antibacterial properties, and clinical performance.

Current evidence indicates that these materials may contribute to the prevention of secondary caries by releasing fluoride, calcium, phosphate, and other therapeutic ions, promoting apatite formation, buffering acidic environments, and modulating bacterial activity. However, limitations related to mechanical durability, long-term clinical evidence, material stability, and cost remain important concerns.

Bioactive restorative materials represent a promising advancement in minimally invasive and preventive pediatric dentistry. Further long-term clinical studies are needed to clarify their biological effectiveness and optimize their clinical indications.

Keywords: Bioactive restorative materials, Pediatric dentistry, Remineralization, Dental caries, Ion release

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4thInternational Congress of Multidisciplinary Medical and Health Sciences Studies

Recognition of Anatomical Landmarks on Panoramic and Periapical Radiographs Among Dental Students: A Comparative Study

Özlem Büşra DOĞAN¹

Abstract

Accurate identification of anatomical landmarks on dental radiographs is essential for radiographic interpretation and clinical decision-making. This study aimed to evaluate dental students' ability to recognize common anatomical landmarks on panoramic and periapical radiographs and to compare landmark identification performance between these imaging modalities. Thirty-eight fourth- and fifth-year dental students participated in the study. Students were asked to identify 20 anatomical landmarks on standardized panoramic and periapical radiographic images. Responses were scored as correct or incorrect, and total landmark recognition scores were calculated for each imaging modality. Descriptive statistics, the Wilcoxon signed-rank test, and the Mann–Whitney U test were used for analysis. Mean landmark recognition scores were significantly higher for panoramic than for periapical radiographs (13.68 ± 2.27 vs. 11.47 ± 2.94 ; $Z = -3.990$, $p < 0.001$). No significant differences were found between fourth- and fifth-year students in either modality ($p > 0.05$). Among fourth-year students, the floor of the maxillary sinus showed the highest identification rate on both modalities, whereas the zygomatic process on panoramic radiographs and the anterior nasal spine on periapical radiographs showed the lowest rates. Among fifth-year students, the floor of the maxillary sinus demonstrated the highest identification rate on both modalities, while the incisive canal on panoramic radiographs and the median palatine suture on periapical radiographs showed the lowest identification rates. Dental students demonstrated significantly better anatomical landmark recognition on panoramic radiographs than on periapical radiographs. These findings may contribute to the optimization of radiographic anatomy teaching in undergraduate dental education.

Keywords: Panoramic radiography; Periapical radiography; Anatomical landmarks; Dental education; Oral and maxillofacial radiology

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4thInternational Congress of Multidisciplinary Medical and Health Sciences Studies

CBCT Analysis of Radicular and Dentigerous Cysts: Cortical Expansion and Perforation

Hatice BİLTEKİN¹

Abstract

Objective: The aim of this study is to retrospectively and comparatively analyze the radiological behavioral patterns (cortical bone expansion and perforation) of the most common inflammatory (radicular) and developmental (dentigerous) odontogenic cysts in the jaws using Cone Beam Computed Tomography (CBCT) data.

Materials and Methods: In this study, CBCT images of a total of 48 cystic lesion cases with a definitive histopathological diagnosis were retrospectively examined. Statistical analyses were performed on n=44 main cases (34 radicular cysts, 10 dentigerous cysts) that reached a sufficient sample size to maintain the statistical power of the study. The anatomical localization of the lesions, buccal/lingual cortical bone expansion, and perforation status were evaluated on the sections. Chi-square and independent samples T-tests were used for data analysis.

Results: The mean age of the 48 patients included in the study was 43.29 ± 12.59 , with 33.3% being women and 66.7% being men. Both cyst types showed a significant predisposition to mandible involvement (over 70%), and there was no statistically significant difference between the groups in terms of localization ($p=0.408$). When the effects on bone were examined, it was determined that radicular cysts (88.2%) caused statistically significantly more bone expansion compared to dentigerous cysts (50.0%) ($p=0.018$). Similarly, the frequency of cortical perforation was found to be significantly higher in radicular cysts (52.9%) than in dentigerous cysts (10.0%) ($p=0.027$). According to demographic data, no significant difference was observed between cyst types in terms of age ($p=0.263$) and gender distribution ($p=0.067$).

Conclusion: According to our findings, radicular cysts were observed to cause a higher rate of cortical expansion and perforation compared to dentigerous cysts. The use of CBCT provides the clinician with important data in the three-dimensional evaluation of the relationship of cystic lesions to anatomical margins and in surgical planning.

Keywords: Cone-beam computed tomography, jaw cysts, radicular cyst, dentigerous cyst, bone resorption

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4thInternational Congress of Multidisciplinary Medical and Health Sciences Studies

Artificial Intelligence in Orthodontic Diagnosis and Treatment Planning

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Abstract

Artificial intelligence (AI) has become an increasingly important component of contemporary orthodontics, offering new opportunities to enhance diagnostic accuracy, treatment planning, and clinical decision-making. Advances in machine learning and deep learning have expanded the range of AI applications in orthodontics, supporting diagnostic assessment, improving the prediction of treatment outcomes, and assisting clinicians during treatment planning. The aim of this review is to provide an overview of current AI applications in orthodontic diagnosis and treatment planning and to discuss their potential contributions to clinical practice.

A review of the current literature indicates that AI can assist orthodontists in cephalometric landmark identification, skeletal and dental classification, and CBCT-based assessment, while also supporting more objective and data-driven treatment planning. Automated image analysis systems have demonstrated promising accuracy in cephalometric and CBCT-based assessments, highlighting the potential of AI to improve efficiency and consistency in clinical practice. Furthermore, AI-based models have shown considerable promise in craniofacial growth prediction, treatment outcome forecasting, extraction decision-making, and orthognathic treatment planning. In clear aligner therapy, AI-supported systems facilitate digital treatment setup, tooth movement prediction, and treatment simulation, which may contribute to improved treatment efficiency and predictability.

Despite these advances, AI should be regarded as a complementary tool rather than an autonomous decision-maker. Clinical expertise, expert evaluation, and patient-specific considerations remain essential for accurate diagnosis and appropriate treatment planning. Future developments are expected to further improve predictive accuracy, optimize treatment planning processes, and strengthen AI-assisted clinical decision support in orthodontics.

Keywords: Artificial intelligence; Orthodontics; Treatment planning; Clinical decision support; Clear aligner therapy.

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4thInternational Congress of Multidisciplinary Medical and Health Sciences Studies

Autogenous Bone Augmentation with Titanium Mesh in the Posterior Maxilla: A Case Report

Oğuz BEŞİR¹

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Abstract

Insufficient alveolar bone volume in the posterior maxilla remains a major challenge for implant-supported rehabilitation. Guided bone regeneration (GBR) using titanium mesh has become a predictable treatment option for reconstructing severe alveolar ridge defects due to its ability to maintain space and stabilize graft materials. This case report presents the surgical management of a posterior maxillary bone deficiency using a titanium mesh and autogenous bone graft.

A 52-year-old male patient with no significant medical history was referred to our clinic for the rehabilitation of missing teeth in the posterior maxillary region. Clinical and radiographic examinations, including panoramic radiography and cone-beam computed tomography, revealed inadequate bone volume for implant placement. Therefore, horizontal and vertical ridge augmentation using a titanium mesh was planned.

Following local anesthesia, a full-thickness mucoperiosteal flap was elevated. Autogenous bone particles were harvested from the maxillary tuberosity and mixed with platelet-rich fibrin (PRF) to enhance handling properties and support tissue healing. The graft mixture was placed into a pre-shaped titanium mesh, which was then stabilized over the defect area using fixation screws. Primary wound closure was achieved without tension.

Postoperative healing was uneventful, with no signs of infection, graft loss, or mesh exposure during the follow-up period. The augmented site demonstrated satisfactory volume preservation, creating favorable conditions for future implant placement.

This case highlights the effectiveness of combining autogenous bone grafts harvested from the maxillary tuberosity with PRF and titanium mesh for the reconstruction of posterior maxillary defects. The technique may provide a reliable and predictable approach for achieving adequate bone volume prior to implant rehabilitation.

Keywords: Titanium mesh, autogenous bone graft, guided bone regeneration, posterior maxilla, dental implant.

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4th International Congress of Multidisciplinary Medical and Health Sciences Studies

Oral Health Profile of Schoolchildren in Central Anatolia, Türkiye: A Pilot Study

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Aysima DARICI²

Abstract

This study aimed to evaluate the oral and dental health status, oral hygiene habits, and orthodontic characteristics of middle school children aged 10–11 years in Türkiye.

This cross-sectional pilot study included 90 middle school students aged 10–11 years. Oral and dental health status was assessed through clinical oral examinations, while oral hygiene habits and demographic characteristics were recorded using a questionnaire form. Dental caries experience was evaluated using the DMFT, DMFS, dmft, and dmfs indices.

A total of 90 children (44 girls and 46 boys) with a mean age of 10.52 ± 0.50 years were examined. The mean DMFT and dmft scores were 2.36 ± 2.05 and 2.02 ± 2.29 , respectively, while the mean DMFS and dmfs scores were 2.97 ± 2.09 and 3.94 ± 5.02 , respectively. Class II and Class III molar relationships were observed in 31.1% of the participants. Systemic disease and/or regular medication use was reported in 11.1% of the children. Additionally, 2.2% of the participants did not own a toothbrush, and 12.2% reported current dental pain. Although 88.9% of the children had previously visited a dentist, only 33.3% reported brushing their teeth twice daily, while 3.3% reported inadequate self-care habits. Despite relatively high access to dental services, toothbrushing habits were insufficient and caries prevalence remained high among the participants.

The findings of this pilot study indicate a considerable need for preventive oral health practices and oral hygiene education among children aged 10–11 years in Türkiye. These results may contribute to the planning of larger epidemiological studies and school-based preventive oral health programs

Keywords: Oral health, Schoolchildren, Dental caries, DMFT index, Oral hygiene

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4th International Congress of Multidisciplinary Medical and Health Sciences Studies

Evaluation of the Relationship Between Impacted Third Molars and the Mandibular Canal According to Panoramic Radiographic Findings

Duygu OFLUOĞLU¹

Abstract

Impacted mandibular third molars are frequently encountered in oral and maxillofacial surgery. The relationship between the roots of impacted third molars and the mandibular canal is clinically important because close anatomical proximity may increase the risk of inferior alveolar nerve injury during extraction. Panoramic radiography is commonly used as the first-line imaging method for preoperative assessment. This retrospective single-center study aimed to evaluate the relationship between impacted mandibular third molars and the mandibular canal according to panoramic radiographic findings. A total of 60 impacted mandibular third molars with adequate panoramic radiographic quality were included. Age, sex, tooth side, angulation according to Winter classification, Pell-Gregory ramus and depth classification, mandibular canal superimposition, root darkening, interruption of the canal cortical border, canal narrowing/deviation, and presence of close mandibular canal relationship were recorded. Teeth were divided into two groups according to the presence or absence of close canal relationship. Close mandibular canal relationship was identified in 26 teeth (43.3%). Horizontal angulation, Pell-Gregory Class III position, and Pell-Gregory depth Class C were significantly more frequent in teeth with close canal relationship. Root darkening, interruption of the canal cortical border, and canal narrowing/deviation were also significantly associated with close canal relationship. These findings suggest that panoramic radiography provides clinically useful information for identifying impacted mandibular third molars with potential proximity to the mandibular canal. Systematic evaluation of panoramic risk signs may help determine the need for further imaging and improve surgical planning.

Keywords: Impacted third molar; mandibular canal; panoramic radiography; inferior alveolar nerve; Pell-Gregory classification

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4thInternational Congress of Multidisciplinary Medical and Health Sciences Studies

Aesthetic and Functional Rehabilitation of Anterior Region Following Dentoalveolar Trauma: Case Report

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Seda Nur BOZKURT⁴

Abstract

The aim of this case report is to present the multidisciplinary rehabilitation of a patient suffering from esthetic and functional compromise due to dentoalveolar trauma.

The patient's history revealed the loss of tooth #11 resulting from dentoalveolar trauma. Intraoral and radiographic evaluations confirmed the avulsion of tooth #11. Additionally, irregularities in the lamina dura and widening of the periodontal ligament space were detected in teeth #12 and #21, which also exhibited tenderness to percussion during clinical examination. Following consultation with the Department of Endodontics, root canal treatment was performed on teeth #12 and #21 due to the risk of loss of vitality. The treatment plan included an implant-supported fixed prosthesis for the region of tooth #11, all-ceramic crown restorations for teeth #12 and #21, and porcelain laminate veneers for teeth #13, #22, #23, and #24 to ensure esthetic integration.

In the surgical phase, a dental implant was placed in the region of tooth #11, followed by the fabrication of a provisional crown one week post-operatively. Upon completion of soft tissue healing, a final impression was taken. To maximize esthetic and biological compatibility, a Zirconia Custom Abutment on a Titanium Base was fabricated.

During the prosthetic rehabilitation phase, teeth #13, #22, #23, and #24 were prepared adhering to minimally invasive principles, while teeth #12 and #21 were prepared according to full-coverage crown protocols. Lithium disilicate was selected as the restorative material for all restorations. Final impressions were obtained following gingival retraction, and the marginal adaptation of the laboratory-fabricated restorations was verified. Following necessary occlusal and esthetic adjustments, the treatment was concluded by definitively cementing the restorations using adhesive protocols.

This case demonstrates that complex anterior esthetic challenges following dentoalveolar trauma can be successfully managed through a multidisciplinary approach, appropriate material selection, and meticulous execution protocols.

Keywords: Dentoalveolar trauma, Dental implant, Laminate veneer, Lithium disilicate, Anterior aesthetic rehabilitation

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Hybrid Implant Rehabilitation in Atrophic Jaws: A Subperiosteal Approach in the Maxilla and the All-on-Four Concept in the Mandible: A Case Report

Bilal BAHAR¹

Abstract

Severe maxillary ridge atrophy, characterized by significant horizontal and vertical alveolar bone loss, often precludes conventional implant placement due to insufficient anatomical support. Traditional grafting procedures in such cases may involve high morbidity, prolonged healing periods, and unpredictable resorption risks. Currently, CAD/CAM-engineered patient-specific subperiosteal implants (SPI) offer an effective alternative by utilizing cortical bone support, thereby eliminating the need for complex bone augmentation. The purpose of this case report is to present the clinical stages and rehabilitative outcomes of a synergistic surgical approach combining patient-specific SPI in the maxilla with the All-on-Four protocol in the mandible. Case Presentation: A 69-year-old female patient presented with a significant reduction in masticatory function. Medical history revealed controlled Type 2 Diabetes Mellitus. Intraoral examination showed severe bimaxillary ridge atrophy. CBCT evaluation confirmed horizontal and vertical bone deficiency in the maxilla, accompanied by extensive sinus pneumatization. Despite generalized mandibular atrophy, the anterior region was found to have sufficient bone volume for implant-supported rehabilitation. Consequently, a treatment plan consisting of a patient-specific SPI for the maxilla and an All-on-Four protocol for the mandible was implemented. Surgical Procedure: In the maxilla, following full-thickness flap elevation and exposure of the buttress regions, a patient-specific SPI was rigidly fixed with micro-screws after guide-mediated osteoplasty. In the mandible, four implants were placed in the interforaminal region according to the All-on-Four protocol. Periosteal releasing incisions were performed in both jaws to ensure tension-free primary closure, and the procedure was finalized with 4-0 vicryl sutures. Postoperatively, systemic antibiotics, analgesics, and antiseptic mouthwash were prescribed, along with standardized oral care instructions. Results: Clinical and radiological evaluations revealed healthy peri-implant tissues and complete osseointegration. No resorptive changes or complications were observed. In conclusion, the combination of patient-specific SPI in the maxilla and the All-on-Four protocol in the mandible is a reliable and comfortable rehabilitative option that eliminates the need for grafting in cases of severe atrophy. The combination of patient-specific SPI and the All-on-Four protocol is a reliable treatment option that eliminates the need for grafting, minimizes surgical morbidity, and ensures rapid functional rehabilitation in cases of severe atrophy.

Keywords: Subperiosteal Implants, All-on-Four Protocol, Maxillary Atrophy, Computer-Aided Design (CAD/CAM).

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Comparative Evaluation of Answers to Restorative Dentistry Questions Asked in the Dental Specialisation Examination Provided by Four Different Artificial Intelligence Systems

Serra KUTLU KATIRCIOĞLU¹

Abstract

The integration of artificial intelligence has become pervasive in numerous disciplines, including the field of dentistry. However, the reliability and level of knowledge of artificial intelligence applications are uncertain. The objective of this study is to evaluate the responses provided by four distinct artificial intelligence models to contemporary Dental Specialisation Entrance Examination (DSE) inquiries posed in the domain of Restorative Dentistry.

Current Restorative Dentistry questions asked in the DSE between 2012 and 2025 were simultaneously posed to AI-powered chatbots named Co-pilot, ChatGPT-3.5, Gemini, and Perplexity AI. A total of 133 questions were asked to the chatbots simultaneously, and the accuracy of their responses was evaluated. The SPSS (IBM Corp. Released 2017. IBM SPSS Statistics for Windows, Version 25.0) program was utilized for the execution of statistical analyses, with $p < 0.05$ (α) being designated as the threshold for statistical significance. The Cochran's Q test was employed to assess the comparative accuracy of the models. The McNemar test was employed to facilitate the evaluation of artificial intelligence models through a series of paired comparisons.

The findings of this study indicate a substantial discrepancy in the accuracy rates of the examined artificial intelligence models ($p < 0.001$). In the pairwise comparisons, the differences between Copilot and Perplexity AI ($p = 0.002$), ChatGPT-3.5 and Perplexity AI ($p < 0.001$), and Gemini and Perplexity AI ($p < 0.001$) were found to be significant.

A comparative analysis of ChatGPT-3.5 and Gemini revealed that both models exhibited comparable levels of expertise in the domain of restorative dentistry. Furthermore, an evaluation of their performance revealed that ChatGPT-3.5 demonstrated a higher accuracy rate compared to Copilot and Perplexity AI. The utilization of artificial intelligence models should be approached with a degree of caution, taking into account their reliability.

Keywords: Dental specialisation exam, artificial intelligence, restorative dentistry

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Alveolar Ridge Augmentation with Customized Titanium Mesh: Two Case Reports

Cansu GEBEN¹

Muhammet Bahattin BİNGÜL²

Abstract

Alveolar bone deficiencies present a significant challenge in implant dentistry, particularly in cases requiring horizontal and/or vertical augmentation. Patient-specific titanium mesh systems have gained increasing attention due to their ability to provide stable space maintenance and precise adaptation to defect morphology. This study aims to present the clinical application of customized titanium mesh (CUSTIMESH) in the reconstruction of mandibular bone defects through two case reports.

The first case involved a 22-year-old female patient presenting with localized bone loss in the left mandibular region. Clinical and radiological evaluations indicated the need for guided bone regeneration using a titanium mesh system. The second case was a 20-year-old female patient with bilateral mandibular bone defects. Following comprehensive clinical and radiographic assessment, reconstruction with titanium mesh was planned.

In both cases, patient-specific titanium mesh was designed using digital planning to ensure optimal adaptation to the defect sites. A combination of autogenous bone graft and xenograft was used to enhance bone regeneration. The meshes were applied to maintain space and stabilize the graft material. Healing was uneventful, with no major complications such as infection or mesh exposure observed during the follow-up period.

After a healing period of six months, sufficient bone volume was achieved, allowing for successful implant placement in both patients.

Within the limitations of these case reports, customized titanium mesh appears to be a reliable and effective method for the reconstruction of complex mandibular bone defects. Its advantages include precise fit, enhanced stability, and predictable regenerative outcomes. Further studies with larger sample sizes are required to confirm these findings.

Keywords: Customized titanium mesh; Guided bone regeneration; Alveolar ridge augmentation; Mandibular bone defects; Dental implants

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Retrospective Evaluation of The Combined Treatment Outcomes of Deepithelialized Connective Tissue Graft and Titanium-Prepared Platelet-Rich Fibrin Using the Tunnel Technique in Patients with Interdental Papilla Loss

*Makbule CAN¹
Alper KIZILDAĞ²*

Abstract

Titanium prepared platelet rich fibrin (T PRF) has emerged as a promising biomaterial in dentistry. This study aimed to retrospectively evaluate the efficacy of deepithelialized gingival grafts (DGG) and T PRF in papil reconstruction surgery using the Han and Takei method.

Method: This retrospective study included 34 patients (115 interdental papilla) with Class I, II, and III papil loss, treated using the Hana and Takei method (D G G or T TRF). Demographic data (age and gender), dentogingival parameters (tooth shape, papil site, jaw type, and papil loss classification), and clinical assessments were evaluated. Clinical parameters, including probing depth (PD), gingival index (GI), plaque index (PI), gingival thickness (GT), keratinized tissue height (KTH), black triangle width (BTW), black triangle height (BTH), papil fill percentage (%PF), and black triangle area (BTA), were recorded preoperatively and postoperatively at 1st, 3rd and 6th months.

Results: In our study, no significant differences were found among the groups in terms of demographic and dentogingival parameters. Clinically, the DGG group demonstrated significant increases in PD, KTH, and GT from baseline to 6 months. In contrast, the T PRF group exhibited a smaller increase in GT and reductions in both PD and KTH. Moreover, reductions in BTW, BTH, BTA, and %PF values were observed in both the DGG and T PRF groups up to the 6th month.

Conclusion: Both techniques were found to be effective in the treatment of interdental papil defects. T PRF demonstrated potential as a viable alternative to the gold standard connective tissue graft, offering comparable outcomes in papil reconstruction.

Keywords: Deepithelialized gingival graft, Titanium prepared Platelet Rich Fibrin, Han and Takei technique, interdental papil loss.

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Effect of Build Orientation on the Internal Fit of 3D-Printed Permanent Resin Crowns

Bülent Kadir TARTUK¹

Abstract

This study aimed to evaluate the internal fit of permanent resin crowns produced using the stereolithography (SLA) method at three different build orientations (0°, 45°, and 90°).

A maxillary first molar tooth was prepared on a typodont model. After preparation, the tooth was scanned using an intraoral scanner and a crown design was created using CAD software. The designed crowns were exported in STL format and divided into three experimental groups according to build orientation (0°, 45°, and 90°). Ten crowns were produced for each group, resulting in a total of 30 specimens. The crowns were fabricated using a stereolithography (SLA) three-dimensional printer with a permanent crown resin. Internal fit was evaluated using the silicone replica technique. The obtained silicone replicas were sectioned in the mesio-distal direction and examined under a stereomicroscope at 40× magnification. Measurements were performed at ten different points for each specimen. Data were analyzed using one-way analysis of variance (ANOVA) and Tukey HSD post-hoc test ($\alpha = 0.05$). The mean internal gap values for the 0°, 45°, and 90° build orientations were $68.35 \pm 11.84 \mu\text{m}$, $92.04 \pm 16.67 \mu\text{m}$, and $116.42 \pm 24.92 \mu\text{m}$, respectively. There was a statistically significant difference between the groups ($p < 0.001$). Post-hoc analysis revealed significant differences among all groups ($p < 0.05$). The lowest internal gap values were observed at a build orientation of 0°, whereas the highest values were recorded at 90°.

Build orientation significantly affects the internal fit of permanent resin crowns produced using three-dimensional printing. The horizontal build orientation (0°) demonstrated the best internal adaptation, whereas the vertical build orientation (90°) resulted in higher internal gap values. Nevertheless, all build orientations exhibited internal fit values within clinically acceptable limits.

Keywords: 3D printing; build orientation; internal fit; resin crown; additive manufacturing.

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Peripheral Osteoma: A Case Report

Yasemin ŞAHİN¹

Peruze ÇELENK²

Abstract

Osteoma is a benign, slow-growing lesion originating from bone tissue. Although it is commonly observed in the craniofacial region, it is relatively rare in the jaw bones. Osteomas of the jaws are classified as central and peripheral types. Peripheral osteomas arise from the periosteum. They are typically asymptomatic and are often detected incidentally during radiological examinations. In the present case, a peripheral osteoma located in the left mandibular corpus is reported.

A 57-year-old male patient was referred from an external center with a preliminary diagnosis of an odontogenic cyst in the right mandibular third molar region. The patient had no systemic disease. Clinical examination revealed a firm, painless, non-expansile swelling in the left posterior mandible. The overlying mucosa was slightly pale. Radiographic evaluation with panoramic imaging and cone-beam computed tomography (CBCT) showed a well-defined, pedunculated hyperdense lesion measuring approximately 12 × 9 × 10 mm, arising from the lingual cortex of the left mandibular corpus, with a cortical periphery and cancellous center. The patient was referred to Oral and Maxillofacial Surgery for cyst excision, and follow-up was planned for the peripheral osteoma.

Although peripheral osteomas are generally asymptomatic, they should be treated when they cause displacement of adjacent soft tissues or functional impairment. In addition, considering that multiple osteomas may be associated with Gardner syndrome, careful clinical and radiological evaluation is important for accurate diagnosis, differential diagnosis, and appropriate follow-up.

Keywords: Peripheral osteoma; craniofacial benign tumor; mandibular osteoma; cortical bone lesion; cone-beam computed tomography

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4th International Congress of Multidisciplinary Medical and Health Sciences Studies

Compound Odontoma: A Case Report

*Yasemin ŞAHİN¹
Ruveyda BAKKAL²*

Abstract

Odontoma is the most common benign tumor of odontogenic origin. It is classified into three types: complex, compound, and dilated odontoma. These lesions are most commonly observed between the ages of 10 and 20. Compound odontomas typically occur in the maxilla and are often associated with the crown of an unerupted canine tooth. The lesion is usually well-circumscribed and surrounded by a soft tissue capsule. Its internal structure is predominantly radiopaque and consists of tooth-like structures. In this case, a compound odontoma located in the right anterior maxilla is reported.

A 28-year-old male patient presented with residual roots. No systemic disease was reported. Clinical examination revealed residual roots in teeth 14, 16, 24, 37, and 46. Panoramic radiography showed a well-defined radiolucent area with tooth-like radiopaque structures in the right anterior maxilla, adjacent to an impacted canine. Cone-beam computed tomography (CBCT) revealed a mixed-density lesion measuring approximately 10 × 12 × 17 mm, located mesial to the impacted canine, consisting of hyperdense tooth-like structures within a hypodense area and causing buccal expansion. The patient was referred to the Department of Oral and Maxillofacial Surgery with a preliminary diagnosis of compound odontoma. The diagnosis was confirmed histopathologically.

Although odontomas are generally asymptomatic, they may interfere with tooth eruption when associated with impacted teeth. Therefore, careful clinical and radiological evaluation, along with advanced imaging of suspicious lesions, is essential for early diagnosis. Surgical enucleation is the treatment of choice.

Keywords: Odontoma, compound, impacted tooth, odontogenic tumor, cone-beam computed tomography

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Submandibular Bezde Enfekte Sialolitiazis: Bir Olgu Sunumu

Hande SEYİTHANOĞLU DOĞRUER¹

Kaan GÜNDÜZ²

Abstract

Sialoliths are idiopathic calcifications that develop within the ductal system of the salivary glands. They are most frequently observed in the submandibular gland and are more common in middle-aged and older males. Radiographically, some sialoliths appear as homogeneous radiopaque structures, while others exhibit a laminated pattern of calcification. Various imaging modalities, including panoramic radiography, occlusal imaging, cone-beam computed tomography (CBCT), computed tomography (CT), and ultrasonography, are used in their evaluation. Non-calcified stones may be assessed using sialography. A 46-year-old systemically healthy male patient, with a history of smoking half a pack of cigarettes per day, presented to our clinic with a one-week history of painful and fluctuant swelling in the right posterior mandibular region. The patient reported that the pain increased particularly during meals. Panoramic radiographic examination revealed a well-defined, homogeneous radiopaque structure located at the level of the right mandibular corpus, anterior to the angle. To determine its exact localization and to further characterize the lesion, cone-beam computed tomography was performed. CBCT images demonstrated a well-defined, hyperdense calcified lesion with a slightly laminated internal structure, measuring approximately 16 × 8 mm, located in the region of the right submandibular gland on axial sections. Ultrasonographic evaluation revealed a hyperechoic focus within the submandibular gland, producing marked posterior acoustic shadowing. Additionally, increased heterogeneity of the glandular parenchyma was observed. Based on these findings, the lesion was considered consistent with secondary inflammatory changes associated with sialolithiasis. The patient was referred to the Department of Otorhinolaryngology with a diagnosis of submandibular gland sialolithiasis. Sialolithiasis may be asymptomatic in some cases; however, when the submandibular gland is involved, patients typically present with pain and swelling in the floor of the mouth and neck region. Small stones or those located near the ductal orifice may be removed manually or followed up conservatively, whereas larger sialoliths generally require surgical removal.

Keywords: Cone-Beam Computed Tomography, Sialolithiasis, Submandibular Gland

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Distracting Factors in the Operating Room and Their Management: A Systematic Review of Current Approaches

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Abstract

In the operating room environment, a distracting event is defined as an event that may cause the surgical process to be interrupted by distracting surgical team members from their primary tasks. The operating room is a highly complex clinical environment that demands sustained attention, effective communication, precise coordination, and advanced technical competence.

Distracting factors encountered during surgical procedures may adversely influence surgical team performance, disrupt workflow, impair situational awareness, and ultimately compromise patient safety. Distracting factors were classified into four categories; environmental, communication-related, technological, and human factors. The findings demonstrated that frequent door openings, excessive environmental noise, equipment shortages, alarms, mobile phone interruptions, and case-irrelevant conversations were among the most prevalent sources of distraction. These factors contribute to increased cognitive workload, interruptions in task continuity, communication failures, and reduced concentration during critical phases of surgery. Moreover, repeated exposure to distractions may increase the likelihood of preventable medical errors and negatively affect patient outcomes.

Therefore, reducing distractions is crucial for improving perioperative safety, enhancing surgical team performance, and supporting high-quality patient care. Current evidence suggests that strategies such as the sterile cockpit concept, surgical safety checklists, structured communication tools like SBAR, alarm management protocols, and crew resource management training are effective in managing distracting events. Simulation-based training programs and workflow standardization have also been shown to strengthen team communication and reduce avoidable interruptions.

To reduce distractions in the operating room environment, it is recommended to use structured communication strategies, expand team resource management training, and develop standard practice protocols at the institutional level. This review aims to systematically examine the distracting factors encountered in operating rooms and to evaluate contemporary strategies developed to minimize their impact.

Keywords: Operating Room, Distractions, Patient Safety, Surgical Team, Human Factors



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Taste Alterations and Symptom Management in Cancer Patients: A Literature Review

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Abstract

Chemotherapy (CT), which is widely used in cancer treatment, targets malignant cells but also exerts cytotoxic effects on healthy cells, leading to the development of various side effects. Among these adverse effects, taste alteration is considered an important clinical problem that negatively affects nutritional status, quality of life, and symptom burden in cancer patients. Taste alterations are reported more frequently, particularly in treatment protocols involving taxane- and platinum-based CT agents. This symptom may lead to multidimensional problems such as loss of appetite, weight loss, malnutrition, and decreased quality of life. Therefore, early assessment and effective symptom management approaches for taste alterations are of great importance. This review was conducted to examine the prevalence, etiological factors, clinical effects, assessment methods, and symptom management approaches related to CT-induced taste alterations in cancer patients. **Methods:** This study was conducted as a systematic literature review. A literature search was performed using the PubMed, Scopus, Web of Science, and ScienceDirect databases. The keywords “cancer,” “chemotherapy,” “taste alteration,” “taste disorder,” “taste changes,” and “symptom management” were used during the search process. English-language studies published between 2015 and 2026, available in full text, and investigating the prevalence, causes, clinical effects, assessment, and symptom management approaches of CT-induced taste alterations were included in the review. The included studies were evaluated thematically, and the findings were summarized narratively. The reviewed literature indicated that the prevalence of taste alterations among cancer patients receiving CT is high and varies depending on CT agents and patient characteristics. Taste alterations were reported more frequently, particularly among patients with breast, lung, and gastrointestinal cancers. These alterations were associated with important outcomes such as loss of appetite, reduced food intake, weight loss, malnutrition, and impaired quality of life. Both subjective assessment tools, including CITAS, CTCAE, and STTA, and objective methods such as electrogustometry and taste recognition tests were used in the evaluation of taste alterations. Non-pharmacological interventions, including nutritional modifications, oral care practices, self-management interventions, and oral cryotherapy, were reported to be effective in symptom management. In addition, multidisciplinary team approaches and individualized nursing care were emphasized as important components of symptom management. CT-induced taste alteration is a common symptom in cancer patients that negatively affects nutritional status and quality of life. Therefore, systematic assessment and individualized symptom management approaches are required in clinical practice. Nurses play a crucial role in symptom assessment, patient education, and counseling processes, contributing to the reduction of symptom burden and the improvement of quality of life. Further randomized controlled studies evaluating evidence-based interventions for the management of taste alterations are needed.

Keywords: Cancer, Chemotherapy, Taste alteration, Symptom management, Nursing.

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The Effects of Virtual Reality Applications in Hemodialysis Patients: A Review of the Current Literature

Sebiha AKTAŞ US¹

Abstract

Patients undergoing hemodialysis may face various challenges, such as pain, fatigue, anxiety, depression, and a decline in quality of life, due to repeated needle insertions, long treatment sessions, physical limitations, and the burden of the disease. In addition to pharmacological approaches, there is growing interest in complementary and innovative interventions for managing these issues. Virtual reality applications, which have become widespread in the healthcare sector in recent years, stand out as a potential intervention that could support the physical and psychological well-being of hemodialysis patients. Current studies suggest that virtual reality applications may be beneficial in reducing pain, anxiety, and depression in hemodialysis patients. In particular, it has been reported that virtual reality applications used during arteriovenous fistula cannulation reduce pain and anxiety levels, increase patient satisfaction, and have positive effects on certain physiological parameters. Additionally, it is noted that virtual reality-supported interventions can improve psychosocial outcomes such as life satisfaction, subjective well-being, self-efficacy, and social functioning. It has also been reported that nature-themed and mindfulness-based virtual reality applications can reduce stress levels and promote positive emotions. In addition to psychological effects, it has been reported that virtual reality-supported exercise programs may lead to improvements in physical performance, walking capacity, and physical activity levels. However, it is observed that the majority of studies were conducted with small sample groups, and there were variations in the duration of the interventions and the virtual reality content used. In conclusion, current evidence suggests that virtual reality applications show promising results in reducing pain, anxiety, depression, and stress, as well as in supporting quality of life and physical function in hemodialysis patients. However, larger-scale, well-designed studies are needed to establish the effectiveness of these applications and their long-term outcomes.

Keywords: Hemodialysis, dialysis, virtual reality, VR, quality of life.

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Assessment of Health Beliefs and Knowledge Levels Regarding HPV Infection and Vaccination Among Nurses and Midwives Working in Women's Health Services

Hatice BAYRAKCI DARGİN¹

Nuriye PEKCAN²

Abstract

This descriptive and correlational study aimed to determine the knowledge levels and health beliefs of nurses and midwives working in women's health services regarding HPV infection and vaccination, and to examine the relationship between them. The study was conducted between November and December 2025 in the Obstetrics and Gynecology block of a city hospital in Istanbul. The sample consisted of 205 nurses and midwives who were actively working during the data collection period and had no prior HPV diagnosis. Data were collected using a Demographic Information Form, the HPV Knowledge Scale, and the Health Belief Model Scale for HPV Infection and Vaccination. Mann-Whitney U and Kruskal-Wallis H tests and Spearman correlation analysis were used for non-normally distributed variables, and Bonferroni correction was applied for multiple comparisons. The mean HPV knowledge score was 20.78 ± 4.81 . The mean scores for the subscales of the Health Belief Model Scale for HPV Infection and Vaccination were as follows: Perceived Severity 3.12 ± 0.68 , Perceived Barriers 2.31 ± 0.59 , Perceived Benefits 3.01 ± 0.66 , and Perceived Susceptibility 2.94 ± 0.74 . Statistically significant differences were found in total and subscale scores of the HPV Knowledge Scale according to gender, occupation, educational status, marital status, family type, age at first sexual experience, frequency of Pap smear testing, HPV screening history, HPV-related training, and intention to vaccinate children or others against HPV. Significant differences were also found in total and subscale scores of the Health Belief Model Scale according to educational status, active sexual life, personal HPV vaccination status, and intention to vaccinate children or others. A weak positive correlation was identified between the total and subscale scores of the HPV Knowledge Scale and the Perceived Severity, Perceived Benefits, and Perceived Susceptibility subscales of the Health Belief Model Scale.

Conclusion: Participants demonstrated a moderate level of HPV knowledge, with perceived severity and perceived benefits emerging as the higher-scoring subscales, while perceived barriers and perceived susceptibility remained relatively low. A weak positive relationship was found between knowledge levels and health beliefs, and individual characteristics such as educational status, personal vaccination experience, and intention to recommend vaccination were found to significantly influence both knowledge and belief scores. These findings highlight the importance of strengthening HPV-focused in-service training programs for nurses and midwives and developing institutional policies that promote vaccination.

Keywords: Human Papillomavirus, Health Belief Model, Vaccination, Nurses-Midwifery, Women's Health Services

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The Relationship Between Emotional Intelligence, Parental Attitudes, and Social Problem-Solving Skills Among Nursing and Midwifery Students

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Berna EREN FİDANCI²

Meltem UĞURLU³

Abstract

This study aimed to examine the relationship between emotional intelligence, perceived parental attitudes, and social problem-solving skills among nursing and midwifery students.

This descriptive study was conducted after obtaining ethical approval from the relevant institutional ethics committee. The sample consisted of 452 nursing and midwifery students who met the inclusion criteria, calculated using a known population sampling formula. Data were collected online using a sociodemographic form, the Emotional Intelligence Trait Scale, the Short Form of the Perceived Parental Attitudes–Child Form, and the Social Problem-Solving Inventory–Short Form. Descriptive statistics and Pearson correlation analysis were used for data analysis, and statistical significance was set at $p<0.05$.

Of the participants, 93.4% were female and 61.1% were first-year students. The mean emotional intelligence score was 18.52 ± 4.47 , the perceived maternal attitude score was 50.31 ± 7.93 , the perceived paternal attitude score was 48.11 ± 7.47 , and the social problem-solving score was 50.41 ± 10.04 . Correlation analysis revealed a strong positive relationship between perceived maternal and paternal attitudes ($r=0.676$; $p<0.001$). Social problem-solving skills were weakly and positively correlated with perceived maternal attitudes ($r=0.119$; $p=0.011$) and perceived paternal attitudes ($r=0.097$; $p=0.039$). No significant relationship was found between emotional intelligence and the other variables ($p>0.05$). The findings indicate that perceived parental attitudes are associated with social problem-solving skills, whereas no significant relationship was found between emotional intelligence and the other variables.

Keywords: Emotional intelligence; parental attitude; social problem-solving; nursing; midwifery

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Attitudes of Nurses Towards Complementary and Alternative Medicine Use and Predictive Factors: Descriptive and Cross-Sectional Study

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Esengül KAŞIKÇI TÜRKER²

Abstract

The available literature consistently highlights that the use of complementary and alternative medicine (CAM) is more prevalent among nurses than in the general population. This trend has significant implications for the integration of CAM into routine clinical practice.

This study evaluated the nurses' attitudes of nurses towards complementary and alternative medicine (CAM) use and predictive factors.

It was conducted in a descriptive, cross-sectional type. The study sample consisted of 438 nurses, and it was conducted between November 2021 and August 2023. A nurses' information form and Turkish version of The Holistic Complementary and Alternative Medicine Questionnaire were used for data collection.

In this study, nurses used CAM methods were, vitamin supplementation, prayer, the use of bee and bee products, and herbal-based nutrition, and nurses have a positive attitude towards CAM. Participants' status of believing that CAM methods are placebo, believing that the complications of CAM methods are higher compared to modern medicine, believing that the preferred CAM methods are effective, the clinical unit in which they work, use of CAM methods such as prayer, music therapy, cupping, plant-based nutrition, and bee and bee products were identified as factors associated with nurses' attitudes toward CAM.

This study showed that nurses have a positive attitude towards CAM. The fact that nurses use CAM methods for themselves and believe in their usefulness will influence holistic nursing care in the clinic.

Keywords: Nurses, complementary and alternative medicine, attitudes

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4thInternational Congress of Multidisciplinary Medical and Health Sciences Studies

The Relationship Between Parents' E-Health Literacy and Antibiotic Use Behaviors

Esra Nur KOCAASLAN MUTLU¹

Abstract

This study aimed to determine the relationship between e-health literacy and antibiotic use behaviors among parents with children aged 6–12 years.

This descriptive and cross-sectional correlational study was conducted at the Pediatric Outpatient Clinic and Pediatric Diseases Service of a university hospital. A total of 460 parents were included using a non-probability consecutive sampling method. Data were collected using the Child and Family Information Form, the e-Health Literacy Scale, and the Mothers' and Fathers' Antibiotic Attitudes (ABANA) Scale. Data were analyzed using descriptive statistics, independent samples t-test, one-way ANOVA, Pearson correlation analysis, and simple linear regression analysis.

Of the participants, 67% were female, and the majority were aged 30–39 years. The mean e-Health Literacy Scale score was 27.64 ± 5.12 , and the mean total ABANA score was 112.38 ± 18.45 . Comparisons according to parental age groups showed that both e-health literacy and ABANA total and subscale scores significantly increased with age ($p < 0.001$). Parents aged 40 years and older had the highest scores across all scales. Parents who did not reuse leftover antibiotics and those who completed prescribed antibiotic courses had significantly higher scores on both scales ($p < 0.001$). A significant positive correlation was found between e-health literacy and ABANA total and subscale scores ($p < 0.01$). Regression analysis showed that e-health literacy significantly predicted the ABANA total score ($F = 29.36$, $p < 0.001$), explaining 17% of the variance ($R^2 = 0.17$).

Higher e-health literacy among parents was associated with better knowledge, attitudes, and behaviors regarding antibiotic use. These findings indicate that e-health literacy is an important determinant of the rational use of antibiotics in children. Accordingly, educational and intervention programs aimed at improving digital health literacy among parents may be effective in combating antibiotic resistance.

Keywords: antibiotic use, antimicrobial resistance, child health, e-health literacy, parents.

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The Potential Role of Zeolite in Wound Healing: A Current Literature Review

Handan AKTAŞ¹

Abstract

Wound healing is a complex biological process involving the phases of inflammation, proliferation, and remodeling. Chronic wounds, infection development, and delayed tissue regeneration continue to be significant health problems today. In recent years, biomaterial-based approaches have attracted attention in wound care, and zeolites are considered among potential therapeutic agents due to their physicochemical properties. The aim of this review is to evaluate the effects of zeolite on wound healing in light of current literature.

Zeolite is a natural mineral structure composed of silicon, aluminum, sodium, and magnesium derivatives. Due to its high surface area, ion exchange capacity, absorption properties, and biocompatibility, it may contribute to the regulation of the wound microenvironment. Studies in the literature report that zeolite-containing wound dressings exhibit hemostatic effects, support exudate control, and provide antimicrobial activity. In particular, silver-doped zeolites have been reported to reduce bacterial colonization and decrease the risk of infection.

Experimental studies indicate that zeolite applications may positively affect fibroblast proliferation, collagen synthesis, and angiogenesis. Additionally, findings from diabetic wound models suggest that zeolites may accelerate the epithelialization process. The ease of storage and application, low cost, and lack of significant side effects provide important advantages for clinical use. However, data regarding standard dosage, application methods, and long-term safety remain limited.

In conclusion, zeolites are promising biomaterials in wound healing due to their hemostatic, antimicrobial, and regenerative properties. Nevertheless, large-scale controlled clinical studies are needed to clarify their clinical effectiveness.

Keywords: Zeolite, wound healing, hemostasis, antimicrobial effect, chronic wound.

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Sleep Quality in Adolescents and Affecting Factors

Duygu KEMER¹

Abstract

Sleep is one of the fundamental determinants of children's mental, physical, and academic development. Studies have shown that sleep deprivation in adolescents increases daytime sleepiness, inattentiveness, and behavioral problems. This review was conducted to examine sleep quality and the factors affecting sleep among adolescents in light of findings reported in the literature. This study is a review article based on a literature review. The keywords "adolescent," "teenager," "sleep quality," and "sleep problems" were searched in both Turkish and English. Studies in the literature have shown that a considerable proportion of adolescents experience poor sleep quality. One study reported that 54.7% of adolescents had poor sleep quality, while 9% experienced excessive daytime sleepiness. Social and family-related problems, a history of sleep disorders, and appetite changes were identified as factors associated with reduced sleep quality. Similarly, another study found that 34.9% of adolescents had poor sleep quality. The literature further indicates that higher levels of digital game addiction are associated with poorer sleep quality among adolescents. Nutritional habits also play an important role in sleep patterns; excessive or heavy meals, as well as the consumption of chocolate, cola, tea, and coffee, and insufficient protein intake may negatively affect sleep. Several other factors influencing adolescent sleep quality have been identified in the literature, including internet addiction, digital game addiction, smartphone addiction, social media addiction, test anxiety, living in a fragmented family structure, bedroom sharing, and environmental conditions. Psychological symptoms such as anxiety, depression, hostility, somatization, and negative self-perception have also been reported to adversely affect sleep quality in adolescents. The literature demonstrates that sleep-related problems are highly prevalent among adolescents. In conclusion, adolescents' sleep quality should be assessed regularly, and family awareness should be improved.

Keywords: Adolescent, Teenager, Sleep problems, Sleep quality

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Evidence- Based Practices for Improving Comfort in Patients Undergoing Transfemoral Coronary Angiography

Elifnur KARAGÖZ YILDIZ¹

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Abstract

Transfemoral coronary angiography (CAG) is a commonly used invasive procedure in the diagnosis and treatment of cardiovascular diseases. Although this procedure provides significant diagnostic and therapeutic benefits for patients, it may also lead to various physical and psychological problems during and after the procedure. In particular, post-procedural pain, prolonged bed rest, restricted mobility, discomfort caused by pressure on the femoral region, and dependence in activities of daily living negatively affect patients' comfort levels. In addition, fear of complications and feelings of uncertainty may increase anxiety levels and reduce overall well-being.

In this context, it is of great importance for nurses to systematically assess the physical, psychological, and environmental factors affecting patients' comfort levels. Planning and implementing interventions aimed at enhancing comfort constitute one of the fundamental components of holistic nursing care. Evidence-based nursing practices encompass a wide range of interventions, including positioning, early mobilization, relaxation techniques, patient education, and complementary therapies. These practices have been reported to reduce physical symptoms while also supporting psychological relaxation.

The aim of this review is to examine current evidence-based nursing approaches aimed at improving comfort in patients undergoing transfemoral CAG and to provide recommendations that will guide healthcare professionals in integrating these practices into clinical care. In this regard, identifying effective interventions to enhance patient comfort and incorporating them into standard care processes may contribute to improving both the quality of care and patient satisfaction.

Keywords: Transfemoral coronary angiography, comfort, evidence-based practices, patient comfort, nursing interventions.

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The Nurse's Role in Artificial Intelligence-Assisted Patient Safety in the Operating Room

Nisagül SEVENCAN¹

Hatice ERDOĞAN²

Abstract

Operating rooms are high-risk environments where complex healthcare services are provided. Complications resulting from errors made by healthcare workers are a significant issue threatening patient safety. In recent years, with the integration of artificial intelligence (AI) technologies into the healthcare field, strategies for preventing errors in operating rooms have been reshaped. In this process, nurses have assumed a central role in the effective use of technology and ensuring patient safety. It has been observed that artificial intelligence systems reduce error rates through monitoring the surgical field, analyzing team movements, detecting sterility breaches, and utilizing critical alert mechanisms. However, nurses' effective use of these systems, ensuring accurate data entry, and integrating alerts into clinical decision-making processes are of critical importance for patient safety.

Operating room nurses directly impact patient safety by ensuring the proper use of AI-supported systems. AI-based systems are utilized particularly for patient identification, accurate marking of the surgical site, and the use of surgical checklists. Nurses prevent potential errors by evaluating data from these systems alongside their clinical knowledge and experience. Additionally, AI-supported technologies are utilized for monitoring devices used during the intraoperative period, tracking sterilization processes, and evaluating real-time patient data.

Furthermore, nurses are responsible for the ethical and safe use of AI systems. Protecting data privacy, correctly interpreting system outputs, and identifying technological errors are key areas requiring the nurse's attention. Furthermore, nurses ensure that AI outputs are correctly understood by the entire team by strengthening communication within the team.

In conclusion, the effective use of AI has become a powerful system that enhances patient safety in the operating room. The integration of technology with clinical knowledge and experience not only improves the quality of patient care but also makes a significant contribution to the development of safe surgical practices.

Keywords: Artificial intelligence, nurse, patient safety, surgical error, technology

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Evidence-Based Interventions Strengthening the Perception of Recovery in Individuals with Substance and Alcohol Use Disorders and the Role of Psychiatric Nurses

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Abstract

Substance and alcohol use disorders are chronic and recurrent mental health problems that develop through the interaction of biological, psychological, social, and environmental factors (Yıldırım et al., 2025; Baysan Arabacı et al., 2025). These disorders are not limited to substance or alcohol use behavior; they are also associated with multidimensional psychosocial problems, including depression, anxiety, low self-efficacy, social exclusion, stigma, family problems, and impaired functioning (Cüceler et al., 2022; Öztürk Emiral & Gökler, 2024; Çalışkan Ceylan, 2025). In addiction, recovery does not only refer to the cessation of substance or alcohol use; it also represents a dynamic process in which individuals regain control over their lives, develop hope, maintain social roles, and build a meaningful life (Çam & Yalçiner, 2018; Inanlou et al., 2020; U.S. Department of Health and Human Services, 2016). This literature review aims to examine evidence-based interventions that strengthen the perception of recovery in individuals with substance and alcohol use disorders and to discuss the role of mental health and psychiatric nurses in this process. The literature indicates that motivational interviewing, cognitive behavioral approaches, relapse prevention interventions, psychoeducation, and peer support programs may support motivation for change, treatment engagement, self-efficacy, coping skills, and relapse management (Bischof et al., 2021; Magill et al., 2023; Menon & Kandasamy, 2018; Sarkhel et al., 2020; Tracy & Wallace, 2016). Mental health and psychiatric nurses contribute to recovery by assessing psychosocial needs, establishing therapeutic communication, providing psychoeducation, strengthening motivation, identifying relapse risks, and involving family and social support systems in care (Yaman & Yılmaz, 2020; Soy & Zorlu, 2020; Sertgöz & Demir, 2022). In conclusion, integrating person-centered, holistic, and evidence-based nursing approaches into treatment and rehabilitation processes is important for strengthening the perception of recovery in addiction (Bag, 2020; Baysan Arabacı et al., 2025).

Keywords: Substance use disorder, alcohol use disorder, perception of recovery, evidence-based interventions, psychiatric nursing.

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Effects of Gestational Diabetes Mellitus on Maternal and Neonatal Outcomes

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Fatma YILDIRIM³

Abstract

Gestational diabetes mellitus (GDM) is a common metabolic disorder during pregnancy, characterized by glucose intolerance with onset or first recognition during gestation. It is associated with significant adverse maternal and neonatal outcomes, making early diagnosis and effective management essential. This study aims to evaluate the impact of GDM on maternal and neonatal health outcomes based on current literature.

Maternal complications related to GDM include an increased risk of preeclampsia, cesarean delivery, and the development of type 2 diabetes mellitus later in life. Poor glycemic control during pregnancy may also contribute to excessive gestational weight gain and hypertensive disorders. From a neonatal perspective, infants born to mothers with GDM are at higher risk for macrosomia, birth trauma, hypoglycemia, respiratory distress syndrome, and neonatal intensive care unit admission. Additionally, long-term risks such as obesity and glucose intolerance in childhood have been associated with intrauterine exposure to hyperglycemia.

Effective management strategies, including dietary regulation, physical activity, glucose monitoring, and insulin therapy when necessary, play a crucial role in reducing these adverse outcomes. Early screening and multidisciplinary care approaches are essential to improve both maternal and neonatal prognosis.

In conclusion, GDM significantly affects pregnancy outcomes, emphasizing the importance of early diagnosis, proper management, and postpartum follow-up. Increased awareness and evidence-based interventions can help minimize complications and improve overall maternal and neonatal health outcomes.

Keywords: Gestational diabetes mellitus, maternal outcomes, neonatal outcomes, pregnancy complications, macrosomia

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4thInternational Congress of Multidisciplinary Medical and Health Sciences Studies

Prevalence and Clinical Anatomy of the Sternal Foramen in Adults: A Systematic Review

Fatma MUTLU ÇAMLI¹

Abstract

To systematically analyze the prevalence of sternal foramina in adults; specifically, to assess the risks of iatrogenic complications that may arise during invasive procedures targeting the sternal region—such as bone marrow aspiration and acupuncture—from a clinical anatomy perspective.

A systematic review was conducted by reviewing relevant research articles. English-language articles in the PubMed database were searched using the keyword (“sternal foramen” OR “sternal foramina” OR “foramen sternale”). Studies published between 2016 and 2026 were included in the review. Abstracts, letters to the editor, reviews, systematic reviews, thesis studies, textbooks, and conference proceedings were excluded.

A systematic literature search conducted in the PubMed database identified a total of 29 scientific publications related to the topic. Following an evaluation based on the established inclusion and exclusion criteria, 8 original research articles were included in the systematic review. Upon examination of the studies included in the systematic review, it was observed that the data were based on morphological examinations of dry bones and retrospective analyses of thoracic computed tomography images. The prevalence of the sternal foramen was found to range between 2.8% and 19.1%. It was determined that this variation was most frequently observed in the corpus sterni region and in males.

This systematic review presents the prevalence and morphological characteristics of the sternal foramen in the literature using current data. The sternal foramen holds high clinical significance due to the risk of causing fatal cardiac complications, particularly during sternal puncture, acupuncture procedures, and surgical interventions in the chest. Accurate identification of this variation through modern imaging methods such as multidetector computed tomography and examination of dry bones is a critical requirement for preventing misdiagnosis and complications in forensic medicine, radiology, and invasive chest procedures.

Keywords: Sternal foramen, systematic review, prevalence, chest, multidetector computed tomography

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MRI-Based Evaluation of ICV-Normalized Cerebrum and Insular Volumes in Patients with Schizophrenia

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Hilal IRMAK SAPMAZ²

Birsen SAĞIROĞLU ÖZYURT³

Filiz ÖZSOY⁴

Fatma KÖKCÜ⁵

Abstract

This study aimed to evaluate whether patients with schizophrenia show alterations in intracranial volume-normalized relative volumes of the cerebrum and insula using magnetic resonance imaging data. In this retrospective study, brain MRI scans of 39 patients with schizophrenia 16 females, 23 males and 41 healthy controls 17 females, 24 males were analyzed. All images were obtained from the Department of Radiology, Tokat Gaziosmanpaşa University Health Practice and Research Hospital. MRI data were processed using the Vol2Brain software. Intracranial volume and ICV-normalized relative volume values of the cerebrum, insula, anterior insula, and posterior insula were evaluated. Between-group comparisons were performed between patients with schizophrenia and healthy controls. Additional subgroup analyses were conducted according to sex. The schizophrenia group had significantly lower total, right, and left cerebrum relative volumes compared with the healthy control group. Among insular parameters, right insular volume and left anterior insular volume were significantly lower in the schizophrenia group than in healthy controls. Sex-based subgroup analyses showed that total, right, and left cerebrum relative volumes were significantly lower in both female and male patients compared with their corresponding healthy control groups. In the schizophrenia group, intracranial volume was significantly higher in males than in females. Similarly, in the healthy control group, males had significantly higher intracranial volume than females. In addition, left cerebrum and total posterior insula relative volumes were significantly lower in healthy males than in healthy females. This study demonstrated reduced ICV-normalized relative cerebrum volumes in patients with schizophrenia. More limited regional differences were also observed in right insular and left anterior insular relative volumes. These findings suggest that MRI-based relative volume parameters of the cerebrum and insula may be useful morphometric variables for evaluating structural brain alterations in schizophrenia.

Keywords: Schizophrenia, Magnetic Resonance Imaging, Vol2Brain, Insula, Cerebrum, Relative Volume.

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Morphometric Analysis of the External Acoustic Meatus and Temporomandibular Joint Proximity

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Mansurcan ÖDER²

Elif KAYA ÇELİK³

Erkan GÖKÇE⁴

Abstract

Knowledge of the anatomical relationship between the external acoustic meatus (EAM) and the temporomandibular joint (TMJ) is important for surgical procedures involving the temporal region. Morphometric evaluation of this region is necessary for preserving safe surgical margins during interventions involving the EAM and TMJ. This study aimed to evaluate the distance between the anterior wall of the EAM (AWEAM) and the caput mandibulae based on age and sex, and to provide morphometric data.

Temporal computed tomography images of 160 adult individuals with preserved temporal bone integrity were retrospectively evaluated. Subjects were divided into four age groups: 18–30, 31–45, 46–60, and 61–85 years. The thickness of the AWEAM was measured at its widest and narrowest regions. In addition, the joint distance between the caput mandibulae and the AWEAM was evaluated at the same levels. Measurements were compared according to age, sex, and side. Statistical analyses were performed using SPSS 26 software, and $p < 0.05$ was considered statistically significant.

Measurement values were generally lower in female subjects than in males in all age groups. In both sexes, several parameters reached their highest values in the 31–45 age group. A gradual decrease in measurements was observed in older age groups. No significant difference was detected between right and left side measurements.

The morphometric relationship between the EAM and TMJ showed variations according to age and sex. Lower values in older groups were associated with age-related bone loss. The data obtained in this study may contribute to preserving anatomical relationships and determining safe surgical margins during temporal region surgeries.

Keywords: External acoustic meatus, Temporomandibular joint, Morphometry, Measurement, Temporal computed tomography

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4th International Congress of Multidisciplinary Medical and Health Sciences Studies

Embalming and Preservation Methods for Anatomical Cadavers: A Systematic Review

Büşra YEŞİL ¹
Güneş BOLATLI ²

Abstract

The cadaver, regarded as a primary material in anatomy education, has an indisputable importance in the learning process. Therefore, the preservation and proper maintenance of cadavers without decomposition constitute a critical requirement.

The primary aim of this systematic review was to evaluate studies investigating techniques used for the preservation and maintenance of cadavers, particularly those utilized in anatomy education. Electronic databases including [Google Scholar](#), [PubMed](#), and [Web of Science](#) were searched. Studies published between 2016 and 2026 concerning cadaver preservation and maintenance methods were reviewed. Research articles containing information on cadaver preservation and embalming techniques were analyzed using the keywords “cadaver preservation” and “cadaver embalming.” Data from studies conducted within the last ten years were collected and included in the review.

As a result of the electronic searches, 35,300 articles were identified. Among these, 1,512 scientific publications were assessed for eligibility, and 29 articles found to be directly relevant to the subject of the study were included in the review. The reviewed studies demonstrated that cadavers play an indispensable role in anatomy education. Accordingly, proper embalming and preservation of cadavers are of great importance, and it has been understood that various preservation and maintenance methods have been developed throughout history to achieve this purpose. In particular, the studies emphasized the necessity of transitioning from traditional methods to modern techniques such as Thiel, MSSS, and NVP, which prioritize tissue flexibility, while also considering cost-effectiveness and efficiency.

Keywords: Cadaver preservation, Embalming techniques, Systematic review.

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Development of Doxycycline-Loaded Three-Dimensional *in Situ* Printable Hydrogels for Periodontitis Treatment

Ayşe ÇİNKAY¹
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Abstract

Periodontitis is a chronic inflammatory disease characterized by progressive destruction of periodontal tissues and may lead to tooth loss if untreated. In this study, doxycycline-loaded three-dimensional *in situ* printable hydrogel scaffolds were developed for localized periodontal therapy using a handheld extrusion-based bioprinting approach. Hydrogel formulations composed of gelatin methacryloyl (GelMA), κ -carrageenan, and chitosan were prepared using potassium chloride (KCl) and lithium phenyl-2,4,6-trimethylbenzoyl phosphinate (LAP) as ionic and photo-crosslinking agents. The hydrogels were fabricated via dual crosslinking combining visible-light photopolymerization and ionic gelation. The formulations were characterized regarding printability, mechanical properties, swelling, porosity, mucoadhesion, *in vitro* drug release, and physicochemical properties using SEM, FTIR, and UV–Vis analyses.

All formulations exhibited suitable extrusion behavior, continuous filament formation, and structural integrity during *in situ* bioprinting. Printability analyses demonstrated Pr values of 0.993, 1.002, and 0.995 for KCL/KRG₁-KTJ₁₅₀, KCL/KRG₂-KTJ₁₅₀, and KCL/KRG₃-KTJ₁₅₀, respectively, while KCL/KRG₂-KTJ₁₅₀ showed the most optimal printability. SEM analysis confirmed porous scaffold morphology, and FTIR findings indicated compatible interactions among hydrogel components. The highest compressive modulus was obtained for KCL/KRG₃-KTJ₁₅₀ photocrosslinked for 150 s (18.38 ± 2.54 kPa), whereas the highest compressive stress at break was observed for KCL/KRG₂-KTJ₁₂₀ (98.42 ± 9.95 kPa). Mucoadhesive force values were 0.4128 ± 0.0273 N, 0.6963 ± 0.1812 N, and 0.6600 ± 0.1985 N, respectively, while the highest work of mucoadhesion was recorded for KCL/KRG₃-KTJ₁₅₀ (0.5058 ± 0.1995 N·mm). Swelling ratios were $452.5 \pm 152.5\%$, $471.2 \pm 159.4\%$, and $489.0 \pm 167.2\%$, respectively, and the highest porosity was observed for KCL/KRG₃-KTJ₁₅₀ ($76.09 \pm 4.33\%$). Cumulative doxycycline release values at day 14 were $31.35 \pm 12.40\%$, $29.55 \pm 11.61\%$, and $29.06 \pm 11.69\%$, respectively. Drug release kinetics showed the highest correlation with the Higuchi model, while Korsmeyer–Peppas n values below 0.5 indicated Fickian diffusion-controlled release behavior.

Keywords: Periodontitis, Doxycycline, Hydrogel, *In situ* bioprinting, Drug delivery system

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4th International Congress of Multidisciplinary Medical and Health Sciences Studies

Endocrine Disruptors, Oxidative Stress, and Reproductive Toxicity: A One Health Approach

Mehmet Akif KILINÇ¹

Abstract

Endocrine-disrupting chemicals (EDCs) are widespread environmental contaminants capable of interfering with hormonal homeostasis and adversely affecting both human and animal health. In recent years, increasing evidence has demonstrated that compounds such as glyphosate, bisphenol A (BPA), phthalates, and various pesticides may induce significant toxic effects on the female reproductive system. These agents have been associated with ovarian dysfunction, follicular depletion, hormonal imbalance, implantation failure, infertility, pregnancy complications, and embryonic developmental abnormalities. Oxidative stress is considered one of the major mechanisms underlying reproductive toxicity, as excessive production of reactive oxygen species may result in cellular damage, granulosa cell dysfunction, mitochondrial impairment, apoptosis, and DNA damage within reproductive tissues. This review evaluates the reproductive effects of environmental endocrine disruptors within the framework of the One Health approach, emphasizing the biological interconnection between human, animal, and environmental health. Current experimental and clinical studies focusing on glyphosate and BPA exposure were critically examined, particularly regarding ovarian toxicity, uterine degeneration, and fertility impairment. Additionally, the potential protective effects of antioxidant agents, especially melatonin, against oxidative stress-mediated reproductive damage were highlighted. In conclusion, endocrine disruptors represent not only a toxicological concern but also an important public health and environmental sustainability issue. Multidisciplinary investigations integrating toxicology, reproductive biology, environmental sciences, and veterinary medicine are essential for understanding the long-term reproductive consequences of EDC exposure and for developing effective preventive strategies.

Keywords: Endocrine disruptors, oxidative stress, reproductive toxicity, glyphosate, One Health.

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Analysis of Artificial Intelligence, Informatics, and Technology-Related Courses in HEPDAK-Accredited Undergraduate Nursing Programs

Zuhal CANDAN YAMAK¹

Neslihan ILKAZ²

Abstract:

This study aims to examine the course content and the structural characteristics of curriculum for artificial intelligence, informatics, and technology related course in undergraduate nursing programs accredited by the Nursing Education Programs Evaluation and Accreditation Association (HEPDAK) in Türkiye.

This study was designed as a qualitative study based on document analysis. Within this scope, as of April 22, 2025, a total of 26 undergraduate nursing programs accredited by Nursing Education Programs Evaluation and Accreditation Association were identified. Among these, 21 courses from 17 universities that met the inclusion criteria and were accessible were analyzed. The data were obtained from Bologna information packages, thematic analysis was conducted using MAXQDA 2024 software, and the findings were evaluated within the framework of a SWOT analysis.

It was found that learning outcomes were found most frequently concentrated in the themes of digital health and data management (37.2%), education and skill development (22.1%), and technology use and integration (20.4%). In contrast, artificial intelligence applications (8.0%), ethics and data security (9.7%), and clinical decision support systems (2.7%) were less frequently represented. It was also determined that the majority of the courses were elective and entirely theoretical. Additionally, the credit and ECTS values of the courses were within a narrow and similar range, and that their contribution to the overall workload of the nursing curriculum was limited.

The findings indicate that although the digital transformation process in nursing education has begun; it has not yet been sufficiently reflected in practice-oriented components and advanced artificial intelligence content. It is recommended that artificial intelligence, informatics, and digital health content be given a broader place in the curriculum, be structured in an application-based manner and be integrated with other courses and clinical practice.

Keywords: Digital health, document analysis, nursing education, artificial intelligence

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Effectiveness and Feasibility of Telepractice in the Management of Voice Disorders

Rabia AYGÜN¹

Abstract

Voice disorders are prevalent across diverse populations, particularly among professional voice users, and behavioral voice therapy remains the primary treatment. However, traditional face-to-face therapy is often hindered by travel distance, time constraints, and limited access to specialized speech-language pathologists. The COVID-19 pandemic further accelerated the adoption of telepractice as an alternative service-delivery model. This review aims to synthesize current evidence on the effectiveness and feasibility of telepractice in the management of voice disorders through a narrative review of recent literature examining studies across different populations, voice pathologies, and intervention protocols. The reviewed literature consistently demonstrates that telepractice voice therapy yields outcomes comparable to face-to-face therapy in acoustic, aerodynamic, auditory-perceptual, and patient-reported measures. Positive outcomes span varied populations, including teachers with self-reported voice disorders, individuals with hyperfunctional voice disorders, pediatric vocal fold nodules, and neurological conditions. Both clinicians and patients reported high satisfaction due to improved accessibility, scheduling flexibility, and reduced travel burden. Nevertheless, challenges such as technical difficulties, connectivity issues, and limitations in delivering tactile-based techniques or collecting instrumental measures were noted. Notably, while most clinicians recommend telepractice, many favor a hybrid model combining initial in-person sessions with subsequent virtual therapy. Overall, telepractice is a feasible and effective alternative to conventional voice therapy, with the potential to expand access to care, though further large-scale, controlled studies are needed to establish standardized protocols.

Keywords: Dysphonia, Telerehabilitation, Telepractice, Voice disorders, Voice therapy

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4thInternational Congress of Multidisciplinary Medical and Health Sciences Studies

The Transformation of the Veterinary Health Sector in Turkey and the Fight Against Illegal Products: Regulatory Framework, Analytical Survey and the One Health Perspective

Onur DEMİR¹

Abstract

Following the European Union harmonization process, Türkiye has undergone a major transformation in veterinary medicinal product regulation over the last decade. The implementation of the Veterinary Services, Plant Health, Food and Feed Law No. 5996 and subsequent secondary legislation established a modern regulatory framework incorporating Good Manufacturing Practices, Good Distribution Practices, pharmacovigilance, electronic prescription systems, product traceability, and risk-based market surveillance. This study presents the evolution of Türkiye's veterinary medicinal product surveillance system and evaluates emerging challenges associated with illicit veterinary medicines from a One Health perspective. Official control data, post-marketing surveillance findings, pharmacovigilance investigations, and illicit product analyses conducted between 2016 and 2025 were evaluated. Particular attention was given to analytical and pharmacoepidemiological investigations involving products distributed outside the legal supply chain. Findings demonstrated that risk-based surveillance systems significantly improved the detection of pharmaceutical quality defects and enabled rapid recall of non-compliant products within the legal market. However, illicit products distributed through e-commerce platforms and social media emerged as a growing concern. Analyses revealed products containing undeclared active substances, absence of declared ingredients, overdosed formulations, and multidrug adulteration. Recent investigations involving unlicensed feline infectious peritonitis antivirals, including GS-441524 and molnupiravir-containing products, identified serious pharmaceutical quality deviations with potential implications for antiviral resistance, animal welfare, and public health. Classical pharmacopoeial methods were found insufficient for the rapidly evolving illicit market due to their product-specific limitations. Therefore, accelerated analytical simultaneous screening methods were developed to support rapid field-oriented surveillance. The findings highlight the necessity of integrating analytical sciences, pharmacovigilance, epidemiological intelligence, and regulatory enforcement into a unified One Health-oriented surveillance framework against illicit products.

Keywords: Illicit, One Health, Pharmacoepidemiology, Türkiye, Veterinary medicinal products.

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Investigation of the Effects of Plant-derived Exosome-like Nanovesicles on Endometriosis

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Semih GÜLER³

Mustafa ÖZTATLICI⁴

Abstract

Exosomes are nano-sized extracellular vesicles secreted by various organisms, including microorganisms, plants, and animals. Plant exosomes (plant-derived exosome-like nanovesicles) are naturally produced by plants and enclosed by a lipid membrane. Plant-derived exosome-like nanovesicles are non-immunogenic, non-toxic, have health-promoting effects, and serve as efficient nanocarriers for drug delivery.

The characteristic feature of endometriosis is the proliferation of endometrial-like tissue called lesions beyond the uterus. The majority of lesions are located in the pelvis and classified as peritoneal, ovarian, or deep based on their position. It is a multifaceted condition resulting from a mix of several genetic and environmental factors. Patients frequently experience chronic pelvic discomfort, exacerbated during menstruation, alongside exhaustion, gastrointestinal and urinary problems, and mood disorders that adversely affect quality of life. Reports indicate that it may impact around 200 million women and individuals assigned female at birth. This is likely an underestimate, as certain individuals may possess undiscovered lesions, and access to medical facilities and professionals capable of providing a definitive diagnosis may be restricted in some countries.

This study discusses the potential effects of plant-derived exosomes for endometriosis. In comparison to conventional cell therapy, plant-derived exosomes exhibit reduced immunogenicity, enhanced stability for storage and distribution, and diminished ethical controversy.

In our study, exosomes derived from Thyme (*Thymus vulgaris*) and Rosemary (*Salvia rosmarinus*) plants were isolated by ultracentrifugation. NTA and TEM analyses were performed to characterize and validate the obtained exosomes. The obtained exosomes were then used on the 12Z cell line, an immortalized human endometriosis epithelial cell model obtained from peritoneal endometriosis lesions, after 24 and 48 hours. The study included MTT and colony analyses, and it was observed that the exosomes of both plants caused an increase in the number of 12Z cell lines.

Keywords: Endometriosis, Exosomes, plant-derived exosome-like nanovesicles, fertility.

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TNF- α -Mediated Pyroptosis and Oxidative Stress Responses in Breast Cancer Cell Lines

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Selda ŞİMŞEK⁴

Abstract

The effects of inflammatory cytokines in the tumor microenvironment on cell death mechanisms are gaining increasing importance. TNF- α , classically associated with apoptosis and necrosis, can also trigger inflammasome activation and pyroptosis. In this study, the impact of TNF- α on inflammasome and pyroptotic responses was investigated in MCF-7 (Luminal A) and MDA-MB-231 (Triple-Negative) breast cancer cell lines.

Cells were stimulated with TNF- α (50 and 100 ng/ml) for 24, 48, and 72 hours. The expression of inflammasome/pyroptosis-related genes (IL1 β , GZMB, NLRP10, PYDC1, CASP-1, AIM2) was assessed by RT-qPCR. Supernatant levels of IL-4, IL-9, IL-11, IL-13, and TGF- β 1 were measured by ELISA. Additionally, TAS, TOS, and OSI values were determined to evaluate oxidative stress.

TNF- α treatment induced a time- and dose-dependent triphasic response in MCF-7 cells. In the early phase, significant upregulation of inflammasome/pyroptosis genes (IL1 β , GZMB, NLRP10, CASP-1, AIM2) and elevated IL-13 levels indicated inflammatory activation. In the mid-phase, the response was suppressed, with increased PYDC1 suggesting negative regulation of inflammasome activity. In the late phase, most inflammatory genes were downregulated, while PYDC1 expression remained elevated at high doses. Dose- and time-dependent increases in IL-11, decreased TAS, and elevated OSI further highlighted oxidative stress involvement. In contrast, MDA-MB-231 cells exhibited weaker and more limited late-phase responses, with no significant activation of pyroptosis-related genes.

The differential responses to TNF- α between breast cancer subtypes underscore the role of pyroptosis mechanisms in tumor biology. The pronounced early induction of pyroptosis-related genes in Luminal A cells suggests a higher sensitivity to inflammatory signaling. However, the rapid suppression in later phases indicates the engagement of regulatory mechanisms to limit inflammation. In contrast, the weaker and restricted inflammatory response in Triple-Negative cells supports their higher immune evasion capacity and more aggressive phenotype. These findings demonstrate that heterogeneity among breast cancer subtypes is reflected in their immune response and pyroptotic regulation.

Keywords: TNF- α , pyroptosis, inflammatory response, oxidative stress, breast cancer.

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Evaluation of the Relationship Between IL-17-Induced Pyroptosis-Related Genes and Cytokine Response in Breast Cancer Cell Lines

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Buket ER URGANCI³

Ibrahim AÇIKBAŞ⁴

Abstract

Interleukin-17 (IL-17) plays a critical role in regulating inflammatory responses within the tumor microenvironment. This study aimed to investigate the effects of IL-17 on inflammation, inflammasome activation, pyroptosis, and oxidative stress in two distinct breast cancer cell lines: MCF-7 (luminal A) and MDA-MB231 (triple-negative).

Cells were stimulated with IL-17 (10, 50, and 100 ng/ml) for 24, 48, and 72 hours. The expression of inflammasome/pyroptosis-related genes (IL1 β , GZMB, NLRP10, PYDC1, CASP-1, AIM2) was assessed by RT-qPCR. Levels of IL-4, IL-9, IL-11, IL-13, and TGF- β 1 were measured in cell supernatants via ELISA. Oxidative stress analysis was conducted by determining TAS (total antioxidant status), TOS (total oxidant status), and OSI (oxidative stress index) values.

In MCF-7 cells, the response to IL-17 was moderate and time-dependent. While slight increases were observed at 24 hours, pyroptosis genes (IL1B, CASP1, GZMB, AIM2, NLRP10, PYDC1) and pro-inflammatory cytokines (IL-4, IL-9, IL-13) reached peak levels at 48 hours. TOS and OSI levels increased while TAS decreased, indicating oxidative stress. Although CASP1 and PYDC1 were downregulated at 72 hours, persistently high levels of IL1B, GZMB, and AIM2 suggested a sustained pyroptotic response alongside inflammation.

In MDA-MB231 cells, the response to IL-17 appeared earlier, stronger, and more persistent. By 48 hours, inflammasome activation and pyroptosis became prominent, with CASP1 and GZMB remaining elevated through 48–72 hours. Significant increases were also observed in cytokines such as IL-1 β , IL-4, IL-9, IL-13, and TGF- β . The oxidative stress profile was more pronounced, with elevated TOS/OSI levels and decreased TAS.

The response to IL-17 differed between breast cancer subtypes: luminal cells exhibited a more regulated inflammatory response, while triple-negative cells showed robust activation of inflammatory, pyroptotic, and oxidative stress pathways. These findings suggest that IL-17 may contribute to tumor progression through inflammation and pyroptosis, particularly in triple-negative breast cancer.

Keywords: IL-17, inflammasome, pyroptosis, oxidative stress, breast cancer

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Effects of Novel Therapeutic Approaches on Behavioral Alterations in a Mouse Model of Autism

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Abstract

Autism spectrum disorder (ASD) is a neurodevelopmental disorder that involves problems with social communication and repetitive behaviors. Animal models provide a useful tool for studying behavioral alterations associated with autism and testing potential therapeutic approaches. The Cc2d1a gene was related to cognitive dysfunction and behavioral abnormalities associated with ASD. This study aimed to compare the effects of IGF-1 and metformin treatment on repetitive-like behavior in Cc2d1a heterozygous mice using the marble burying test.

Methods: Cc2d1a heterozygous mice were divided into three groups: control, metformin (200 mg/kg/day, i.p.), and IGF-1 (1 mg/kg/day, i.p.). Treatments were administered from postnatal day 32 to day 62. The Marble Burying Test was performed after the treatment period to assess marble burying behavior as a measure of repetitive-like behavior. Data were analyzed using two-way ANOVA followed by Tukey's multiple comparisons test.

Results: Two-way ANOVA revealed a significant effect of treatment group on marble burying behavior ($F(2,36)=10.87$, $p=0.0002$), whereas no significant effects of sex or group $\times$ sex interaction were observed. The IGF-1 group exhibited considerably more marble-burying behavior than the control and metformin-treated groups in both sexes, according to a post hoc Tukey analysis.

Conclusion: In the Cc2d1a model, we observed a decrease in marble-burying behavior at baseline, and the increase in marble-burying behavior post-treatment may reflect partial recovery of behavioral activity. The present findings may contribute to the understanding of behavioral changes in the Cc2d1a autism model and provide insight into the behavioral effects of IGF-1 and metformin on ASD-related phenotypes.

Keywords: Autism spectrum disorders, Cc2d1a, Marble Burying Test, metformin, IGF-1

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Integrated Genomic and Clinicopathological Analysis of Somatic Variants in Lung Cancer by Next-Generation Sequencing

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Abstract

Lung cancer remains the leading cause of cancer-related mortality worldwide, and therapeutic responses are substantially influenced by histological subtype and molecular heterogeneity (Siegel et al., 2024). NGS-based studies from Turkey remain limited, and integrated clinicopathological analyses of histology-specific genomic profiles remain insufficient. This study aimed to characterize lung cancer patients whose somatic mutation profiles were determined by NGS in a single center within the context of a routine clinical practice cohort, and to investigate the clinicopathological determinants of clinically targetable molecular alterations.

A retrospective cohort of 250 consecutive NGS cases, 233 lung cancer patients were included after excluding 17 non-pulmonary primaries. Sequencing data were obtained using a panel covering 77 genes and 60 investigational biomarkers, with SNV, INDEL, CNV, and fusion detection performed per AMP/ASCO/CAP 2017 guidelines (Li et al., 2017). Histological classification was based on WHO 2021 criteria (WHO, 2021). Statistical analyses included chi-square/Fisher's exact tests, ANOVA, and binary logistic regression (IBM SPSS; $p < 0.05$).

Mean age of the cohort was 65.7 ± 9.1 years; 73.0% of patients were male. Predominant histological subtypes were adenocarcinoma, not otherwise specified (NOS) (48.9%), squamous cell carcinoma (SqCC) (21.5%), and NSCLC-NOS (21.0%). The most frequent mutations were *TP53* (58.4%), *KRAS* (20.6%), and *EGFR* (12.0%). *KRAS* mutations were exclusively observed in adenocarcinoma (30.7% vs 0.0%; $p < 0.001$, Cramér's $V = 0.343$), whereas *TP53* was significantly more frequent in SqCC (77.6% vs 49.1%; $p < 0.001$, $V = 0.264$). Clinically targetable molecular alterations were identified in 43.8% of patients, with significantly higher rates in adenocarcinoma ($p < 0.001$), female ($p = 0.012$), and never-smokers ($p = 0.007$).

NGS identified clinically targetable molecular alterations in nearly half of the cohort. Histology-specific mutation patterns and the higher frequency of clinically targetable alterations in patients with adenocarcinoma, female patients, and never-smokers, highlight the importance of comprehensive molecular profiling in routine clinical practice across clinically relevant lung cancer subtypes.

Keywords: lung cancer, next-generation sequencing, somatic mutation, targeted therapy, clinicopathological analysis

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Evaluation of Age-Related Changes in Seminal Plasma Oxidative Stress and Sertoli Cell Markers in Normozoospermic Men

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Seda KARABULUT²
Pelin MACİT³

Abstract

With the increasing age of the male reproductive population, the impact of age-related subclinical biochemical alterations on male fertility has gained growing attention, even in individuals with normal conventional semen parameters. This study aimed to evaluate the relationship between age-related changes in seminal plasma oxidative stress parameters and Sertoli cell function markers, namely inhibin B and anti-Müllerian hormone (AMH), in normozoospermic men. This study included 70 men classified as normozoospermic according to World Health Organization criteria. Participants were divided into two groups based on age: ≤ 35 years ($n=38$) and ≥ 40 years ($n=32$). Total antioxidant capacity (TAC), total oxidant capacity (TOC), and oxidative stress index (OSI) levels in seminal plasma were measured using colorimetric assays, whereas inhibin B and AMH levels were determined by ELISA. Intergroup comparisons and correlation analyses were performed. Seminal plasma TAC levels were significantly lower in the older age group, whereas TOC and OSI levels were significantly higher compared with the younger group ($p<0.05$). Sertoli cell function markers, inhibin B and AMH, were also significantly decreased in the ≥ 40 -year group ($p<0.05$). Correlation analyses demonstrated a negative association between age and TAC, and positive associations between age and TOC and OSI. In addition, age was negatively correlated with inhibin B and AMH levels. The findings demonstrate that aging is associated with increased oxidative stress and impaired Sertoli cell function even in normozoospermic men. These results highlight the importance of seminal plasma biomarkers as complementary tools in the evaluation of male fertility beyond conventional semen analysis.

Keywords: Aging, Male infertility, Oxidative stress, Seminal plasma, Sertoli cells

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Embryopathogenesis of Congenital Diaphragmatic Hernia: Prenatal Teratogen Exposure

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Abstract

Congenital diaphragmatic hernia (CDH) is a structural defect of the diaphragm that allows abdominal organs to enter the thoracic cavity during fetal development. This displacement restricts normal lung growth, resulting in pulmonary hypoplasia and persistent pulmonary hypertension. Although surgical techniques and neonatal care approaches such as extracorporeal membrane oxygenation (ECMO) and fetal endoscopic tracheal occlusion (FETO) have improved over the past decades, overall mortality and long-term morbidity remain significant clinical problems. Therefore, understanding the exact developmental stages and early biological errors leading to CDH is necessary for improving prenatal and postnatal management. This review summarizes the current understanding of CDH embryopathogenesis, with a focus on how early signaling pathways are disrupted by teratogenic factors. We detail the normal embryological sequence of diaphragm formation, primarily examining the development of the septum transversum, pleuroperitoneal folds, and muscular ingrowth. We then discuss experimental evidence showing that CDH is not simply a late mechanical failure of canal closure, but rather an early defect in mesenchymal cell migration and proliferation. The article specifically reviews the role of the retinoic acid (RA) signaling pathway, which is frequently altered in established rodent models such as the nitrofen model, and its direct connection to both diaphragmatic and pulmonary defects. Furthermore, the dual-hit hypothesis is discussed to explain how pulmonary hypoplasia occurs as a primary developmental defect independent of mechanical compression. Finally, the review covers the interplay between genetic predisposition and environmental factors, concluding with a brief perspective on how current prenatal diagnostic methods and emerging translational studies may influence future therapeutic interventions.

Keywords: Congenital diaphragmatic hernia, embryopathogenesis, prenatal teratogens, retinoic acid, dual-hit hypothesis, pulmonary hypoplasia

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Morphological Evidence of Telocytes in Postmenopausal Ovary

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Abstract

Menopause is clinically defined as the permanent cessation of menstruation following 12 consecutive months of amenorrhea, reflecting the loss of ovarian function and marking the end of a woman's reproductive life. Telocytes (TCs) are mesenchyme-derived stromal/interstitial cells that play important roles in intercellular signaling, maintenance of the local microenvironment, immune surveillance, and regulation of hormone-related processes. In our study, the presence and organization of TCs in postmenopausal ovary were investigated. Animals did not undergo any surgical or chemical treatment. Ovaries from adult female rats (8-10 months) and postmenopausal female rats (32-34 months) were immunolabeled with an anti-CD34 antibody and examined with transmission electron microscopy. CD34 positive TCs were located around blood vessels, the corpus luteum and follicles at different stages, as well as beneath the ovarian surface epithelium and were abundant in adult rats ovary, whereas in postmenopausal ovary they were located around blood vessels and corpus albicans. In addition, TCs were detected in both groups by electron microscopy. TCs showed a thin perinuclear cytoplasm in the cell body, a heterochromatic nucleus, and thin telopodes. In the adult group, they were observed near the theca layer of secondary follicles and in the ovarian stroma between follicles, whereas in the postmenopausal group a TC was observed in the stroma. This study is the first to describe TCs in postmenopausal ovaries. After menopause, TCs do not disappear but continue to exist in the ovarian stroma. TCs may be involved in post-menopausal stromal alterations. They may play an important role in the protection and maintenance of post-menopausal ovarian stroma. This is a morphological study; further studies are needed to investigate functional aspects.

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Keywords: telocyte, telopode, postmenopause, ovary, stroma

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Distribution of Cytokeratin 8 in Rat Liver

Bayram BAYRAM¹

Abstract

Cytokeratins (CK) are intermediate filament proteins that play a role in maintaining the structural integrity of epithelial cells. CK8 and CK18, known as the major keratin pair in simple epithelial cells, are widely found in parenchymal organs such as the liver. The aim of this study was to determine the distribution and localization of cytokeratin 8 in rat liver tissue using immunohistochemical methods.

A total of 35 adult female Sprague-Dawley rats weighing 220–250 grams were used in the study. Tissue samples were collected from the animals under Ketalar anesthesia. The obtained liver tissues were fixed in 10% neutral formalin, processed through routine histological procedures, and embedded in paraffin blocks. Sections 4–5 µm thick were cut from the paraffin blocks and stained using the avidin-biotin complex (ABC) immunohistochemical staining method. After staining, the preparations were examined and evaluated under a Nikon Eclipse 400 research microscope.

Immunohistochemical analyses revealed that CK8 expression exhibited varying intensities in hepatocytes and bile duct epithelial cells. While stronger immunoreactivity was observed in bile duct epithelial cells, moderate to diffuse cytoplasmic staining was noted in hepatocytes. It was concluded that CK8 positivity is associated with the structural organization of liver tissue.

In conclusion, it is believed that CK8 may play an important role in maintaining the integrity of epithelial cells, sustaining cellular organization, and ensuring the functional continuity of liver tissue in the rat liver. Furthermore, it was concluded that CK8 may be involved in regulating the division, proliferation, differentiation, and structural organization of hepatocytes and bile duct epithelial cells in rat liver tissue. The findings are expected to contribute to a better understanding of the distribution of cytokeratins in liver tissue.

Keywords: Rat, Liver, İmmunohistochemie, Cytokeratin 8

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Diagnostic performance of embedding and staining methods in the detection of *Helicobacter pylori*

Rasim HAMUTOĞLU¹
Serpil ÜNVER SARAYDIN²

Abstract

The aim of this study was to comparatively evaluate the visibility of unexpectedly detected *Helicobacter pylori* colonization on the rat esophageal epithelial surface under different embedding and staining techniques. Rather than performing a quantitative prevalence analysis, the study sought to demonstrate the impact of different histotechnical approaches on the morphological distinguishability of bacterial structures.

Esophageal tissue samples were prepared as JB4 resin-embedded semithin sections and routinely processed paraffin sections. JB4 sections were stained with acid fuchsin-toluidine blue, while paraffin sections were examined with H&E. Giemsa, silver impregnation, and PAS+Alcian Blue were also applied to both methods. Bacterial distribution, colony density, morphological preservation, and contour clarity were compared.

In semithin sections prepared with the JB4 resin embedding technique, prominent bacterial clusters were clearly observed along the esophageal epithelial surface, and in some areas, the cylindrical/rod-shaped morphology of individual bacterial structures could be discerned. In paraffin sections stained with H&E, similar superficial colonization areas were identified; however, the appearance was largely limited to dense surface aggregates, with restricted visualization of individual bacterial details. Giemsa staining predominantly highlighted dense colony areas in paraffin sections, whereas in JB4 sections it markedly enhanced bacterial visibility, achieving clarity comparable to routine JB4 staining. Silver impregnation and PAS+Alcian Blue staining provided limited additional value in both techniques and did not significantly improve bacterial detectability.

These findings indicate that the assessment of bacterial colonization on the esophageal surface is strongly dependent not only on stain selection but also on the embedding technique, section thickness, and preservation of surface architecture. In particular, JB4 resin embedding significantly improves the morphological resolution of superficial microbial structures, providing a clear advantage over routine paraffin histology. Therefore, JB4-based semithin sections may be considered a valuable complementary histotechnical approach in the evaluation of superficial and diagnostically ambiguous microbial colonization.

Keywords: *Helicobacter pylori*; Esophagus; JB4; Resin embedding; Giemsa; Semithin section; Histotechnique

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Investigation of the Relationships Between Cognitive Functions, Physical Activity Level, Pain Perception, Pain Severity, and Coping Strategies in Individuals with Chronic Non-Specific Low Back Pain

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Mert DOĞAN²

Abstract

This study aimed to investigate the relationships between cognitive functions, physical activity level, pain perception, and pain coping strategies in individuals with chronic non-specific low back pain (CNSLBP).

Eighty-five individuals diagnosed with CNSLBP were included in this cross-sectional observational study. Cognitive functions were evaluated using the Wisconsin Card Sorting Test (WCST), Stroop Test, Symbol Digit Modalities Test (SDMT), and Mini-Mental State Examination (MMSE). Physical activity levels were assessed with the International Physical Activity Questionnaire-Short Form (IPAQ-SF). Pain severity, pain catastrophizing, pain self-efficacy, depression, sleep quality, and coping strategies were evaluated using validated outcome measures.

A significant positive correlation was found between total IPAQ MET scores and WCST correct responses ($r_s=0.225$, $p=0.039$), indicating that higher physical activity levels were associated with better executive functioning. Beck Depression Inventory scores demonstrated a strong positive correlation with WCST perseverative errors ($r_s=0.445$, $p<0.001$). Similarly, Pittsburgh Sleep Quality Index scores were significantly associated with perseverative error rates ($r_s=0.400$, $p<0.001$). No significant relationships were identified between pain catastrophizing, pain self-efficacy, and cognitive performance measures ($p>0.05$).

Executive functions and information processing speed in individuals with CNSLBP appear to be associated with physical activity level, depressive symptoms, and sleep quality. These findings emphasize that chronic low back pain should be evaluated not only from a physical perspective but also within a cognitive and psychosocial framework. Integrating neuropsychological assessment into multidisciplinary rehabilitation programs may contribute to more individualized and effective treatment approaches.

Keywords: chronic non-specific low back pain, cognitive functions, physical activity, executive functions, neuropsychological assessment.

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The Effect of Postural Control and Balance on Emotional Regulation in Primary School Children

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Onur TURAN³

Gamze DEMİRCİOĞLU⁴

Abstract

The relationship between postural control and balance and emotion regulation has been examined in a limited number of studies in typically developing children. This study investigates the relationship between these variables in elementary school children.

The purpose of this study is to examine the relationship between postural control and balance skills and emotion regulation in typically developing elementary school children.

Seventeen typically developing children aged 6–12 years were included in the study. The children's postural control and balance skills were assessed using the EASI Postural Control and Balance subtests, while their emotional regulation skills were assessed using the Emotion Regulation Scale (ERS).

Spearman correlation analysis revealed no significant relationship between postural control and balance and emotion regulation ($p > 0.05$). However, a moderate correlation ($r = 0.620$, $p = 0.008$) was found between the EAS total score and the emotion regulation subscale, and a very strong correlation ($r = 0.927$, $p < 0.001$) was found between the EAS total score and the variability/negativity subscale.

This study found no statistically significant relationship between postural control and balance and emotion regulation in typically developing elementary school children. The findings suggest that the relationship between motor and emotional regulation processes in non-clinical populations may be weaker or more complex.

Keywords: Postural Control, Emotional Regulation, Child

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4thInternational Congress of Multidisciplinary Medical and Health Sciences Studies

From Undergraduate Education to Clinical Practice: Evaluation of Artificial Intelligence Awareness Among Physical Therapists

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Abstract

Artificial intelligence (AI) technologies are driving a rapid transformation in healthcare and rehabilitation. AI literacy, attitudes, and anxiety levels play a critical role in how healthcare professionals and future physical therapists adapt to these advancements. This study aims to investigate the general attitudes and AI anxiety levels among physical therapy students and practicing clinicians, and to evaluate their relationships with demographic characteristics and frequency of AI usage.

This correlational study included 125 participants (physical therapy students and graduate physical therapists) who fully completed the online survey. Data were collected via a Personal Information Form, the General Attitudes Towards Artificial Intelligence Scale, and the Artificial Intelligence Anxiety Scale (AIAS). Independent Samples t-test and One-Way ANOVA were utilized for statistical analysis. ChatGPT (n=78) and Gemini (n=34) were identified as the most frequently used AI tools. The frequency of AI usage had a highly significant impact on AI learning anxiety (p=0.001), job replacement anxiety (p=0.048), and general positive attitudes (p=0.000). Participants who utilized AI "Every Day" exhibited the lowest levels of learning and job replacement anxiety, alongside the highest positive attitudes. Regarding gender, females demonstrated significantly higher anxiety in the AI configuration subscale compared to males (p=0.029). Furthermore, job replacement anxiety was significantly higher in participants aged 38 and older compared to those aged 23–27 (p=0.039).

Our findings demonstrate that integrating AI technologies into daily clinical/academic practice is the most definitive factor in mitigating technology-related anxieties and fostering positive attitudes in the physical therapy field. To ensure a successful technological transition, future educational frameworks and professional rehabilitation curricula should address configuration anxieties among female peers and job replacement fears among senior therapists by integrating structured AI literacy modules.

Keywords: Artificial Intelligence Anxiety, Attitude, Physical Therapy, Rehabilitation, Technology Literacy.

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Investigation of the Acute Effects of Active and Passive Break Applications on Joint Range of Motion, Neck Functionality, Pain, and Fatigue Levels in Office Workers

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Gözde BAŞBUĞ²

Abstract

Prolonged desk work and static posture cause cumulative mechanical loading on the neck-shoulder girdle, leading to pain, movement restriction, and fatigue. This study aimed to compare the acute effects of physiotherapy-based active and passive break protocols integrated into work hours on cervical range of motion (ROM), neck functionality, pain severity, and fatigue levels in office workers.

In this randomized controlled and prospective study, 42 volunteers working at desks for at least 5 hours a day were enrolled; the analysis was completed with 40 participants (Active Break n=20, Passive Break n=20) due to attrition. The active break group received a structured 5-minute intervention every hour during work hours for 5 consecutive working days, consisting of neck and shoulder stretching/mobilization exercises supervised by a physiotherapist. The passive break group was given unrestricted rest for the same duration and frequency without exercises. Assessments were performed at baseline and post-intervention using a universal goniometer (Neck/Shoulder ROM), Neck Disability Index (NDI), Visual Analog Scale (VAS), Nordic Musculoskeletal Questionnaire (NMQ), and Checklist Individual Strength (CIS-T). Statistical analyses were conducted using Wilcoxon and Mann-Whitney U tests via SPSS 29.0.

Baseline demographic and clinical data were homogeneous between groups ($p < 0.05$). After the 5-day intervention, the active break group showed statistically significant improvements in all cervical and shoulder ROM directions, neck functionality (NDI), pain (VAS), and fatigue (CIS-T total and all subscales) levels compared to baseline (intra-group $p < 0.05$). In contrast, no significant changes were observed in ROM, NDI, and VAS parameters in the passive break group ($p > 0.05$), except for limited improvements in total fatigue and motivation subscales ($p < 0.05$). Inter-group comparisons revealed that the active break group demonstrated statistically superior outcomes in improving all ROM directions, pain (VAS), neck functionality (NDI), subjective fatigue, and concentration (CIS-T subscales) compared to the passive break group ($p < 0.05$). According to NMQ, complaints of back pain were completely eliminated in the active break group post-intervention ($p < 0.05$).

Short-term, structured active break exercises integrated into the workday were found to be an effective and reliable preventive physiotherapy strategy for protecting musculoskeletal health, increasing range of motion, and alleviating pain and fatigue symptoms in office workers in the acute period compared to traditional passive rest.

Keywords: Active break, Passive break, Office workers, Range of motion, Musculoskeletal pain.

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Effects of Diaphragmatic Breathing Exercises on Core Stabilization Performance, Peak Expiratory Flow and Chest Expansion in Women Practicing Equipment-Based Pilates

Nava MOKHTARI¹

Gözde BAŞBUĞ²

Abstract

Pilates exercises are widely used to improve core stabilization, postural control, flexibility and breathing coordination. Diaphragmatic breathing may positively affect core stabilization and respiratory functions through diaphragm activation and intra-abdominal pressure mechanisms. This study aimed to investigate the effects of diaphragmatic breathing exercises on core stabilization performance, peak expiratory flow (PEF), and chest expansion in women practicing equipment-based Pilates.

A total of 44 healthy women aged 20–50 years who regularly practiced equipment-based Pilates were included in this randomized controlled trial. Participants were allocated into a control group (n=22) and a diaphragmatic breathing group (n=22). Both groups participated in an 8-week Pilates program twice weekly, while the intervention group additionally performed diaphragmatic breathing exercises. Core stabilization performance was assessed using a Pressure Biofeedback Unit (PBU), PEF using a peak flow meter, and chest expansion using a tape measure.

Significant improvements were observed in all outcome measures within both groups ($p<0.05$). Between-group comparisons demonstrated that the increase in PEF was significantly greater in the diaphragmatic breathing group compared with the control group ($p=0.013$). A significant advantage was also observed in favor of the diaphragmatic breathing group for the 4th intercostal chest expansion measurement ($p=0.025$).

Adding diaphragmatic breathing exercises to equipment-based Pilates may provide additional benefits, particularly for pulmonary function and chest expansion. These findings support the integration of breathing-focused approaches into Pilates-based exercise programs.

Keywords: Diaphragmatic breathing, reformer Pilates, core stabilization, peak expiratory flow, chest expansion

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A Rare Cause of Acute Abdomen: Sigmoid Mesocolon-Associated Internal Hernia

Mustafa AYAN¹

Abstract

Internal hernias related to the sigmoid mesocolon constitute a small proportion of all hernia cases but represent rare surgical emergencies with high mortality due to rapid clinical progression and diagnostic difficulty. Passage of bowel loops through narrow mesocolic defects may lead to strangulation and ischaemia; delayed diagnosis can result in necrosis, perforation and sepsis. This report aims to highlight these diagnostic challenges by presenting a case in a patient with no history of abdominal surgery.

A 61-year-old female presented to the emergency department with continuous periumbilical abdominal pain that had started three to four hours earlier. She reported ongoing gas and stool output and had no history of abdominal surgery. Physical examination revealed periumbilical tenderness, and laboratory tests were normal. A non-contrast abdominal CT scan demonstrated ileus due to an internal hernia associated with the sigmoid mesocolon. The patient underwent surgery, during which a likely congenital mesocolic defect medial to the sigmoid colon was identified and primarily closed. She was discharged without complications.

In sigmoid mesocolon-related internal hernias, sudden-onset abdominal pain, distension, nausea, vomiting and signs of obstruction may be observed, and the risk of strangulation and ischaemia is high because of the narrow mesocolic defect. Computed tomography is the most sensitive imaging method, showing dilated small bowel loops passing through a narrow defect and an abnormal relationship with the sigmoid colon. Internal hernias should be considered in the differential diagnosis of acute abdomen, particularly in patients without prior surgery. Early CT in suspected cases may reduce mortality by expediting diagnosis and surgical decision-making, and diagnostic laparoscopy is an important option when the diagnosis remains unclear.

Keywords: Internal hernia, Sigmoid mesocolon, Small bowel obstruction, Acute abdomen, Diagnostic imaging

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Evaluation of the Effectiveness of the Simulation Method Used in Basic Life Support Training: A Randomized Controlled Study

Tuğba GÜLTEKİN¹

Bennur KOCA²

Sedat YANTURALI³

Abstract

This randomized controlled study aimed to evaluate the effectiveness of Q CPR simulation-based training compared to conventional training on theoretical knowledge and cardiopulmonary resuscitation (CPR) performance among paramedic students, and to assess the retention of acquired skills over time. The study was conducted during the 2025–2026 academic year with 41 volunteer paramedic students (participation rate: 87.2%) enrolled in a resuscitation course. Participants were randomly assigned to a simulation group (n=20) or a classical education group (n=21). Both groups received 12 hours of basic life support (BLS) training based on the AHA 2020 guidelines; the simulation group trained with Q CPR manikins and tablet-based feedback systems, while the control group used standard manikins. Data were collected at three time points: pre-test (September 2025), post-test (December 2025), and follow-up re-test (March 2026). Theoretical BLS knowledge scores and CPR performance parameters were compared using the Friedman test, Cochran Q test, Mann–Whitney U test, and Bonferroni–Dunn post-hoc comparisons. The mean age of participants was 19.12 (SD±1.07); 65% were female. Groups were homogeneous in demographic characteristics ($p>0.05$). While theoretical BLS scores were similar between groups at pre-test ($p>0.05$), the simulation group scored significantly higher at post-test and re-test ($p<0.001$), with large effect sizes ($d=1.457$ and $d=1.378$, respectively). Regarding CPR performance, the simulation group demonstrated statistically significant superiority in correct hand position rate, compression success, ventilation success, full decompression rate, and overall CPR success percentage at both post-test and re-test ($p<0.001$). The effect size for overall CPR success was $d=4.772$ at post-test and $d=3.104$ at re-test, indicating very large effects. Simulation-based BLS training provides significant and lasting advantages over conventional training in both theoretical knowledge and practical CPR skills. Re-test findings confirm that simulation training is effective in the long-term retention of acquired competencies. These results support the integration of simulation-based methods into paramedic education programs.

Keywords: Basic life support, simulation training, cardiopulmonary resuscitation, paramedic education, Q CPR

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Assessment of PLXNA2 Expression in ND7/23 Cells as a Sensory Neuron-Like Model

Şeyma DÜMÜR¹

Abstract

ND7/23 cells are a hybrid sensory neuron-like cell line commonly used as an in vitro model in neuroscience research. They offer a practical and reproducible platform for establishing molecular workflows before transition to primary neuronal cultures. Plexin-A2 (PLXNA2) is a receptor associated with semaphorin-related signaling pathways involved in neuronal development and axon guidance, making it a relevant candidate for early gene expression assessment in neuron-like cells.

This study aimed to evaluate the suitability of ND7/23 cells as a training model for qRT-PCR-based gene expression analysis and to determine basal PLXNA2 mRNA expression in these cells.

ND7/23 cells were cultured and assessed prior to downstream molecular analysis. Cell counting demonstrated good culture viability. Total RNA was extracted and its quantity and purity were measured spectrophotometrically. qRT-PCR was performed using GAPDH as the housekeeping gene and PLXNA2 as the target gene. Relative expression was calculated using the $2^{-\Delta Ct}$ method.

Cell viability analysis showed a total cell concentration of 3.26×10^6 cells/mL, with 93% live cells and 7% dead cells. RNA extraction yielded good-quality RNA, with concentrations of 791.9, 1051.3, and 498.0 ng/ μ L and acceptable purity ratios. qRT-PCR successfully detected PLXNA2 expression in ND7/23 cells across all replicates. Average Ct values for GAPDH were approximately 31.92, 32.02, and 31.74, while average Ct values for PLXNA2 were 32.65, 32.37, and 32.88. The calculated ΔCt values were 0.724, 0.351, and 1.134, corresponding to relative expression values of 0.605, 0.784, and 0.456, respectively. The mean relative expression of PLXNA2 was approximately 0.615.

These findings demonstrate that ND7/23 cells can be used successfully for qRT-PCR-based assessment of neuronal signaling-related genes. Basal PLXNA2 expression was detectable in ND7/23 cells, supporting the utility of this model for early-stage molecular studies and workflow optimization in sensory neuroscience research.

Keywords: ND7/23 cells; Plexin-A2 (PLXNA2); qRT-PCR; sensory neuron-like model; gene expression

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Investigation of the Effect of Boron Oxide Addition to Cement on Neutron Radiation Absorption Capacity

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Mustafa Engin KOCADAĞISTAN³

Ali GÜROL⁴

Abstract

The use of ionizing radiation in medical, nuclear, and research-based applications requires the development of effective shielding materials to reduce radiation exposure and improve occupational safety. Neutron radiation is particularly difficult to shield because neutrons have no electrical charge and interact mainly with atomic nuclei. Therefore, materials with high neutron absorption capacity are needed for radiation protection areas. In this study, the neutron absorption performance of boron oxide-added cement-based composites was experimentally investigated for potential use in medical radiation protection applications.

Reference cement samples and cement composites containing 1%, 2.5%, 5%, and 10% boron oxide were prepared. The neutron shielding behavior of the samples was evaluated by comparing neutron transmission parameters and absorption-related shielding values. The effect of increasing boron oxide content on neutron attenuation performance was examined to determine the most effective additive ratio.

The findings showed that boron oxide addition improved the neutron absorption capacity of cement-based composites. Unlike gamma-ray shielding behavior, neutron shielding performance increased progressively with increasing boron oxide content. Among the investigated samples, the composite containing 10% boron oxide exhibited the highest neutron absorption performance. This result is associated with the neutron absorption ability of boron-containing compounds, especially their contribution to reducing neutron transmission through the cement matrix. Consequently, boron oxide-added cement composites may be considered promising alternative materials for neutron shielding applications in non-load-bearing protective barriers, medical radiation areas, and radiation research laboratories.

Keywords: Boron oxide, Cement-based composite, Neutron absorption, Neutron shielding, Medical radiation protection

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Evaluating the Efficiency of Public and University Hospitals in Turkey Using Data Envelopment Analysis

İbrahim YÜKSEL¹

Abstract

Competition in the healthcare sector and rising healthcare costs necessitate that hospitals utilize their resources more effectively and efficiently. Therefore, hospitals conduct efficiency analyses of their service processes and employ various methods. The aim of this research is to determine and compare the efficiency levels of clinical service processes in public hospitals and university hospitals affiliated with the Ministry of Health in Turkey over the years. In this context, Data Envelopment Analysis (DEA) was used to determine the efficiency level, and the DEAP program was utilized for the application. The inputs for the analysis were physician, nurse, and bed numbers; the outputs were the number of inpatients, number of surgeries, bed turnover rate, bed occupancy rate, and average patient length of stay. The data covers the years between 2005 and 2025 and was obtained from the Ministry of Health's Health Statistics Yearbook reports. Before applying DEA, a correlation analysis was performed on the input and output data and the variables to be used in the analysis were determined accordingly. According to the findings of the study, it was determined that the clinical service processes of the Ministry of Health hospitals were inefficient for six years (2011, 2017, 2020, 2021, 2022, 2023); and those of university hospitals for four years (2012, 2013, 2020, 2021). Considering the years when the pandemic was most intense (2020-2021), it is clearly seen that global health events affected the clinical efficiency of hospitals. It can be said that the effect of this was reflected in the following years in the hospitals affiliated with the Ministry. Through comparative efficiency analyses conducted annually by public authorities or hospital administrations, evaluations can be made to identify the factors causing inefficiency, and necessary measures can be taken for the following years to make the efficient healthcare delivery process sustainable.

Keywords: Data Envelopment Analysis, public hospitals, university hospitals, efficiency, clinical process.

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Evaluation of Civilian CBRN Awareness in Hospital Emergency Department Personnel

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Abstract

CBRN incidents are complex and high-risk crises that pose serious challenges to healthcare systems. In such events, emergency departments are the primary point of contact in maintaining the continuity of healthcare services in hospitals. The effectiveness of the response process is directly affected by the preparedness levels of all occupational groups working in the hospital. This study was conducted to evaluate the awareness levels of emergency department staff regarding civilian CBRN incidents. The Ulusoy Civilian CBRN Hazards Management Scale was administered to healthcare professionals and support personnel working in the emergency department from September 2023 to February 2024. A total of 61 employees participated in the study, including physicians, resident physicians, nurses, midwives, paramedics, emergency medical technicians, medical secretaries, cleaning staff, and security personnel. The data obtained were analyzed using SPSS 23.0 through frequency analysis, Student's t-test, and One-Way ANOVA statistical methods. Nurses represented the largest group in the study, accounting for 45.9% of the participants. Among the employees, 86.9% reported having knowledge of national CBRN legislation, while 98% stated that personal protective equipment (PPE) should be used during CBRN incidents. The positioning of operational areas in a region contaminated with a CBRN agent differed significantly according to occupational groups ($p=0.12$). According to the mean scores, physicians showed a high level of awareness ($X=4.83$), whereas resident physicians ($X=3.85$) and support personnel (security staff $X=3.50$; cleaning staff $X=3.25$) demonstrated lower levels of knowledge. Although the overall awareness levels of emergency department staff were found to be high, differences in awareness were identified among healthcare professionals in specific intervention areas, and support personnel demonstrated lower levels of knowledge. It is necessary to adopt a holistic preparedness approach by implementing training and drills that include all employees. Knowledge of triage methods also differed significantly according to occupational groups ($p=0.00$). Emergency departments play a critical role as frontline units in such incidents; therefore, strengthening employees' knowledge and response skills is important.

Keywords: CBRN, civilian CBRN, emergency department, hospital disaster management,

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4thInternational Congress of Multidisciplinary Medical and Health Sciences Studies

Challenges in Delivering General Anesthesia Services in a Dental Faculty: An 8-Month Clinical Experience

Tuba ÇATAK¹

Abstract

Dental treatment under general anesthesia (GA) is often required in patients with poor cooperation, multiple comorbidities, and those undergoing prolonged, complex maxillofacial surgery (1). The demand for GA-based dental care in dental faculties is increasing (2). However, establishing an operating room and GA services in a dental faculty involves requirements different from classical hospital models. This presentation aims to summarize the key challenges encountered in a newly established dental faculty GA unit and to present practical solution strategies.

Planning and implementation of GA services in a new dental faculty operating room were evaluated using an experience-based observational approach. Challenges were grouped under five domains: team structure, infrastructure, patient selection, legal regulations, and interdisciplinary collaboration. Operational and managerial experiences from the first 8 months were systematically categorized.

Patients undergoing dental treatment under GA frequently have disabilities and systemic diseases that increase anesthetic risk (3,4). A review of dental clinic sedation and GA cases between 1996 and 2015 reported three deaths and one major complication (5). Safe care therefore requires adequate facilities and trained teams (6). Challenges clustered in five areas: Team: need for medically knowledgeable staff and absence of medically trained emergency support personnel. Infrastructure: limited access to consultants, intensive care and laboratory services, inadequate sterilization areas, and insufficient on-site biomedical support. Patient selection: need for structured preoperative assessment protocols. Legal framework: clarification of authority and responsibility limits. Dentist–anesthesiologist collaboration: shared airway safety and case-planning protocols required. Structured protocols and focused training improved safety and workflow.

GA services in dental faculties require not only technical setup but an integrated organizational model. Early protocol development and close dentist–anesthesiologist collaboration are central to safe, sustainable service delivery and provide a practical roadmap for similar centers.

Keywords: General anesthesia, Operating room setup, Interdisciplinary collaboration, Patient safety, Dental

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Retrospective Evaluation of the Use of Isobaric and Hyperbaric Bupivacaine in Spinal Anesthesia For Varicose Vein Surgery

Yavuz SAYGILI¹

Tuğba ARSLAN²

Ayşe MIZRAK ARSLAN³

Abstract

This study aimed to retrospectively evaluate the effects of hyperbaric (heavy) and isobaric bupivacaine used in spinal anesthesia for patients undergoing varicose vein surgery, in order to determine the more appropriate anesthetic agent.

The study included 32 patients who received hyperbaric bupivacaine (Group H) and 33 patients who received isobaric bupivacaine (Group P). Group H received 2.5 mL of 0.5% hyperbaric bupivacaine, while Group P received 2.5 mL of 0.5% isobaric bupivacaine. Data regarding the characteristics of the block and hospital length of stay were obtained from patient records. Intraoperative and postoperative data, including Visual Analog Scale (VAS) scores, vital signs, Richmond Agitation and Sedation Scale (RASS) scores, and complications, were retrospectively reviewed and recorded.

Compared with Group P, Group H demonstrated significantly shorter hospital stays, block regression times, and sensory and motor block onset times ($p<0.05$). Additionally, the dermatomal level of the block was significantly higher in Group H than in Group P ($p<0.05$). There were no statistically significant differences between the two groups in terms of VAS scores, vital parameters, RASS scores, duration of surgery, surgical or patient comfort, intraoperative inotrope (ephedrine) and analgesic requirements, or intraoperative and postoperative complications ($p>0.05$).

isobaric and hyperbaric bupivacaine provided safe and adequate anesthesia in patients undergoing varicose vein surgery under spinal anesthesia. Since patients receiving hyperbaric bupivacaine exhibited shorter sensory and motor block onset and regression times, as well as earlier discharge, this agent may offer an advantage in terms of cost efficiency. Therefore, considering hospital-related costs, hyperbaric bupivacaine may be preferred in such cases.

Keywords: Spinal Anesthesia, Isobaric Bupivacaine, Hyperbaric Bupivacaine, Varicose Vein Surgery, Retrospective

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Adams–Oliver Syndrome and Anesthetic Management: A Pediatric Case Report

Merve YUSİFOV¹

Abstract

Adams–Oliver Syndrome (AOS) is a rare congenital disorder characterized by aplasia cutis congenita and limb defects. It is thought to result from vascular disruption during embryonic development. AOS presents with a highly heterogeneous clinical spectrum; in addition to limb anomalies, it may involve multiple systems, including cardiac anomalies, vascular malformations, neurological disorders, and developmental delay.

In this case report, we aimed to discuss the anesthetic management of a pediatric patient with AOS undergoing dental surgery, along with key clinical considerations, in light of the current literature.

An 11-year-old male scheduled for multiple dental procedures under general anesthesia was found to have limb anomalies and a secundum-type atrial septal defect (ASD) during preoperative evaluation. Anesthesia was induced with propofol and rocuronium, and the patient was uneventfully intubated via the nasal route. Anesthesia was maintained with sevoflurane and remifentanil infusion. Hemodynamic stability was preserved throughout the procedure. Sugammadex was used for reversal of neuromuscular blockade to reduce the risk of residual neuromuscular block, and the patient was extubated without complications.

Due to its multisystem involvement, including cardiovascular anomalies, potential difficult airway, and possible difficult vascular access, AOS requires meticulous anesthetic management. This case demonstrates that safe anesthesia can be achieved in patients with AOS through comprehensive preoperative assessment and objective neuromuscular monitoring. In the perioperative period, appropriate monitoring, maintenance of hemodynamic stability, and reversal of neuromuscular blockade guided by objective methods such as Train-of-Four (TOF) monitoring are critical for safe anesthetic management in this patient population.

Keywords: Adams–Oliver syndrome, pediatric anesthesia, congenital anomalies, dental surgery, general anesthesia

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Psychological Determinants of Sleep Quality in Adolescents with Major Depressive Disorder: A Parallel Mediation Model

Oguz Bilal KARAKUS¹

Abstract

Major depressive disorder (MDD) is a significant psychiatric disorder associated with functional impairment during adolescence. Sleep disturbances are not only accompanying symptoms of depression but also important processes involved in the maintenance of the disorder. However, the psychological mechanisms underlying the relationship between depression and sleep quality remain unclear. This study investigated the potential mediating roles of anhedonia, ruminative thinking, and borderline personality features in the relationship between depression severity and sleep quality among adolescents with MDD.

A total of 152 adolescents aged 12–18 years who met Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5) criteria for MDD and had no additional active psychiatric diagnosis were included. Depression severity was assessed using the Children's Depression Rating Scale–Revised (CDRS-R), anhedonia using the Dimensional Anhedonia Rating Scale (DARS), ruminative thinking using the Ruminative Thought Style Questionnaire (RTSQ), borderline personality features using the Borderline Personality Inventory (BPI), and sleep quality using the Pittsburgh Sleep Quality Index (PSQI). To reduce content overlap, a “core depression” score was created by excluding sleep- and anhedonia-related items from the CDRS-R. Parallel multiple mediation analyses were conducted while controlling for age, sex, anxiety severity, medication use, caffeine consumption, and smartphone screen time.

Depression severity was significantly associated with poor sleep quality ($\beta=.367$, $p<.001$). Higher depression severity was associated with greater anhedonia ($\beta=-.293$, $p<.001$), increased ruminative thinking ($\beta=.307$, $p<.001$), and higher borderline personality features ($\beta=.351$, $p<.001$). Anhedonia ($\beta=-.243$, $p<.001$) and ruminative thinking ($\beta=.356$, $p<.001$) were associated with poor sleep quality, whereas borderline personality features did not independently predict sleep quality within the parallel mediation model ($p=.234$). Bootstrap analyses demonstrated a significant total indirect effect ($\beta=.217$, 95% CI=.110–.318).

These findings suggest that sleep quality in adolescents with MDD is associated not only with depressive symptom severity but also with reward-processing deficits and maladaptive cognitive patterns.

Keywords: major depressive disorder, sleep quality, anhedonia, ruminative thinking, borderline personality features, adolescence

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The Relationship Between Treatment Continuation Status and Clinical Characteristics in Children and Adolescents Diagnosed With Attention-Deficit/Hyperactivity Disorder

Çağlar Charles Daniel JAICKS¹

Abstract

Attention-deficit/hyperactivity disorder (ADHD) is one of the most common neurodevelopmental disorders in child and adolescent psychiatry. Although pharmacological treatment is effective in reducing core symptoms, treatment continuation may be influenced by age, sex, medication type, comorbid psychiatric conditions, adverse effects, and regularity of follow-up visits. This retrospective single-center study aimed to evaluate the relationship between pharmacological treatment continuation status and clinical characteristics in children and adolescents diagnosed with ADHD. A total of 60 patients aged 6–17 years who were diagnosed with ADHD and started on pharmacological treatment were included. Demographic characteristics, ADHD clinical presentation, initial medication, presence of psychiatric comorbidity, school-related problems, adverse effect reports, medication change, and follow-up continuation status were recorded from clinical files. Patients were divided into two groups according to treatment continuation status: those who continued treatment and those who discontinued treatment or were lost to follow-up. Of the patients, 38 (63.3%) continued pharmacological treatment, whereas 22 (36.7%) discontinued treatment or were lost to follow-up. The mean age was 10.9 ± 2.7 years, and 42 patients (70.0%) were male. The combined clinical presentation was the most frequent ADHD presentation (55.0%). Adverse effect reporting was significantly higher in patients who discontinued treatment or were lost to follow-up compared with those who continued treatment (54.5% vs. 23.7%, $p=0.016$). Medication change was also more common in the discontinuation/lost-to-follow-up group (45.5% vs. 18.4%, $p=0.025$). Psychiatric comorbidity and school-related problems were more frequent among patients who did not continue treatment, although the difference did not reach statistical significance.

Treatment continuation in children and adolescents with ADHD appears to be associated with adverse effects and medication change. Early recognition and management of treatment-related adverse effects may improve treatment adherence and clinical follow-up continuity.

Keywords: Attention-deficit/hyperactivity disorder; child psychiatry; treatment adherence; pharmacological treatment; adverse effect

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Evaluation of Pregnancy Results in Pregnant Women with Covid-19 Infection

İsmail YILMAZ

Abstract

This study investigates the impact of COVID-19 on pregnancy, fetuses, and newborns by comparing outcomes between infected and uninfected pregnant women.

Electronic hospital records from March 2020 to October 2021 were analyzed. A total of 320 COVID-19-positive and 438 COVID-19-negative pregnant women were included. Data on infection timing, delivery method, gestational age, fetal condition, newborn weight, and test results were examined.

First-time pregnancies made up 39.7% of the sample; 40.5% delivered via cesarean section. The average gestational age was 38.03 ± 1.73 weeks, and the mean birth weight was $3,228.67 \pm 511.86$ grams. Differences were found in maternal age, parity, and infection timing during pregnancy between groups. Although obstetric characteristics varied between infected and uninfected women, pregnancy, fetal, and neonatal outcomes were similar. While COVID-19 may pose risks for mothers and infants, further clinical research is needed to clarify its full impact.

Keywords: COVID-19, Fetal, Neonatal, Newborn, Pregnancy.



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Response to Medical Therapy and Its Impact on Surgical Decision in Patients with Stress and Mixed Urinary Incontinence Scheduled for Surgery

Berkay DEYİRMENCI¹

Abstract

In this prospective study, the response to medical therapy and its impact on surgical decision-making were evaluated in patients with stress urinary incontinence (SUI) and mixed urinary incontinence who were initially scheduled for surgery. After an 8-week follow-up, medical therapy was effective in both groups and reduced the need for surgery. Complete response rates were higher in mixed incontinence, whereas surgery avoidance was more common in the SUI group. Combined therapy improved treatment outcomes. Better responses were observed in younger and multiparous patients. Treatment was safe, well tolerated, and clinically applicable.

Keywords: Urinary incontinence, Stress urinary incontinence, Mixed urinary incontinence, Medical therapy, Pelvic floor exercise

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The Impact of Menopause on Obsessive-Compulsive Disorder and Sleep Disorders in Women

Tuğba ERCİ

Nuriye BÜYÜKKAYACI DUMAN

Fatma YILDIRIM

Abstract

The Impact of Menopause on Obsessive-Compulsive Disorder and Sleep Disorders in Women

Menopause is a transitional period in a woman's life characterized by biological, hormonal, and psychosocial changes, marked by cessation of reproductive capacity. During this period, estrogen and progesterone levels decline due to decreased ovarian function. These changes affect not only vasomotor symptoms but also the central nervous system, potentially leading to psychiatric symptoms.

Estrogen plays a regulatory role in serotonergic and dopaminergic systems. During menopause, decreased estrogen may affect serotonin reuptake, contributing to obsessive-compulsive disorder (OCD) symptoms. Obsessions are intrusive thoughts, while compulsions are repetitive behaviors to reduce anxiety. Increased cleaning, organizing, and checking behaviors may be observed.

Sleep disturbance is also common, with a bidirectional relationship between sleep quality and OCD. Obsessive thoughts may activate the sympathetic nervous system, suppress melatonin, prolong sleep latency, and disrupt sleep continuity. Chronic insomnia may impair prefrontal cortex function, reducing control over obsessive thoughts and increasing compulsions.

Psychosocial factors are important, especially partner support. Women may experience emotional regulation difficulties, communication problems, and social isolation. Supportive relationships are protective, while negative ones worsen symptoms.

In conclusion, menopause affects mental health and sleep regulation, with a reciprocal relationship between OCD and sleep disturbances. Hormonal treatment alone is insufficient; psychological assessment and holistic approaches are essential.

In line with the arguments put forward in this study, the effect of menopause on obsessive compulsive disorders and sleep patterns in women will be discussed in the light of current literature.

Keywords: Menopause, Obsessive-Compulsive Disorder, Sleep Disorders, Hormones, Psychosocial Factors



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Superior Capsular Reconstruction: A Case Report and Review of Current

Hasan Basri PINAR¹

Abstract

Superior capsular reconstruction (SCR) has emerged as an effective treatment option for patients with massive, irreparable rotator cuff tears, particularly in cases where joint preservation is desired. This technique aims to restore superior stability of the glenohumeral joint, prevent proximal migration of the humeral head, and improve shoulder function.

We present the case of a 62-year-old patient with chronic shoulder pain, weakness, and limited range of motion following a long-standing rotator cuff tear. Clinical examination and imaging revealed a massive, irreparable posterosuperior rotator cuff tear with significant tendon retraction and fatty degeneration. Due to the patient's functional demands and absence of advanced glenohumeral arthritis, superior capsular reconstruction was performed using a tensor fascia lata allograft.

Postoperatively, the patient followed a structured rehabilitation protocol. At the 12-month follow-up, significant improvement was observed in pain scores, shoulder function, and range of motion. Radiological evaluation demonstrated maintenance of acromiohumeral distance and graft integrity.

Recent literature suggests that SCR provides favorable clinical outcomes, including pain relief and functional improvement, particularly in well-selected patients without advanced arthropathy. Compared to reverse shoulder arthroplasty, SCR offers the advantage of joint preservation and may be preferable in younger or more active individuals. However, factors such as graft type, surgical technique, and patient selection remain critical for optimal outcomes.

In conclusion, superior capsular reconstruction represents a promising joint-preserving option in the management of irreparable rotator cuff tears, with growing evidence supporting its effectiveness.

Keywords: Superior capsular reconstruction, rotator cuff tear, shoulder instability, irreparable tear, allograft

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Current Approach to Lisfranc Fracture–Dislocations

Hasan Basri PINAR¹

Abstract:

Fracture–dislocation injuries of the Lisfranc joint complex are complex midfoot traumas that disrupt normal biomechanics and may result in chronic pain, instability, functional impairment, and post-traumatic arthritis in the long term. Early diagnosis and achievement of anatomical reduction are the main determinants of successful outcomes.

Current literature indicates that, particularly in low-energy or minimally displaced injuries, plain radiographs may be insufficient for diagnosis. Computed tomography plays a crucial role in evaluating fracture patterns and joint incongruity, while magnetic resonance imaging is valuable for detecting ligamentous injuries.

Treatment planning should consider injury morphology, degree of instability, and extent of articular surface damage. In surgical management, anatomical reduction remains the most important prognostic factor. Although open reduction and internal fixation has long been the standard approach, primary arthrodesis has gained increasing acceptance in recent years, especially in purely ligamentous injuries and cases with severe joint damage. Recent clinical studies have demonstrated that primary arthrodesis provides lower reoperation rates, better pain control, and at least comparable functional outcomes. Furthermore, in selected cases, minimally invasive techniques and dorsal bridge plating have emerged as promising alternatives in terms of soft tissue preservation and biological healing.

The treatment strategy for Lisfranc fracture–dislocations should be individualized based on patient and injury characteristics. While anatomical reduction remains the primary goal, primary arthrodesis represents a strong treatment option in appropriately indicated cases. This review summarizes current diagnostic and treatment approaches to Lisfranc injuries in light of the recent literature.

Keywords: Lisfranc fracture–dislocation, arthrodesis, midfoot injury, trauma, fixation

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Psoas Muscle Quality Is Independently Associated With Functional Disability in Symptomatic Multilevel Lumbar Spinal Stenosis

Mehmet Ali BOZCA¹

Abstract

Background: Psoas muscle degeneration has emerged as a potential contributor to pain severity and functional impairment in degenerative spinal disorders. However, its clinical relevance in symptomatic multilevel lumbar spinal stenosis (SMLSS) remains unclear. This study investigated the association between psoas major morphometric parameters and clinical outcomes in patients with SMLSS.

Methods: A total of 112 patients with SMLSS were retrospectively analyzed. Clinical data including age, sex, body mass index (BMI), symptom duration, Oswestry Disability Index (ODI), and visual analog scale (VAS) scores for back and leg pain were collected. Psoas major morphometry was assessed using computed tomography at the L3 level. Psoas muscle index (PMI), Hounsfield unit (HU), and modified psoas muscle ratio (MPM) were measured. Patients were stratified according to disability (ODI ≤ 42 vs. >42) and pain severity (VAS ≤ 3 vs. >3). Univariable and multivariable regression analyses were performed.

Results: Patients with higher disability had significantly lower PMI and HU values and longer back pain duration. Patients with severe back pain also showed significantly lower PMI and HU values, whereas no association was observed with leg pain severity. In multivariable analysis, HU was independently associated with ODI scores ($\beta = -0.006$, 95% CI: -0.015 to -0.005 , $p = 0.001$). For back pain severity, PMI remained the only independent predictor ($\beta = -0.686$, 95% CI: -0.942 to -0.374 , $p < 0.001$).

Conclusions: Psoas major muscle quality was independently associated with functional disability, whereas reduced psoas muscle mass was independently associated with greater back pain severity in patients with symptomatic multilevel lumbar spinal stenosis. These findings highlight the potential role of psoas muscle morphometry as an imaging biomarker for clinical assessment and risk stratification.

Keywords: Lumbar spinal stenosis; Psoas major muscle; Sarcopenia; Hounsfield unit; Functional disability; Low back pain.

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The Relationship Between Great Saphenous Vein Diameter and CEAP Clinical Class in Patients With Chronic Venous Insufficiency

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Abstract

Chronic venous insufficiency is a common vascular disorder with a wide clinical spectrum ranging from uncomplicated varicose veins to skin changes and venous ulceration. Great saphenous vein diameter and reflux duration are frequently evaluated by venous Doppler ultrasonography; however, their relationship with clinical severity may vary among patients. This retrospective single-center study aimed to evaluate the relationship between great saphenous vein diameter and CEAP clinical class in patients with chronic venous insufficiency. A total of 60 patients diagnosed with chronic venous insufficiency were included. Demographic characteristics, body mass index, involved extremity side, CEAP clinical class, great saphenous vein diameter, reflux duration, perforator vein insufficiency, and treatment modality were recorded. Patients were divided into two groups according to CEAP clinical class as early-stage disease (C2–C3) and advanced-stage disease (C4–C6). Clinical and Doppler ultrasonographic parameters were compared between the groups, and correlation analyses were performed. Of the patients, 34 were classified as CEAP C2–C3 and 26 as CEAP C4–C6. Patients in the advanced-stage group were older than those in the early-stage group (59.4 ± 7.8 vs. 48.9 ± 10.7 years, $p < 0.001$). Great saphenous vein diameter was significantly higher in the CEAP C4–C6 group compared with the CEAP C2–C3 group (7.8 ± 1.1 mm vs. 5.5 ± 1.3 mm, $p < 0.001$). Reflux duration and perforator vein insufficiency were also significantly higher in advanced-stage disease ($p < 0.001$ for both). CEAP clinical class showed a strong positive correlation with great saphenous vein diameter ($r = 0.841$, $p < 0.001$) and a moderate positive correlation with reflux duration ($r = 0.686$, $p < 0.001$). Great saphenous vein diameter was strongly associated with CEAP clinical class in patients with chronic venous insufficiency. Systematic Doppler ultrasonographic assessment may contribute to clinical staging and treatment planning in these patients.

Keywords: Chronic venous insufficiency; CEAP classification; great saphenous vein; venous reflux; Doppler ultrasonography.

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Carotid Endarterectomy in Symptomatic and Asymptomatic Carotid Stenosis: Current Evidence and the Limitations of CREST-2

Dilara YİĞİT¹

Hüseyin DEMİRTAŞ²

Abstract

Carotid artery stenosis is a leading preventable cause of ischemic stroke, yet optimal revascularization strategy remains debated. This review evaluates the evidence base for carotid endarterectomy (CEA) in symptomatic and asymptomatic ($\geq 70\%$) stenosis and examines why the methodological limitations of CREST-2 (November 2025) preclude its findings from altering established guidelines.

In symptomatic stenosis, CEA superiority is supported by consistent evidence. Vasavada et al. demonstrated significantly lower periprocedural stroke risk with CEA over transfemoral carotid artery stenting (TF-CAS). Aggarwal et al., in a meta-analysis of 15,251 patients, confirmed higher stroke rates with TF-CAS alongside lower myocardial infarction risk. ACST-2 reported substantially more non-disabling procedural strokes in the TF-CAS arm. The 2023 ESVS Guidelines and SVS recommend CEA as first-line treatment in low-surgical-risk symptomatic patients.

In asymptomatic patients, CREST-2 showed a statistically significant reduction in four-year primary events with TF-CAS plus intensive medical therapy (IMT) versus IMT alone, whereas CEA demonstrated a numerical but non-significant benefit ($p=0.24$). Four methodological concerns limit applicability. TF-CAS and CEA were never directly compared, each tested against a separate control group with differing event rates. Credentialing was markedly asymmetric: 50% of TF-CAS applicants approved under stringent recent-volume requirements versus 90% of CEA surgeons. The IMT protocol, PCSK9 inhibitors, LDL below 70 mg/dL, and structured lifestyle coaching, is unlikely reproducible in routine practice. Transcarotid artery revascularization (TCAR), associated with 50–90% lower stroke rates than TF-CAS in VQI registry data, was not evaluated. Chimowitz noted that excluding periprocedural myocardial infarction and permitting operator-team neurological assessments may have systematically favored the revascularization arms.

CEA remains the standard of care for symptomatic stenosis. In asymptomatic disease, CREST-2's structural limitations are insufficient to justify revising current practice, affirmed by the SVS in December 2025. Decisions should be individualized based on symptom status, anatomy, institutional expertise, and patient preference, with cardiovascular surgery's multidisciplinary approach central to this process.

Keywords: carotid endarterectomy, transfemoral carotid artery stenting, CREST-2, asymptomatic carotid stenosis, symptomatic carotid stenosis

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The Effect of Hearing Aid Use on Sensory Processing and Postural Control in Adults

Beyza Nur YAŞAR¹

Merve MERAL ÇETİNKAYA²

Abstract

The auditory system is an important structure involved in the perception of stimuli and the processing of sensory information. It is thought that a reduction in auditory input may lead to negative effects on balance and sensory processing by influencing perception and integration processes. Hearing aids are also thought to provide benefits by increasing auditory awareness. This study aimed to evaluate the effects of hearing loss and hearing aid use on balance and sensory processing processes. A total of 66 individuals from three groups participated in the study: normal-hearing individuals, individuals with hearing loss using hearing aids, and individuals with hearing loss not using hearing aids. Videonystagmography, pure-tone audiometry, the Turkish version of the Adult Sensory Processing Scale (ASPS), and the Sensory Organization Test (SOT) were administered in the study. Ethical approval for the study was obtained from the relevant institutional ethics committee. A significant difference was found among the groups in SOT scores. Individuals using hearing aids were observed to have lower SOT scores compared to those not using hearing aids. Individuals with hearing loss were found to demonstrate the lowest performance in the VIS, PREF, VEST, and COMP parameters. It was also observed that individuals with hearing loss were categorized at higher levels of “probable difficulty” and “definite difficulty” in most ASPS patterns compared to normal-hearing individuals ($p<0.05$). The findings obtained support the idea that hearing loss may have an effect on sensory processing and balance. Additionally, hearing aid use is thought to provide a positive contribution. These findings need to be supported by larger sample groups and more diverse hearing loss profiles.

Keywords: hearing loss, SOT, sensory processing, ASPS, hearing aid

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Evaluation of the Effects of Repositioning Maneuvers and Brandt-Daroff Exercises on Balance in Patients with Lateral Canal Cupulolithiasis Benign Paroxysmal Positional Vertigo

Berivan OVAT¹

Merve MERAL ÇETİNKAYA²

Abstract

Benign paroxysmal positional vertigo (BPPV) is one of the most common causes of peripheral vertigo. The management of ageotropic lateral canal cases is more challenging, and the effectiveness of treatment approaches remains controversial. Repositioning maneuvers are widely used, whereas Brandt-Daroff exercises are generally preferred in resistant cases. However, studies comparing the effects of these two treatment methods on balance are limited. Therefore, this study aimed to compare the effectiveness of Brandt-Daroff exercises and repositioning maneuvers in patients with lateral canal cupulolithiasis benign paroxysmal positional vertigo.

Thirty patients diagnosed with lateral canal cupulolithiasis BPPV using the roll test were included in the study. The patients were divided into two groups: the first group received Brandt-Daroff exercises, while the second group underwent repositioning maneuvers. Pre- and post-treatment evaluations included sensory organization test parameters obtained through computerized dynamic posturography and the Dizziness Handicap Inventory.

After treatment, significant improvements were observed in vestibular and composite scores of the sensory organization test in both groups ($p<0.05$). Similarly, Dizziness Handicap Inventory scores significantly decreased following treatment in both groups ($p<0.05$). However, no statistically significant difference was found between the two treatment groups in terms of the magnitude of improvement ($p>0.05$).

In conclusion, repositioning maneuvers and Brandt-Daroff exercises were similarly effective in improving balance performance, vestibular function, and dizziness-related symptoms in patients with lateral canal cupulolithiasis BPPV.

Keywords: Benign Paroxysmal Positional Vertigo, Lateral Canal Cupulolithiasis, Brandt-Daroff Exercise, Repositioning maneuver, Posturography

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Forensic Microbiology and Biodefense: Evaluation of Medical Students' Awareness Regarding Civil Chemical, Biological, Radiological, and Nuclear (CBRN) Threats from a Peer Education Perspective

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Abstract

This study aimed to evaluate the awareness levels of medical students regarding Civil Chemical, Biological, Radiological, and Nuclear (CBRN) threats, forensic microbiology, and biosafety rules, which have gained significant importance following the COVID-19 pandemic. **Materials and** An 18-item questionnaire, consisting of 14 subject-specific and 4 demographic questions, was developed and validated with a Cronbach's alpha value of 0.708. The survey was administered online to 229 volunteer medical students (Years 1 to 6) at Dokuz Eylül University Faculty of Medicine using a 5-point Likert scale. Statistical analyses were performed using Student's t-test and One-Way ANOVA, with a significance level of $p < 0.0578$.

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The participants demonstrated high clinical awareness regarding contemporary environmental health issues. Strong awareness was observed concerning chronic pesticide exposure (mean: 4.03), its neurological impacts (mean: 3.79), and the potential of microplastics to carry heavy metals (mean: 3.84). Conversely, awareness levels were moderate for specific technical subjects, such as the difference between natural and artificial radiation (mean: 2.70). While gender did not show a statistically significant difference in most environmental hazard perceptions, significant variations were detected among different education years ($p < 0.001$), indicating the transformative effect of medical education on risk perception.

Medical students possess a robust clinical awareness of current environmental hazards such as pesticide exposure and microplastic pollution. However, the findings suggest that the medical curriculum should incorporate a more in-depth approach to technical environmental toxicology and specific public health risk. Furthermore, peer education emerges as a valuable method to enhance this awareness among future healthcare professionals

Keywords: Civil CBRN Threats, Forensic Microbiology, Pesticide Exposure, Microplastics, Medical Education



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A Ten-Year (2015-2024) Oecd-Comparative Analysis Of Antibiotic Consumption Trends In Türkiye And An Appraisal Of Rational Drug Use Policies In The Light Of Antimicrobial Resistance

Raif Kaan BAŞ¹

Abstract

Antibiotic consumption is the strongest ecological determinant of antimicrobial resistance (AMR). Despite a decade of investment in rational drug use (RDU) policies, Türkiye records one of the highest antibiotic consumption rates among OECD countries. This study analyses the 2015-2024 consumption trend in Türkiye against the OECD average and appraises the pharmacoeconomic impact of national RDU policies.

A retrospective descriptive ecological analysis was conducted using the Turkish Ministry of Health Health Statistics Yearbooks (SİY) 2015-2024 (Chapter 9, Drug Statistics) and OECD Health at a Glance 2025. Primary indicators were ATC J01 defined daily doses per 1,000 inhabitants per day (DDD/1,000/day), the share of family-medicine prescriptions containing an antibiotic, and the share of cephalosporins plus quinolones. Annual percent change, period averages, and Türkiye-to-OECD ratios were computed; findings were interpreted within the WHO AWaRe (Access, Watch, Reserve) framework.

The share of family-medicine prescriptions containing an antibiotic declined from 34.9% in 2011 to 24.9% in 2024 (-10 percentage points; -29% relative). ATC group J consumption plateaued at 41-44 DDD/1,000/day during 2011-2016, dropped to a nadir of 27.6 in 2020 under the combined influence of RDU efforts and COVID-19, then rebounded to a historical peak of 44.7 in 2023 (+62%). ATC J01 consumption reached 41.1 DDD/1,000/day in 2023, approximately 2.30 times the OECD average (17.9). The cephalosporin + quinolone share fell from 39.1% to 28.9% but remained 1.77 times the OECD average (16.4%) in 2023.

Türkiye exhibits a structural fourteen-year decline in antibiotic consumption, yet the post-pandemic rebound and the persistent above-OECD share of broad-spectrum agents constitute a critical AMR warning. Adding a pharmacoeconomic component to AİKEP, integrating AWaRe into national surveillance, and linking the National AMR Surveillance System (UAMDSS) to the prescription tracking system (İTS) are prioritised policy recommendations.

Keywords: Antibiotic consumption; antimicrobial resistance; rational drug use; ATC/DDD; OECD; AWaRe; pharmacoeconomics; family medicine

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Dulaglutide Modulates IL-1 β Response in Indomethacin-Induced Gastric Ulcer Model in Rats

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Abstract

Non-steroidal anti-inflammatory drugs (NSAIDs), particularly indomethacin, are widely used for the treatment of pain and inflammation but may cause gastric mucosal injury by disrupting mucosal defense mechanisms and promoting inflammatory responses. Dulaglutide, a long-acting glucagon-like peptide-1 receptor agonist primarily used in the treatment of type 2 diabetes, has recently attracted attention due to its potential anti-inflammatory and cytoprotective properties. The present study investigated the effects of dulaglutide on selected inflammatory and metabolic markers in an indomethacin-induced gastric ulcer model in rats. Male Sprague–Dawley rats were divided into seven groups: control, indomethacin, indomethacin + famotidine, indomethacin + dulaglutide 50 μ g/kg, indomethacin + dulaglutide 100 μ g/kg, indomethacin + dulaglutide 150 μ g/kg, and dulaglutide 150 μ g/kg. Dulaglutide doses were selected based on previous experimental rat studies using once-weekly subcutaneous administration. Gastric tissue samples were collected and analyzed for TNF- α , IL-6, IL-1 β , and GLP-1 levels using enzyme-linked immunosorbent assay (ELISA). Statistical analyses showed no significant differences among groups in gastric tissue TNF- α , IL-6, or GLP-1 levels. However, IL-1 β levels differed significantly among groups. Indomethacin administration increased gastric IL-1 β levels compared with the control group, while famotidine and high-dose dulaglutide treatment (150 μ g/kg) significantly reduced IL-1 β levels compared with the indomethacin group. These findings suggest that high-dose dulaglutide may modulate the gastric inflammatory response in indomethacin-induced gastric injury, particularly through changes in IL-1 β levels. Further histopathological and molecular analyses are needed to clarify the gastroprotective potential and underlying mechanisms of dulaglutide in NSAID-induced gastric mucosal injury.

Keywords: Dulaglutide; indomethacin; gastric ulcer; IL-1 β ; inflammation

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4th International Congress of Multidisciplinary Medical and Health Sciences Studies

The Relationship Between Triglyceride/HDL-Cholesterol Ratio and Glycemic Parameters in Patients With Prediabetes

Muhammet ATEŞ¹

Abstract

Prediabetes is an intermediate metabolic state associated with increased risk of type 2 diabetes mellitus and cardiometabolic disease. The triglyceride/HDL-cholesterol ratio is a simple and inexpensive marker that may reflect insulin resistance and atherogenic dyslipidemia. This retrospective single-center study aimed to evaluate the relationship between triglyceride/HDL-cholesterol ratio and glycemic parameters in patients with prediabetes. A total of 60 adult patients diagnosed with prediabetes were included. Age, sex, body mass index, fasting plasma glucose, HbA1c, triglyceride, HDL-cholesterol, LDL-cholesterol, total cholesterol, non-HDL-cholesterol, and triglyceride/HDL-cholesterol ratio were recorded. Prediabetes was defined as fasting plasma glucose of 100–125 mg/dL and/or HbA1c of 5.7–6.4%. Patients were divided into two groups according to the median triglyceride/HDL-cholesterol ratio: low TG/HDL-C ratio and high TG/HDL-C ratio. Clinical and laboratory parameters were compared between groups, and correlation analyses were performed. The mean age was 52.1±9.5 years, and 34 patients (56.7%) were female. Patients with high TG/HDL-C ratio had significantly higher body mass index, fasting plasma glucose, HbA1c, triglyceride, and non-HDL-cholesterol levels, whereas HDL-cholesterol was significantly lower. TG/HDL-C ratio was positively correlated with HbA1c ($r=0.426$, $p=0.001$), fasting plasma glucose ($r=0.389$, $p=0.002$), body mass index ($r=0.354$, $p=0.006$), and non-HDL-cholesterol ($r=0.492$, $p<0.001$). These findings suggest that TG/HDL-C ratio may be a practical marker associated with glycemic burden and metabolic risk in patients with prediabetes.

Keywords: Prediabetes; triglyceride/HDL-cholesterol ratio; HbA1c; fasting glucose; insulin resistance.

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4thInternational Congress of Multidisciplinary Medical and Health Sciences Studies

Determination of Real Time Two Dimensional Shear Wave Elastography Values Of The Liver, Spleen and Kidneys in Cats

Seyyid Ahmet KÖŞKERİ¹

Abstract

Physicians have long sought to detect pathological changes by exploiting the physical properties of tissues; however, conventional methods such as palpation have remained limited to superficial lesions. This need laid the groundwork for the development of ultrasonographic elastography (USE), first described in the 1990s and increasingly adopted in clinical practice since 2003. Among USE techniques, two-dimensional shear wave elastography (2D-SWE) has emerged as the most advanced approach, enabling quantitative and real-time assessment of tissue stiffness.

Given the scarcity of studies on 2D-SWE applications in cats within veterinary medicine, this thesis aimed to determine real-time 2D-SWE values of the liver, spleen, and kidneys in clinically healthy adult cats and to establish normal reference intervals for these organs.

This prospective study was conducted at the Internal Medicine Clinic of Ondokuz Mayıs University, Faculty of Veterinary Medicine, and included 28 clinically healthy adult cats (15 male, 13 female) aged 2–5 years, with no history of systemic disease, abnormal clinical findings, or laboratory abnormalities. All animals underwent comprehensive physical examination and a broad serum biochemistry panel (ALT, ALP, GGT, BUN, creatinine); only individuals with values within reference ranges were enrolled. Elastography measurements were performed without sedation using the Sound Touch Elastography (STE) technology integrated into the Mindray Vetus 9 ultrasound system, and Young's modulus (E, kPa), shear modulus (G, kPa), and shear wave speed (Cs, m/s) were recorded.

Statistical analysis revealed median E values of 6.53 kPa for the liver, 11.86 kPa for the spleen, and 13.91 kPa for the kidneys. Near-perfect positive correlations were observed among E, Cs, and G parameters across all three organs ($\rho > 0.98$, $p < 0.0001$). ROC curve analysis demonstrated excellent classification performance, with AUC = 1.000 particularly for the kidneys and liver. Reference intervals calculated using the 2.5th–97.5th percentile method in accordance with the CLSI EP28-A3c guideline represent the first systematic 2D-SWE reference data for these organs in healthy cats.

In conclusion, the reference values obtained in this study are anticipated to make a significant contribution to the clinical application of 2D-SWE in the diagnosis and monitoring of hepatic, splenic, and renal diseases in cats.

Keywords: Ultrasonographic Elastography, Shear Wave Elastography, 2D-SWE, Cat, Liver, Spleen, Kidney, Reference Interval, Tissue Stiffness

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4th International Congress of Multidisciplinary Medical and Health Sciences Studies

Nutriskor Reviews of Ketchup and Mayonnaise Sold in Turkey

Gölsüm DEVECİ¹

Abstract

Ultra-processed sauces like ketchup and mayonnaise are among the foods recommended for limited consumption due to their high salt, sugar, fat, and energy content. This study was conducted to examine the nutritional composition of commercially available ketchup and mayonnaise products in Türkiye and to evaluate their nutritional quality according to the Nutriskor system.

This observational and descriptive study, conducted between January and May 2026, evaluated 24 ketchup and 28 mayonnaise samples found in supermarkets and online sales platforms. The products were scored using the updated Nutriskor algorithm based on their label information regarding energy, saturated fat, sugar, salt, protein, fiber, and fruit/vegetable content. Descriptive statistics, Mann-Whitney U Test, Kruskal-Wallis H Test, Chi-square Test, and Spearman Correlation Analysis were used in the analysis of the data

The vast majority of ketchup samples were classified as D and E according to the Nutriskor system. A significant positive correlation was found between salt content and Nutriskor classification in ketchups ($p<0.01$). In mayonnaise samples, the majority of products were also classified as D and E, and a strong positive correlation was found between energy and saturated fat content and Nutriskor values, especially in classic mayonnaise ($p<0.01$). While significant differences were observed in Nutriskor values among ketchup types, no significant differences were found among mayonnaise types. Overall, the products were determined to have high energy, sugar, salt, and saturated fat content.

A large majority of ketchup and mayonnaise products sold in Türkiye have been found to have low nutritional quality. In particular, their salt, sugar, and saturated fat content negatively impacts Nutriskor values. These findings highlight the need for reformulation studies in sauce products and the importance of nutritional labeling systems for public health.

Keywords: Nutriskor, ketchup, mayonnaise, nutritional information on labels, ultra-processed sauces

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4th International Congress of Multidisciplinary Medical and Health Sciences Studies

Childhood Brucellosis in a Rural Region: A Single-Center Retrospective Evaluation

Gizem Tükenmez¹

Abstract

Brucellosis is an endemic zoonotic infection in our country that may present with non-specific clinical findings in childhood. This study aimed to evaluate the demographic characteristics, epidemiological risk factors, clinical and laboratory findings, and treatment approaches of pediatric patients diagnosed with brucellosis at our center, and to contribute to the literature in light of regional data.

This retrospective study included 24 pediatric patients diagnosed with brucellosis among those who presented to the pediatric outpatient clinic of a university hospital between 2020 and 2025. Medical records were reviewed retrospectively. A standard tube agglutination test (SAT) titer of $\geq 1:160$, in the presence of compatible clinical findings, was considered diagnostic.

Results: The mean age of the patients was 11.9 ± 3.8 years, and 21 (87.5%) were male. Most patients (87.5%) were living in rural areas. A history of consumption of unpasteurized dairy products was present in 70.8% of cases, and 79.2% had a history of animal husbandry in the family. A positive family history was noted in 60% of patients.

The most common presenting complaint was joint pain (79.2%), most frequently localized to the lower back (16.7%). This was followed by constitutional (B) symptoms (16.7%) and fever (12.5%). Laboratory findings at admission revealed elevated C-reactive protein (CRP) levels in 45.8% and elevated transaminases in 25% of patients. Eight patients (33.3%) required hospitalization. All three patients with sacroiliac joint involvement and hepatosplenomegaly were hospitalized ($p < 0.05$). The most commonly used antibiotic regimen was the combination of rifampicin and doxycycline (70.8%). Aminoglycoside-containing regimens were more frequently preferred in hospitalized patients.

Our findings indicate that children living in rural areas, with a family history of animal husbandry and consumption of unpasteurized dairy products, are at increased risk for brucellosis. In endemic regions, brucellosis should be considered in the differential diagnosis of children presenting with joint pain, constitutional symptoms, and prolonged fever. This study contributes to increasing clinical awareness by highlighting the current epidemiological profile of pediatric brucellosis.

Keywords: Brucella, child, joint pain, zoonotic inf

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4thInternational Congress of Multidisciplinary Medical and Health Sciences Studies

Diagnostic Accuracy of Frozen Section in Gynecological Specimens: A Comparative Analysis with Paraffin Sections in Ovarian and Endometrial Cases

*Selen TÜRKASLAN¹
Özgecan GÜNDOĞAR²
Sibel BEKTAŞ³*

Abstract

Frozen section examination plays a critical role in the intraoperative decision-making process in gynaecological surgery. However, its diagnostic accuracy may vary depending on the tissue type and tumour characteristics. The aim of this study was to evaluate the agreement between frozen section and paraffin section diagnoses in ovarian and endometrial specimens.

A total of 99 patients who underwent intraoperative frozen section examination were included in this retrospective study. Of these cases, 64 involved ovarian material and 26 involved endometrial material. Eight cases reported as “the definitive result will be provided from the paraffin block” were excluded from the concordance analysis. The concordance rate between

frozen and paraffin-embedded diagnoses was calculated, and sensitivity and specificity analyses were performed. Subgroup analyses were evaluated separately for ovarian and endometrial cases.

In 90 evaluable cases, the overall agreement rate between frozen section and paraffin-embedded diagnoses was found to be 92.2%. The overall sensitivity was calculated as 82.1% and the specificity as 96.8%. In the subgroup analysis, sensitivity was found to be 66.7% in ovarian cases and 88.9% in endometrial cases. Specificity was high in both groups, at 95.8% and 100% respectively. Most cases of discordance were observed in ovarian specimens, with the primary causes being borderline tumours and the inability to establish a definitive diagnosis during the frozen section process. In endometrial cases, discordance was predominantly related to the depth of myometrial invasion.

Frozen section examination has high diagnostic accuracy in gynaecological specimens and is particularly reliable in endometrial lesions. However, in ovarian tumours, particularly in borderline cases, careful evaluation is required due to lower sensitivity.

Keywords: Frozen section; diagnostic accuracy; ovarian tumors; endometrial lesions; intraoperative consultation

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4thInternational Congress of Multidisciplinary Medical and Health Sciences Studies

Intraocular Pressure Response to Digital Screen Exposure in Healthcare Workers: Early Acute Peak and Late Adaptation

Sinem KESER¹

Abstract

This study aimed to evaluate the effects of early- and late-phase digital screen exposure on intraocular pressure (IOP) and ocular perfusion pressure (OPP) in healthcare workers, and to investigate potential adaptation mechanisms associated with exposure duration.

Thirty healthy healthcare workers (mean age: 33.0 ± 8.2 years; 56.7% female) were included. IOP and OPP were measured at baseline and at the 1st, 15th, and 30th minutes following 1-hour and 3-hour digital screen exposure. As most variables were not normally distributed, nonparametric tests were used. Temporal changes were analyzed with the Friedman test, and comparisons between exposure durations were performed using the Wilcoxon signed-rank test.

A significant time-dependent change in IOP was observed after both exposure durations ($p < 0.001$). The greatest IOP increase occurred at the 1st minute, followed by a gradual return toward baseline at the 15th and 30th minutes. The 1st-minute IOP increase in the right eye was significantly higher after 1-hour exposure compared to 3-hour exposure ($p = 0.009$). No significant differences were found between exposure durations in terms of IOP recovery at later time points (all $p > 0.05$).

For OPP, no significant differences were observed between 1-hour and 3-hour exposures regarding recovery from the 1st to the 30th minute (right eye: $p = 0.885$; left eye: $p = 0.926$). Right-eye dominance was present in 86.7% of participants.

Digital screen use induces an early acute increase in IOP, likely related to increased visual attention and accommodative demand. With prolonged exposure, a physiological adaptation may reduce this response. The more pronounced right-eye IOP increase may be associated with dominant eye prevalence. Stable OPP findings suggest that short-term screen exposure does not significantly compromise ocular perfusion.

Keywords: Intraocular pressure; digital screen exposure; ocular perfusion pressure; eye dominance.

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4th International Congress of Multidisciplinary Medical and Health Sciences Studies

Performance of GPT-5 for Pneumonia Detection on Chest X-Rays

Hamza Eren Güzel¹

Abstract

To evaluate the performance of GPT-5.5 in distinguishing normal chest radiographs, bacterial pneumonia, and viral pneumonia using a public chest X-ray dataset without clinical information. This retrospective experimental study utilized the publicly available Kaggle Chest X-Ray Images (Pneumonia) dataset. A total of 300 chest radiographs were included, consisting of 100 normal cases, 100 bacterial pneumonia cases, and 100 viral pneumonia cases. GPT-5.5 was evaluated using a single standardized prompt: “Do you see a pathology in this chest X-Ray, yes or no. If yes, what is it?” No clinical history, laboratory findings, or metadata were provided. Model outputs were categorized as normal, bacterial pneumonia, viral pneumonia, or indeterminate. Sensitivity, specificity, and overall accuracy were calculated.

GPT-5.5 demonstrated better diagnostic performance for bacterial pneumonia compared with viral pneumonia. Sensitivity and specificity for bacterial pneumonia were 71% and 82%, respectively. Viral pneumonia showed lower sensitivity at 42% with a specificity of 79%. Among normal chest radiographs, 84% were correctly classified as normal. Overall three-class classification accuracy was 64.3%. The most common errors occurred between viral pneumonia and normal radiographs.

GPT-5.5 showed moderate capability in detecting abnormalities on chest radiographs and performed more successfully in identifying bacterial pneumonia than viral pneumonia. The relatively low sensitivity for viral pneumonia suggests limitations in detecting subtle or diffuse radiographic findings in the absence of clinical context. Although multimodal large language models may provide supportive assistance in radiologic interpretation, their current performance remains insufficient for standalone pneumonia subtype classification.

Keywords: artificial intelligence; chest X-ray; pneumonia; multimodal large language model

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4thInternational Congress of Multidisciplinary Medical and Health Sciences Studies

Reorganization of Primary Healthcare Services After the February 6, 2023 Kahramanmaraş Earthquakes: Field Experience and Public Health Interventions during the First Month

Elif BEYOĞLU¹

Abstract

This study aimed to evaluate the public health interventions and primary healthcare practices implemented during the first month following the February 6, 2023 Kahramanmaraş earthquakes.

In the post-earthquake period, temporary sheltering areas were established in the city center under the coordination of Disaster and Emergency Management Authority (AFAD), National Medical Rescue Team (UMKE), and district health administrations. Rotational healthcare teams were assigned to maintain continuity of healthcare services in tent settlements. Field screening activities were conducted to identify pregnant women, postpartum women, infants, and individuals with chronic diseases, while vaccination, follow-up, and preventive healthcare services were systematically organized. Water safety monitoring, environmental health inspections, communicable disease surveillance, and syndromic surveillance practices were carried out regularly throughout the disaster response period.

Within the first week of the disaster, the public health laboratory was reactivated, and routine chlorine level assessments together with microbiological analyses of water sources were initiated. Maternal-infant follow-up services, immunization programs, and tetanus prophylaxis were rapidly organized. A syndromic surveillance system was established to reduce the risk of communicable disease outbreaks, and active field investigation teams were deployed. Beginning in the second week, psychosocial support services were integrated into the response process. Mobile healthcare teams continued rural field screenings, while healthcare services were subsequently reorganized within container settlement areas during the later phases of recovery.

Coordinated public health interventions and primary healthcare organizations implemented during the early post-disaster period played a critical role in restoring healthcare services. The continuity of preventive healthcare, communicable disease control, and close monitoring of vulnerable populations remain essential components of effective disaster response and community health protection.

Keywords: Earthquake, Disaster Management, Public Health, Syndromic Surveillance

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4th International Congress of Multidisciplinary Medical and Health Sciences Studies

Quercetin Modulates Cardiac Biomarkers in Rats with High-Sucrose Diet-Induced Metabolic Syndrome

Ayça BİLGİNOĞLU TOPCU¹

Abstract

Metabolic syndrome is associated with insulin resistance, dyslipidemia, obesity, and increased cardiovascular risk. High-sucrose diets contribute to the development of metabolic disturbances and may lead to cardiac tissue injury through oxidative and metabolic stress. This study investigated the effects of quercetin, a flavonoid known for its antioxidant and cardioprotective properties, on metabolic parameters and cardiac biomarkers in rats with high-sucrose diet-induced metabolic syndrome.

Rats were divided into four groups: control (C), metabolic syndrome (MS), quercetin-treated (Q), and metabolic syndrome with quercetin treatment (MSQ). Body weight, blood glucose, insulin, triglyceride levels, and HOMA indices were evaluated to assess metabolic changes. In addition, serum creatine kinase (CK) and creatine kinase-MB (CK-MB) levels, together with cardiac tissue aspartate aminotransferase (AST) and lactate dehydrogenase (LDH) activities, were analyzed as indicators of cardiac injury.

The MS group showed significant increases in body weight, glucose, insulin resistance, triglycerides, CK, CK-MB, AST, and LDH levels compared with the control group, indicating metabolic dysfunction and cardiac tissue damage associated with metabolic syndrome. Quercetin treatment in the MSQ group attenuated many of these alterations by improving metabolic parameters and reducing cardiac injury markers. Although some parameters did not completely return to control levels, quercetin administration significantly alleviated the adverse effects of metabolic syndrome.

These findings suggest that quercetin exerts protective effects against metabolic and cardiac alterations associated with high-sucrose diet-induced metabolic syndrome and may have potential as a supportive therapeutic agent for reducing cardiovascular complications related to metabolic syndrome.

Keywords: Cardiac biomarkers; Cardioprotection; Metabolic syndrome; Quercetin

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Meryem ÜNAL¹

Kübranur BUCAKLI²

Evre YILMAZ³

Abstract

Rheumatoid arthritis is a chronic, systemic, and autoimmune inflammatory disease that primarily affects the synovial joints, as well as many other systems. It is characterized by joint pain, morning stiffness, swelling, and, in later stages, deformities. Its etiology involves the interaction of genetic, environmental, and immunological factors; smoking, obesity, and infections are significant risk factors. Diagnosis is based on clinical findings, laboratory tests (RF, anti-CCP), and imaging. Early diagnosis is crucial, and treatment involves DMARDs, biologics, and symptomatic therapies. RA reduces quality of life not only through physical effects but also psychosocially. Complications such as cardiovascular diseases, osteoporosis, and depression increase morbidity. Therefore, a multidisciplinary approach and nursing care are essential. This review aims to examine the definition, pathogenesis, risk factors, diagnostic and treatment approaches, and the effects on quality of life of RA in accordance with the current literature.

Keywords: Rheumatoid arthritis, quality of life, autoimmune diseases, joint pain, nu

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4thInternational Congress of Multidisciplinary Medical and Health Sciences Studies

Turkish Adaptation and Validation of the SARC-Global Sarcopenia Screening Tool

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Ash KILAVUZ⁴

Abstract

Sarcopenia is a major geriatric syndrome associated with functional decline, falls, frailty, disability, hospitalization, and mortality. Early identification of at-risk individuals is essential for timely intervention. SARC-Global is a recently developed multidimensional screening tool that integrates functional, demographic, clinical, and anthropometric indicators to identify older adults at risk of sarcopenia. This study aimed to adapt the SARC-Global into Turkish and evaluate its psychometric properties and diagnostic performance among older adults. This methodological cross-sectional study included 202 older adults attending the Geriatrics Outpatient Clinic of Ege University Faculty of Medicine. The Turkish adaptation included forward translation, back translation, expert review, and pilot testing. Sociodemographic, clinical, anthropometric, muscle strength, muscle mass, and physical performance data were collected. Sarcopenia status was determined according to the European Working Group on Sarcopenia in Older People 2 (EWGSOP2) criteria. Diagnostic performance was evaluated using sensitivity, specificity, predictive values, likelihood ratios, and overall accuracy. The mean age of participants was 73.37 ± 6.44 years, and 68.3% were women. According to EWGSOP2 criteria, 50.0% of participants were classified as having sarcopenia. SARC-Global identified 28.2% of participants as being at high risk for sarcopenia. The Turkish SARC-Global demonstrated a sensitivity of 55.45%, specificity of 99.01%, positive predictive value of 98.25%, negative predictive value of 68.97%, and an overall diagnostic accuracy of 77.23%. High-risk classification was significantly associated with age, functional limitations, body mass index, handgrip strength, mid-upper arm circumference, and calf circumference. The findings indicate that the Turkish version of SARC-Global is a feasible and clinically useful screening tool for identifying older adults at risk of sarcopenia. The instrument demonstrated high specificity and acceptable sensitivity against EWGSOP2 criteria. As the first Turkish cross-cultural adaptation and validation study of SARC-Global, it may provide a valuable resource for clinical practice and geriatric medical education.

Keywords: Sarcopenia, Geriatrics, SARC-Global, Validation, Geriatric Syndrome

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4thInternational Congress of Multidisciplinary Medical and Health Sciences Studies

Impact of Chronic Glycemic Status on Infarct-Related Artery Patency Before Primary PCI in ST Elevation Myocardial Infarction

Muhammet Cihat ÇELİK¹

Abstract

Early patency of the infarct-related artery (IRA) before primary percutaneous coronary intervention (pPCI) is associated with improved outcomes in patients with ST-segment elevation myocardial infarction (STEMI). Hemoglobin A1c (HbA1c) reflects long-term glycemic control, but its relationship with pre-procedural IRA patency remains unclear. This study aimed to investigate the association between admission HbA1c levels and IRA patency in STEMI patients undergoing pPCI.

This retrospective study included 140 consecutive STEMI patients who underwent pPCI within 12 hours of symptom onset. IRA patency was assessed angiographically using the Thrombolysis in Myocardial Infarction (TIMI) flow grading system. Patients with TIMI 2–3 flow were classified as having a patent IRA, whereas those with TIMI 0–1 flow were considered non-patent. Patients were categorized according to admission HbA1c levels: $\leq 5.6\%$, 5.6–6.5%, and $\geq 6.5\%$. Clinical, laboratory, and angiographic characteristics were compared between groups. Independent predictors of IRA patency were identified using multivariate logistic regression analysis.

Of the 140 patients, 46 (32.8%) had a patent IRA before pPCI. IRA patency rates were similar across HbA1c groups (26%, 31%, and 43%, respectively; $p=0.269$). Admission HbA1c levels did not differ significantly between patients with patent and non-patent IRA ($p=0.314$). Patients with non-patent IRA had higher smoking rates, higher LDL-cholesterol levels, and higher mean platelet volume (MPV) values. In multivariate analysis, MPV emerged as the only independent predictor of IRA patency (odds ratio 0.589, 95% confidence interval 0.365–0.951, $p=0.030$), whereas HbA1c was not independently associated with IRA patency.

Admission HbA1c level was not associated with pre-procedural IRA patency in STEMI patients undergoing pPCI. Mean platelet volume was independently associated with IRA patency and may serve as a simple and readily available marker for predicting coronary artery patency before intervention.

Keywords: ST-segment elevation myocardial infarction (STEMI); Hemoglobin A1c; Infarct-related artery patency; Primary percutaneous coronary intervention; Mean platelet volume

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4thInternational Congress of Multidisciplinary Medical and Health Sciences Studies

NPAP as a Robust Predictor of High Pulmonary Vascular Resistance in Advanced Heart Failure: Impact of LVAD Support on Biomarker Performance

Görkem YILDIZ¹

Abstract

Elevated pulmonary vascular resistance (PVR > 5 WU) is a critical hemodynamic parameter in advanced heart failure management, often serving as a significant contraindication for heart transplantation. The primary objective of this study was to determine the efficacy of the Neutrophil Percentage-to-Albumin Ratio (NPAP) in predicting invasively measured PVR in heart transplant candidates and to evaluate the impact of left ventricular assist device (LVAD) support on the diagnostic performance of biomarkers.

A total of 216 heart transplant candidates (with LVAD support, n= 64) were included in this retrospective cohort study. Patients were categorized into three risk groups based on PVR values: low (<2.5 WU), intermediate (2.5–5.0 WU), and high (>5.0 WU). The performance of the NPAP, Neutrophil-to-Lymphocyte Ratio (NLR), and NT-proBNP in detecting PVR tertiles was compared using multivariate ordinal regression models and ROC curve analysis.

As PVR increased, a significant decrease in BMI (p=0.004) and eGFR (p<0.001) was observed, whereas NLR, NPAP, and NT-proBNP levels increased (all p<0.001). In multivariate ordinal regression analysis, BMI, eGFR, and these biomarkers were all identified as independent predictors of higher PVR tertiles. In the total cohort, NLR (AUC: 0.796), NPAP (AUC: 0.764), and NT-proBNP (AUC: 0.752) demonstrated strong predictive capacity for high PVR (all p<0.001). Furthermore, adding NPAP to the NT-proBNP-based model significantly improved in AUC by 0.074 (p=0.003). However, subgroup analyses revealed that both NT-proBNP and NLR failed to reach statistical significance in the LVAD group (AUC: 0.488, p=0.892; AUC:0.640, p=0.051). In contrast, NPAP was the only biomarker that maintained strong performance and statistical significance in predicting high PVR among LVAD patients (AUC: 0.770, p<0.001).

NPAP is a cost-effective, accessible, and independent inflammatory indicator for detecting high PVR, especially when conventional parameters like NT-proBNP and NLR lose their clinical efficacy under LVAD support.

Keywords: Heart failure, Pulmonary vascular resistance, LVAD, NPAP, NLR.

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4thInternational Congress of Multidisciplinary Medical and Health Sciences Studies

Determinants of Excessive Healthcare Service Utilization

Hürriyet GÜRHAN¹

Sultan ŞİMŞEK²

Abstract

Overuse and unnecessary utilization of health services-defined as medical interventions that provide no clinical benefit or whose potential harms outweigh their benefits-represent one of the most critical challenges in contemporary health economics and policy. This phenomenon directly threatens the financial sustainability of health systems globally, increasing macro-level fiscal burdens while causing workforce inefficiencies and patient safety risks at the micro level. Individual health-seeking and consumption behaviors are not homogeneous; they reflect the dynamic interaction of socio-demographic characteristics, perceived health status, health literacy, and the technological and structural supply capacity of institutions. Objective: This study aims to examine the determinants of healthcare overutilization-a phenomenon that threatens both the financial sustainability and workforce efficiency of health systems-from a multidimensional perspective. To this end, the research applies Linear Mixed Models that simultaneously control for individual-level socio-demographic and medical characteristics alongside regional macro and structural supply variables.

Methods: A systematic review was conducted across PubMed, Scopus, Web of Science, CINAHL, Google Scholar, and TR Index databases using keywords related to overutilization, unnecessary service consumption, health-seeking behavior, workforce inefficiency, and health supply. Inclusion criteria required studies published between 2020 and 2025, written in Turkish or English, accessible in full text, and employing quantitative or econometric models-particularly mixed/multilevel models. Following deduplication of 540 identified records, 50 studies met all criteria and were included in the qualitative synthesis.

Results: Overutilization was most commonly measured via annual outpatient revisit rates, inappropriate procedure and laboratory test rates, unnecessary advanced imaging frequency, and green-coded emergency department visits. Mixed-effects models revealed that significant variance in overutilization stems from regional and institutional supply differences. Older age groups showed increased overutilization, with positive fixed-effect coefficients reported.

Conclusion: Socio-demographic factors, chronic disease burden, and perceptual variables play critical roles in overutilization. Populations with low health literacy were found to make repeat physician visits and directly access specialists without clinical necessity, contributing to excessive consumption.

Keywords: Overutilization, Health Services, Health Management, Health Systems, Health Literacy

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Use of Impacted Maxillary Canines for Autotransplantation and Autogenous Dentin Graft: A Case Report

Serkan SERT¹
Metehan KESKİN²

Abstract

Tooth autotransplantation is a surgically demanding procedure requiring preservation of the periodontal ligament (PDL), strict control of extraoral time, and accurate recipient site preparation to ensure favorable healing (Tan et al., 2023; Cremona et al., 2024). Although open-apex teeth demonstrate superior outcomes, mature teeth can achieve predictable survival when appropriate surgical and endodontic protocols are applied (Dokova et al., 2024). Transplantation into extraction sockets is well documented; however, reports describing transplantation into surgically prepared socketless sites remain limited.

A 23-year-old female patient presented with a completely bone-impacted tooth 13 associated with a dentigerous cyst, and a horizontally impacted tooth 23. During surgery, tooth 13 was extracted intact, and cyst enucleation was performed. Concurrently, extraoral root canal treatment was applied to tooth 13 by an endodontist. Tooth 23 was extracted via sectioning and processed using a graft grinder (KometaBio Inc., Cresskill, NJ, USA) to obtain an autogenous dentin graft. An artificial socket was prepared at the ideal arch position of tooth 23 using implant burs, and the endodontically treated tooth 13 was autotransplanted into this recipient site. The dentin graft was mixed with PRF (Platelet-Rich Fibrin) to form "stick bone," which was then grafted around the transplanted tooth and extraction sites. A collagen membrane was placed over the graft, and primary closure was achieved. The transplanted tooth was stabilized for 4 weeks using a semi-rigid wire splint.

At the 2-year follow-up, the transplanted tooth exhibited no mobility, a healthy periodontal ligament space, and no signs of ankylosis. The combination of autotransplantation and autogenous dentin grafting is a reliable, biological alternative for maintaining alveolar bone volume and achieving functional/aesthetic rehabilitation in cases of severely impacted teeth.

Keywords: Impacted canine, Tooth autotransplantation, Autogenous dentin graft.

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4thInternational Congress of Multidisciplinary Medical and Health Sciences Studies

Can the Special Needs Assessment Report Process Be a Gateway to the Healthcare System for Immigrant Children? An Evaluation from a Primary Care Perspective

Mesut SARI¹

Abstract

Immigrant and refugee children face disadvantages in accessing mental health services due to language barriers and cultural differences. This study aimed to evaluate the clinical profile and mental health service utilization patterns of immigrant children referred to a child psychiatry outpatient clinic for special needs assessment reports, compared with their peers who are citizens of the Republic of Türkiye. Cases for whom a special needs assessment report was issued at a university hospital child and adolescent psychiatry outpatient clinic were retrospectively reviewed. Immigrant/refugee cases (n=129) constituted the study group, while Turkish citizens served as the comparison group. Groups were compared in terms of sociodemographic characteristics, psychiatric diagnosis distribution, and service utilization indicators. Chi-square, Mann–Whitney U test, and logistic regression analyses were used. In the immigrant group, 57.4% were of Iraqi and 20.2% of Syrian origin. The mean age was 7.4±4.7 years, and 65.9% were male. The most common diagnosis was language/speech/communication disorders (21.2%), followed by intellectual disability (14.0%) and autism spectrum disorder (13.8%). The pre-report outpatient visit rate was significantly lower in the immigrant group than in the comparison group (34.9% vs. 47.4%; p=0.007). Logistic regression showed that immigrant status independently reduced the likelihood of a pre-report visit (OR=0.59; 95% CI: 0.41–0.86; p=0.006). No significant difference was found between groups in the post-report period (31.8% vs. 35.3%; p=0.470). Immigrant children have a significant disadvantage in accessing mental health services before the special needs assessment report process. However, once they enter the system through this process, their service utilization rates approach those of their citizen peers. The prominence of language/speech/communication disorders highlights the need for primary care awareness in distinguishing developmental delay from language barriers. Multilingual developmental screening tools and culturally sensitive referral mechanisms are recommended.

Keywords: Immigrant Children, Special Needs Assessment Report, Mental Health Services, Primary Care, Family Medicine

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Investigation Of The Cytotoxic Effect Of PLK1 Inhibitor GSK461364a On PC-3 Prostate Cancer Cells

*Mahmut Cihat KATMERLİKAYA¹
Mustafa ERGÜL²*

Abstract

Polo-like kinase 1 is a highly conserved serine/threonine kinase protein and has critical roles, particularly in the progression of the cell cycle and the regulation of checkpoints. This protein is overexpressed in rapidly dividing cells, such as cancer cells. In addition, PLK1 contributes to the survival of cancer cells by inhibiting the mechanism of apoptosis. Therefore, inhibition of this protein in cancer cells is considered a new treatment strategy. Furthermore, the presence of problems such as severe side effects experienced in current treatment approaches, resistance to treatment, and recurrence of the disease makes this new treatment strategy more important. This study aimed to investigate the cytotoxic and apoptotic effects of GSK461364A, a PLK1 inhibitor, in PC-3 prostate cancer cells. PC-3 cells were treated with graded concentrations of GSK461364A (40, 20, 10, 5, and 1 μ M) for 24 hours. The impact on cell viability was determined using the XTT assay. Furthermore, flow cytometry analysis was conducted to evaluate the apoptotic response induced by GSK461364A in PC-3 cells. Our results indicated that GSK461364A markedly reduced the viability of PC-3 cells when compared with untreated cells. The compound exhibited an IC_{50} value of 3.707 μ M after 24 hours of exposure. Flow cytometric analysis revealed a pronounced increase in late apoptotic and necrotic cell populations in the treated group ($28.45 \pm 1.97\%$ and $4.61 \pm 0.79\%$, respectively) relative to the control group ($3.49 \pm 0.71\%$ and $1.62 \pm 0.33\%$, respectively), with statistical significance ($p < 0.05$). Overall, these findings suggest that GSK461364A induces substantial cytotoxicity and apoptosis in PC-3 cells, highlighting its potential as a promising therapeutic agent for prostate cancer intervention.

Keywords: PLK1, Prostate cancer, Apoptosis, GSK461364A

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4th International Congress of Multidisciplinary Medical and Health Sciences Studies

Elongated Processus Styloideus and Eagle's Syndrome: Five Different Case Examples

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Abstract

The processus styloideus (PS) originates from the inferior surface of the petrous portion of the temporal bone and extends anteroinferiorly. Originating as part of the Reichert cartilage, which forms the second pharyngeal arch, this structure undergoes endochondral ossification from the late stages of intrauterine life until the age of ten. Eagle's Syndrome (ES) is a rare disease characterized by elongation of the PS and/or calcification of the styloid ligament. It is usually asymptomatic and diagnosed incidentally. However, in some patients, result in symptoms such as sore throat, dysphagia, earache, headache, and facial pain.

In this study, cervical Computed Tomography (CT) and/or cranial CT images from the Radiology Department archives of 5 patients who presented to Kahramanmaraş Sütçü İmam University Health Practice and Research Hospital with different complaints and were diagnosed with elongate PS (EPS) and ES were retrospectively examined. The radiological images and clinical characteristics of these patients are presented.

Four patients were female and one patient was male. In all patients, the PS was longer than 30 mm bilaterally. Only one of the cases had dysphagia. The other patients presented to our hospital with complaints related to another disease. One patient with dysphagia and odynophagia was diagnosed as ES, and the other four patients as EPS. This patient underwent styloidectomy surgery by the general surgery clinic. No surgery was performed on the other patients.

Approximately 2-4% of the population has a EPS. In the Turkish population, this rate has been determined as 8.8%. Very few of these people with EPS experience symptoms. ES is usually diagnosed with radiological imaging. Although bilateral EPS is common, it is rare for symptoms to be present on both sides. No correlation has been found between the size of the PS and the severity of symptoms. ES is an important rare disease and should be well known by clinicians. It should always be considered in the differential diagnosis of dysphagia and odynophagia.

Keywords: Eagle's syndrome, Processus styloideus, Computed tomography.

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4thInternational Congress of Multidisciplinary Medical and Health Sciences Studies

Use of Impacted Maxillary Canines for Autotransplantation and Autogenous Dentin Graft: A Case Report

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Abstract

Tooth autotransplantation is a surgically demanding procedure requiring preservation of the periodontal ligament (PDL), strict control of extraoral time, and accurate recipient site preparation to ensure favorable healing (Tan et al., 2023; Cremona et al., 2024). Although open-apex teeth demonstrate superior outcomes, mature teeth can achieve predictable survival when appropriate surgical and endodontic protocols are applied (Dokova et al., 2024). Transplantation into extraction sockets is well documented; however, reports describing transplantation into surgically prepared socketless sites remain limited.

A 23-year-old female patient presented with a completely bone-impacted tooth 13 associated with a dentigerous cyst, and a horizontally impacted tooth 23. During surgery, tooth 13 was extracted intact, and cyst enucleation was performed. Concurrently, extraoral root canal treatment was applied to tooth 13 by an endodontist. Tooth 23 was extracted via sectioning and processed using a graft grinder (KometaBio Inc., Cresskill, NJ, USA) to obtain an autogenous dentin graft. An artificial socket was prepared at the ideal arch position of tooth 23 using implant burs, and the endodontically treated tooth 13 was autotransplanted into this recipient site. The dentin graft was mixed with PRF (Platelet-Rich Fibrin) to form "stick bone," which was then grafted around the transplanted tooth and extraction sites. A collagen membrane was placed over the graft, and primary closure was achieved. The transplanted tooth was stabilized for 4 weeks using a semi-rigid wire splint.

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4th International Congress of Multidisciplinary Medical and Health Sciences Studies

Our Results In Interventional Treatment Of Above-The-Knee Peripheral Artery Disease: A Retrospective Study

Seyhan YILMAZ¹

Abstract

Objective: While the interventional treatment of lower extremity occlusive peripheral arterial disease initially relied solely on balloon angioplasty, stent implantation emerged to address insufficient dilatation, and significant recent advances have been reported in interventional modalities. This study aims to present the results of interventional treatments applied in occlusive iliofemoral and femoropopliteal arterial diseases in our hospital and to discuss them in light of the current literature.

Methods: This retrospective study was conducted in patients who underwent interventional treatment for chronic occlusive iliofemoral or femoropopliteal arterial disease. Patients who underwent emergency arterial thromboembolectomy, patients who received hybrid treatment, or patients whose study data could not be accessed were excluded from the study. The cases were analyzed in two groups: Group 1, patients who underwent interventional treatment of the iliofemoral arteries, and Group 2, patients who underwent interventional treatment of the femoropopliteal arteries.

Results: Of the 42 patients evaluated in the study, 38 were male, with a mean age of 63.02 ± 8.12 years. The demographic characteristics of the patients are shown in Table 1. No acute arterial thrombosis requiring treatment in the main arteries or flow-limiting arterial embolism was observed during the procedure. The mean Fontaine stage of the cases was 3.43 ± 0.67 . In the postoperative period, a pseudoaneurysm at the access site was observed in one patient.

Conclusion: Interventional treatment modalities in lower extremity occlusive arterial disease may vary depending on the location and characteristics of the lesion, and the results of this study support that, among the current treatment options for femoropopliteal artery disease, drug-coated balloon therapy should be the most frequently preferred method, whereas in more extensive iliofemoral arterial lesions, the primary stent implantation approach is more prominent.

Keywords: angioplasty, stenting, interventional treatment, peripheral artery disease

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4th International Congress of Multidisciplinary Medical and Health Sciences Studies

Role of Anatomy in Multidisciplinary Health Education

Mahmut YARDIMCI¹⁹⁹

Yıldırım ÇELİK²

Abstract

Anatomy forms the foundation of health sciences education and plays a crucial role in understanding clinical practices and developing professional skills. In medicine, veterinary medicine, dentistry, nursing, physiotherapy, and other health fields, anatomical knowledge is indispensable for students to develop clinical skills and acquire practical knowledge (Drake, Vogl & Mitchell, 2019). Anatomy education is considered not only a means of transmitting knowledge but also a learning environment that integrates with clinical sciences.

The multidisciplinary health education approach aims to bring together the knowledge and methods of different disciplines. In this context, anatomy education has a strong interaction with radiology, surgical sciences, biomedical engineering, simulation technologies, and educational sciences (Harden, 2000; Sugand, Abrahams & Khurana, 2010). This integration enables students not only to acquire theoretical knowledge but also to interpret anatomical information in a clinical context.

Dissection-based anatomy education is considered one of the most effective methods for learning three-dimensional anatomical structures. Dissection contributes to students' tactile learning experience and professional identity development (Aziz et al., 2002). However, technology-supported teaching methods are increasingly used in modern anatomy education. Three-dimensional modeling systems, virtual dissection applications, and virtual reality technologies stand out as alternative and complementary learning tools in anatomy teaching (Moro et al., 2017; Nicholson et al., 2006).

The integration of radiological imaging techniques into anatomy education is also increasing with the recent technological advancements, facilitating the correlation of basic anatomical knowledge with clinical applications. Thanks to methods such as computed tomography, magnetic resonance imaging, and ultrasonography, students can evaluate the counterparts of anatomical structures in living organisms and improve their clinical anatomy knowledge (Patel & Moxham, 2008; McNulty et al., 2009). This approach particularly supports the effective use of anatomical knowledge in clinical decision-making processes.

Simulation-based educational applications also hold an important place in multidisciplinary health education. Simulation environments provide a safe learning space where students are not at risk of making mistakes and contribute to the integration of anatomical knowledge with clinical skills (Barry Issenberg et al., 2005). Such applications provide significant gains in terms of patient safety and clinical competence.

In recent years, the use of radiological anatomy, three-dimensional modeling, and digital anatomy platforms has increased in veterinary anatomy education. These approaches facilitate the comparative learning of anatomical features of different species and strengthen the relationship between anatomy education and clinical veterinary practices.

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In conclusion, anatomy is a fundamental science at the heart of multidisciplinary health education. Supporting traditional anatomy teaching methods with modern educational technologies contributes to the development of both theoretical and clinical skills of students. Anatomy education should be approached from a multidisciplinary perspective, allowing healthcare professionals to receive a more holistic education and increasing the quality and reliability of healthcare services.

Keywords: Anatomy Education, Multidisciplinary Education, Health Sciences, Radiological Anatomy, Simulation, Dissection



4th International Congress of Multidisciplinary Medical and Health Sciences Studies

Role of Using Radiological Imaging in Dissection-Based Anatomy Education in Reducing Health Risks

Mahmut YARDIMCI²⁰⁰

Abstract

Anatomy education holds a fundamental place in the field of health sciences, and dissection-based applications enable the learning of anatomical structures in a three-dimensional and realistic manner (Drake, McBride, and Pawlina, 2014). However, preservative chemicals used in dissection laboratories, especially formaldehyde, biological materials, and sharp instruments, pose various health risks for students and instructors (Korf et al., 2008). Long-term formaldehyde exposure is reported to have adverse effects on the respiratory system, skin, and eyes, and sharp instrument injuries and biological risks constitute a significant problem in the dissection process (Akbar-Khanzadeh et al., 1994; Ohmichi et al., 2006). Therefore, supportive approaches that both enhance learning effectiveness and reduce health risks are needed in anatomy education. The aim of this study is to reveal the contribution of radiological imaging methods to the education process in dissection-based anatomy education and their role in reducing potential health risks.

In this study, magnetic resonance imaging and computed tomography images of cadavers used in anatomy education were examined. Radiological images were used to introduce anatomical structures before dissection, to ensure correlation between cross-sectional anatomy, and to more accurately and quickly identify target structures during dissection (Rizzolo and Stewart, 2006). The obtained radiological data were evaluated by comparing them with the anatomical findings observed during dissection. It was observed that radiological imaging methods contributed to a better understanding of anatomical structures and played a guiding role in the dissection process. The literature also reports that the integration of radiological images into anatomy education supports the learning process and facilitates students' learning of anatomy (Werner, 1974). It is considered that this approach shortens the dissection time, reduces unnecessary tissue manipulation, and consequently reduces the risk of formaldehyde exposure and sharp instrument injuries. In conclusion, the use of radiological imaging methods as a supportive tool in dissection-based anatomy education both improves the quality of education and contributes to reducing health risks encountered during dissection. It is believed that this approach will help create a safe, effective, and sustainable educational model in anatomy education.

Keywords: Anatomy education, Dissection, Radiological imaging, Health risks, Cross-sectional anatomy.

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