

22nd & 23rd April, 2025

18TH

UNDERGRADUATE MEDICAL
RESEARCH CONFERENCE



UNITED FOR HEALTH: RESEARCH,
POLICY AND PRACTICE

ABSTRACT BOOK'25

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Glimpses of 17th UMR Conference 2024



MESSAGE FROM THE DEAN



It is with great pride and immense pleasure that I extend my warmest welcome to all participants of the 18th International Undergraduate Medical Research Conference, taking place on April 22-23, 2025. This event highlights the invaluable contributions of our students, whose dedication to research and innovation is shaping the future of medical sciences.

The success of this conference is a testament to the passion and dedication of our undergraduates, who have not only conducted meaningful research but also played a crucial role in organizing this platform for learning and exchange. Their efforts inspire their peers and encourage a culture of research, collaboration, and academic excellence.

To all attendees, I encourage you to actively engage, ask questions, and share your insights. This is an opportunity to learn from one another, build connections, and contribute to the ever-evolving medical research landscape. Your participation today lays the foundation for future discoveries and advancements.

Wishing you all a successful and enriching experience.

Best regards,

Prof. Dr. Hafeez Ur Rahman
Dean Health Sciences
Peshawar Medical College

Glimpses of 17th UMR Conference 2024



MESSAGE FROM DIRECTOR UMR

It is an honor to welcome you to the 18th International Undergraduate Medical Research Conference, taking place on April 22-23, 2025. As the Director of the Undergraduate Medical Research Department, I take great pride in witnessing the dedication of our students who have invested their time and effort in meaningful research, now shared on this respected platform.

Research is not only a path to personal and academic growth but also a driving force behind community development and progress. By nurturing a culture of research and innovation, we empower future researchers to contribute meaningfully to society and advance the field of medicine. This conference is a testament to the commitment of undergraduate students to scientific research. Their interest in knowledge and exploration is inspiring, and it is heartwarming to see them not only contribute through research but also take charge of organizing this event through the Undergraduate Medical Research Society. Their hard work in managing logistics, planning programs, and creating this learning opportunity is admirable.

A sincere thank you to the brilliant students who have contributed, whether by conducting research or organizing this event, and to the administration for its constant support in promoting a culture of research and innovation.

I wish all participants a rewarding experience and hope this conference serves as a stepping stone toward a bright and successful future.

Allah Bless you all,

Dr. Hala Rajab
Director, Undergraduate Medical Research
Peshawar Medical College

Glimpses of 17th UMR Conference 2024



MESSAGE FORM THE PRESIDENT 18th UMR SOCIETY 2025



Let me take you back to 1928. Alexander Fleming's messy lab with scattered petri dishes, open notebooks, and a forgotten culture plate. In that chaos, a simple observation leads to the discovery of an antibiotic saving millions of lives. A reminder that the treatments we rely on today once began as unanswered questions, until curiosity turned them into cures and hypotheses grew into hope. From that breakthrough to the decoding of the human genome, every medical revolution has been built upon a single foundation we call research.

My journey with UMR, from being an eager participant to becoming the President, has been an incredible experience. As Pakistan's pioneer student-led medical research society, UMR continues to unite passionate minds across the nation. This year's theme, "United for Health: Research, Policy, and Practice," reflects our mission to unite future healthcare leaders in bridging these pillars and responding to the evolving needs of global health. As we turn the pages of this abstract book, we're witnessing not just research, but the vision and innovations leading us toward a healthier tomorrow.

To conclude, I would like to express my heartfelt thanks to our UMR Director and every brilliant team member. Your countless hours of effort have made this event possible with over 500 registrations truly reflects your dedication and hard work.

Wishing all the participants a productive and inspiring conference.

Mr. Hamza Farooq
President 18th UMR Society 2025

18th Undergraduate Medical Research Society 2025



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BASIC & CLINICAL SCIENCES

TUMOR-INFILTRATING LYMPHOCYTES, TUMOR STAGE, AND PD-L1 EXPRESSION IN COLORECTAL CARCINOMA

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INTRODUCTION:

Colorectal carcinoma (CRC) is a leading cause of cancer-related deaths worldwide. Tumor-infiltrating lymphocytes (TILs) play a dual role in CRC, promoting anti-tumor immunity but potentially being suppressed by immune evasion mechanisms. One such mechanism is PD-L1 expression, which inhibits T-cell function and facilitates tumor progression. This study explores the relationship between TILs, PD-L1 expression, and tumor stage in CRC.

OBJECTIVE(S):

1. To estimate the frequency of TILs and PD-L1 expression in CRC patients.
2. To analyze the association between TILs, PD-L1 expression, and tumor stage.

METHODOLOGY:

A cross-sectional study was conducted from June-December 2024 including patients that were diagnosed with colorectal carcinoma and underwent surgery. The sample size was 70 patients with complete clinical records with available archived tumor tissue samples from the Department of Pathology, Peshawar Medical College. Quantitative data were analyzed using SPSS v.25 for descriptive statistics and investigating the relationship among different variables.

RESULTS:

Among the 70 cases, 67.1% were males, and 32.9% were females, with a mean age of 52.20 ± 15.2 years. TIL levels were high in 32.9%, moderate in 45.7%, and low in 21.4% of cases. PD-L1 expression was positive in 62.5%. TIL levels showed no significant association with tumor stage ($p = 0.55$), whereas PD-L1 expression showed significant association ($p = 0.04$). Correlation analysis revealed a positive relationship between PD-L1 expression and tumor stage ($p = 0.033$).

CONCLUSION:

Study shows that TIL levels varied among cases, and their association with tumor stage was not statistically significant, while PD-L1 expression increased with tumor stage, and this relation was also statistically significant, suggesting its role in immune evasion and CRC progression.

KEYWORDS:

Tumor Infiltrating Lymphocytes (Tils), PD-L1 Expression, Colorectal Carcinoma

THE SYNERGISTIC EFFECTS OF BETAHISTINE THERAPY, EPLEY MANEUVER, AND LIFESTYLE MODIFICATIONS FOR EFFECTIVE MANAGEMENT OF MENIERE'S DISEASE: A CASE REPORT

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INTRODUCTION:

Meniere's disease is a chronic inner ear disorder characterized by recurrent vertigo, fluctuating sensorineural hearing loss, tinnitus, and ear fullness. Its etiology remains unclear and is often associated with endolymphatic hydrops.

OBJECTIVE(S):

1. To report a case of Meniere's disease in a 22-year-old female successfully managed through a combination of Betahistine therapy, vestibular rehabilitation, and lifestyle modifications.

METHODOLOGY:

The patient presented with frequent vertigo lasting several hours, accompanied by fluctuating hearing loss in the right ear, tinnitus, and nausea. Audiometry revealed low-frequency sensorineural hearing loss, and Weber and Rinne tests indicated sensorineural hearing loss in the affected ear. MRI excluded other causes, such as acoustic neuroma. The treatment plan included Betahistine, which helped reduce the intensity and frequency of vertigo attacks. The patient also underwent vestibular rehabilitation using the Epley maneuver, which further alleviated symptoms of dizziness. Lifestyle modifications, including a low-sodium diet, reduced caffeine intake, and stress management, were also incorporated.

RESULTS:

The patient experienced a significant reduction in vertigo episodes and stabilized hearing. However, persistent tinnitus remained, leading to the consideration of a hearing aid. This combined approach enhanced her quality of life.

CONCLUSION:

This case highlights the effectiveness of a multifaceted treatment approach, including pharmacological therapy, vestibular rehabilitation (Epley maneuver), and lifestyle modifications, in managing Meniere's disease and enhancing patient outcomes.

KEYWORDS:

Meniere's disease, Betahistine, Vestibular rehabilitation, Tinnitus, Vertigo

COMPARATIVE STUDY OF DRY EYE SYNDROME AFTER VARIOUS KERATOREFRACTIVE SURGERIES: A SYSTEMIC REVIEW AND META-ANALYSIS

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INTRODUCTION:

Dry eye syndrome (DES) is a common complication following refractive surgery, affecting patient comfort and visual outcomes. Given the emergence of new clinical trials, this study presents an updated meta-analysis incorporating recent data.

OBJECTIVE(S):

1. To evaluate the impact of different keratorefractive surgeries on dry eye parameters, including tear breakup time (TBUT), tear production (Schirmer test), and Ocular Surface Disease Index (OSDI) scores.

METHODOLOGY:

A systematic review and meta-analysis were conducted following PRISMA guidelines using data from PubMed, Embase, Web of Science, Cochrane Library, and MEDLINE. Seven studies (five RCTs and two clinical trials) comprising 496 eyes were included. A random-effects model was used to calculate standardized mean differences (SMD).

RESULTS:

Photorefractive Keratectomy (PRK) and Femtosecond lenticulate extraction (FLEX) significantly reduced TBUT (SMD = -1.93, $p < 0.001$ and SMD = -1.08, $p < 0.001$, respectively), while Laser assisted in situ keratomileusis (LASIK) and Small incision lenticulate extraction (SMILE) showed no significant impact. PRK also significantly decreased Schirmer test values (SMD = -2.06, $p < 0.001$), whereas other surgeries had nonsignificant effects. OSDI scores increased initially but improved at six- and twelve-months post-surgery. Variability in results was attributed to differences in surgical techniques, postoperative care, and demographic factors.

CONCLUSION:

PRK and FLEX surgeries are associated with more severe dry eye symptoms compared to LASIK and SMILE. The findings highlight the need for preoperative assessment and postoperative management of DES. Future research should focus on refining surgical techniques and personalized treatment approaches to enhance patient satisfaction and visual outcomes.

KEYWORDS:

Keratorefractive Surgery, Dry Eye Syndrome, PRK, LASIK, SMILE, Meta-Analysis.

MANAGEMENT OF ACUTE ABDOMINAL PAIN WITH STENOTROPHOMONAS INFECTION: A CASE REPORT HIGHLIGHTING DIAGNOSTIC CHALLENGES AND TREATMENT STRATEGIES

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INTRODUCTION:

This case report investigates the management of acute abdominal pain in a 16-year-old male with a stenotrophomonas infection, illustrating diagnostic complexities and treatment modalities. Initially presenting symptoms suggestive of enteric fever and appendicitis, the patient exhibited lower abdominal pain, vomiting, fever, and constipation. Stenotrophomonas is a gram-negative, non-fermentative aerobic bacillus. It was previously classified within the Pseudomonas genus but has since been reclassified and has its genus.

CASE PRESENTATION:

A 16-year-old male patient presented to Shifa International Hospitals Ltd. with complaints of lower abdominal pain, 2–3 episodes of non-bilious vomiting, bouts of undocumented fever, and a 24-hour history of constipation. The patient was suspected of having enteric fever and appendicitis and was started on intravenous antibiotics, analgesics, and supportive treatment. The patient had leukocytosis (WBC: 16,480/ μ L) and increased inflammatory markers (CRP: 281.76 mg/L, ESR: 52 mm/hour). Hematological values (platelets: 189,000/ μ L, hemoglobin: 17.1 g/dL, and RBC: 5.16 m/ μ L) were all within normal ranges. Liver function tests revealed no major hepatic impairment, with modestly raised AST (41 U/L) and normal ALT (21 U/L), alkaline phosphatase (80 U/L), gamma GT (10 U/L), total bilirubin (1.29 mg/dL), and LDH (188 U/L).

CONCLUSION:

This case highlights the imperative of prompt identification and tailored intervention for Stenotrophomonas infections in individuals manifesting acute abdominal pain. Enhanced research endeavors and heightened vigilance are necessary to combat the escalating prevalence of multidrug-resistant nosocomial pathogens, ultimately augmenting patient prognoses and healthcare efficacy.

KEYWORDS:

Acute abdominal pain, Enteric fever, Stenotrophomonas infection, Challenges, Treatment strategies.

ASSOCIATION OF DIABETIC CONTROL AND DURATION WITH SEVERITY OF SENSORINEURAL HEARING LOSS IN TYPE 2 DIABETES MELLITUS

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INTRODUCTION:

Pakistan has the world's highest adult diabetes prevalence and a significant burden of hearing loss. While evidence links diabetes to SNHL, deficient patient history and confounders like pregnancy, smoking, noise exposure, and glycemic control complicate interpretation. This study addresses deficient local data, reduces confounding, and emphasizes the need for routine hearing screening in diabetics.

OBJECTIVE(S):

1. Measure the prevalence of SNHL in diabetics
2. Assess the impact of diabetes duration, control, and associated factors on SNHL severity

METHODOLOGY:

This cross-sectional study in Khyber Teaching Hospital (Feb–Aug 2024) included Type 2 DM patients (≥ 1 year history) of all ages. Exclusion criteria: deficient history, pregnancy, ear surgery/trauma, conductive/mixed hearing loss, ototoxic drugs, smoking, sudden SNHL, and noise exposure. Patients underwent ENT exams, PTA, and HbA1c measurements. SPSS v26.0 was used for descriptive and inferential analysis: Chi-squared and Spearman rank correlation, followed by Wilcoxon tests (Bonferroni-corrected); significance was set at $p < 0.05$.

RESULTS:

233 patients (138 males and 95 females), aged 20–87 years were included. SNHL presence was not gender related. Hearing impairment was absent in 37, slight in 156, and moderate in 40 patients. HbA1c was $< 6.5\%$ in 71, $6.5\text{--}7.9\%$ in 130, and $\geq 8\%$ in 32 patients. HL increased significantly with age, DM duration, and poorer diabetic control. Age correlated with SNHL only in those ≥ 51 years, while DM severity was linked to SNHL in all ages. Higher frequencies showed greater HL.

CONCLUSION:

Poorer diabetic control and more prolonged duration worsen SNHL, especially at higher frequencies, and independent of age in ≤ 50 years old.

KEYWORDS:

Diabetes Mellitus, Sensorineural Hearing Loss, HbA1c, Pure Tone Audiometry

CATHETER-ASSOCIATED URINARY TRACT INFECTIONS: AWARENESS AND PRACTICES AMONG NURSES OF PESHAWAR

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INTRODUCTION:

Catheter-associated urinary Tract Infection (CAUTI) occurs when infectious agents enter the urinary tract through urinary catheters. Ensuring that nurses are well-informed and vigilant in their practices is fundamental to improving patient outcomes and reducing the incidence of CAUTI.

OBJECTIVE(S):

1. To determine the knowledge of CAUTI, and adherence to CAUTI prevention protocols.
2. To compare the knowledge and adherence among Public & Private Hospital Nurses.

METHODOLOGY:

A cross-sectional study was conducted on 187 nurses in private and public hospitals of Peshawar using serial sampling, from 1st June 2024 to 1st February 2025. A structured pre-validated questionnaire was used for data collection. The data was analyzed using SPSS Version 25.0. Frequency and percentages were calculated for knowledge, attitude, and adherence. However, inferential statistics were calculated through Chi-Square, with a significant p-value of 0.05 for the association of knowledge with adherence.

RESULTS:

The nurses of the private hospitals were more knowledgeable ($n = 80.2$; 93.24%) in CAUTI with a significant difference (p value = 0.001) regarding the awareness of urinary catheter types. The nurses of the public sector were more adherent ($n = 84.4$; 83.61%) to CAUTI prevention protocols with a significant difference in the use of lubricant during catheter insertion (p value = 0.003). The public hospital nurses were significantly adherent to best practices in preventing CAUTI in obstructed urinary catheters (p value = 0.004), however, nurses of the private hospitals were practicing significantly (p value = 0.012) in antimicrobial prophylaxis for long-term catheterization.

CONCLUSION:

The nurses of the private hospitals were more knowledgeable about CAUTI; however, public hospital nurses were more adherent to CAUTI prevention protocols.

KEYWORDS:

CAUTI, Catheter, Urinary Tract Infections, Knowledge. Practice, Nurses.

A RETROSPECTIVE STUDY ON MUCORMYCOSIS IN THE ERA OF COVID-19: A LOOMING FUNGAL THREAT AND ITS IMPLICATIONS FOR HEALTHCARE

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INTRODUCTION:

The COVID-19 pandemic has been associated with a surge in mucormycosis, a rare yet life-threatening fungal infection. This study investigates the clinical characteristics, disease extent, management strategies, and outcomes of rhino-orbital-cerebral mucormycosis (ROCM) in COVID-19-affected patients. It emphasizes the need for early diagnosis, aggressive surgical intervention, and long-term follow-up to improve survival rates.

OBJECTIVE(S):

1. To evaluate the clinical presentation, risk factors — including diabetes mellitus and corticosteroid use and outcomes of ROCM in post-COVID-19 patients.

METHODOLOGY:

A retrospective analysis of 68 patients with ROCM treated at Saidu Group of Teaching Hospital Swat between January 2021 and August 2024 was performed. Data on demographics, comorbidities, COVID-19 history, clinical signs, disease extent, surgical procedures, and outcomes were analyzed by calculating the frequency by percentages.

RESULTS:

Among 68 patients, 61% were male, aged 35-73 years. Type 2 diabetes mellitus (91.17%) and a positive COVID-19 history (88.3%) were the most common risk factors. Presentations included hemifacial pain, orbital involvement, and vision loss, with extensive sinus, orbital, and intracranial disease. All patients underwent surgical debridement, primarily via the modified endoscopic Denker's approach (88.23%). The mortality rate was 32.3%, while 62% achieved disease-free status.

CONCLUSION:

ROCM is a severe, often fatal, complication in post-COVID-19 patients, particularly those with diabetes. Timely diagnosis, aggressive surgical management, and vigilant follow-up are crucial for improving patient outcomes.

KEYWORDS:

Mucormycosis, Covid-19, Fungal Infection, Diabetes, Corticosteroids, Rhino-Orbital-Cerebral Mucormycosis, Sars-Cov-2.

CHRONIC TRAUMATIC AORTO-VENTRICULAR FISTULA BETWEEN THE RIGHT SINUS OF VALSALVA AND RIGHT VENTRICULAR OUTFLOW TRACT FOLLOWING A STAB INJURY: A CASE REPORT AND LITERATURE REVIEW

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INTRODUCTION:

An aorto-cameral fistula (ACF) is an abnormal connection between the aorta and a cardiac chamber. It can arise from various causes, including ruptured sinus of Valsalva aneurysms, infective endocarditis, trauma, aortic dissection, or procedural complications. The presentation of ACF varies, with small fistulas often remaining asymptomatic initially but potentially progressing to significant cardiac dysfunction.

OBJECTIVE(S):

To describe a rare presentation of chronic traumatic aorto-ventricular fistula resulting from a stab injury, to highlight the importance of advanced imaging modalities in the timely diagnosis of complex cardiac anomalies.

CASE PRESENTATION:

A 17-year-old female presented with exertional dyspnea (NYHA II) and fatigue for one year. She had a history of emergency thoracotomy at age eight for a stab wound with cardiac tamponade. Examination revealed tachycardia (115 bpm) but normal blood pressure and respiratory rate. ECG showed T-wave inversions, while TTE identified an 8 mm sinus of Valsalva-to-right ventricle fistula with continuous flow and a 60-mmHg diastolic gradient. Cardiac CT confirmed a chronic sinus rupture with normal coronaries.

RESULT:

The patient underwent surgical repair under cardiopulmonary bypass. Aorto-right ventricular outflow tract communication was repaired using 5-0 Prolene sutures. Intraoperative echocardiography confirmed successful closure without residual fistula or valve incompetence. She recovered uneventfully and was discharged on postoperative day four with scheduled follow-up.

CONCLUSION:

ACF diagnosis requires advanced imaging and timely intervention to prevent cardiac failure and fatal complications. Larger fistulas necessitate surgical repair for optimal outcomes.

KEYWORDS:

Aorto-cameral fistula, RVOT, Aorta, Transverse Aortotomy, Stab Wound Injury, Anterior Thoracotomy.

OPHTHALMOMYIASIS: A NEGLECTED TROPICAL DISEASE - FIRST REPORT OF INDIGENOUS CASES FROM KHYBER PAKHTUNKHWA, PAKISTAN

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INTRODUCTION:

Ophthalmomyiasis is an eye infestation with a fly larva, which is further classified as external ophthalmomyiasis, internal ophthalmomyiasis, and orbital ophthalmomyiasis. *Oestrus ovis* is considered the most common causative agent of human ophthalmomyiasis worldwide.

It is mostly seen in rural workers but can also occur in urban areas and those without animal contact. Risk factors include poor ocular and general health, old age, and malnutrition.

CASE PRESENTATION:

Herein, we describe two cases of external ophthalmomyiasis. In the first case, a 40-year-old male presented with complaints of itchiness, foreign body sensation, watery discharge, and photophobia. He had a 1-day history of a winged insect striking his right eye, for which he sought medical care, but his symptoms persisted. On re-examination, a larva was seen crawling on the upper tarsal conjunctiva, which was removed with forceps under local anesthesia.

Another case is of a 5-year-old girl who presented with complaints mimicking conjunctivitis after being hit by a winged insect a few days back. Multiple larvae were found on examination under anesthesia and were carefully removed using forceps.

CONCLUSION:

Ophthalmomyiasis should be included in the differential diagnosis if a patient presents conjunctivitis symptoms, especially those with a history of recent rural travel or fly contact around the eyes.

KEYWORDS:

Ophthalmomyiasis, *Oestrus Ovis*, Photophobia, Conjunctivitis

FUNCTIONAL OUTCOMES OF SURGERY IN NON-WALKER PATIENTS OF OSTEOGENESIS IMPERFECTA AT TERTIARY CARE HOSPITAL IN PESHAWAR

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INTRODUCTION:

Osteogenesis Imperfecta (OI) is a genetically transmitted disease, results in decreased or defective collagen type 1 production. 13 types of OIs exist, all managed with a multidisciplinary approach. These patients become immobile due to repeated fractures or deformities of long bones in the lower limbs. Orthopedic treatment involves stabilizing these bones with various intramedullary devices.

OBJECTIVE(S):

1. To study the functional outcome of surgery using stainless steel rush nails in non-walker patients of OI.
2. To study the complications and revision rates associated with this procedure.

METHODOLOGY:

A retrospective cross-sectional study, conducted at the orthopedic department of Prime Teaching Hospital from June 2024 until February 2025, included patients' data enrolled from June 2020 to December 2023. Patients meeting the inclusion criteria were enrolled. Functional outcomes were studied according to the modified Bleck criteria. Data was analysed using SPSS by calculating the frequency of patients associated with the surgery.

RESULTS:

Out of 52 patients, 45 were included, of which 26 were males and 19 were females. 41 patients presented with femoral deformities and fractures, and 29 with tibial deformities or fractures. 41 patients were mobilized post-surgery, while 4 required a wheelchair. 7 patients underwent revision surgery. None of the patients developed major complications.

CONCLUSION:

Treating lower limb fractures and deformities in OI patients with rush nails provides excellent results. They are cheap and readily available. The complications are few, and revision is easy.

KEYWORDS:

Osteogenesis Imperfecta (OI), Modified Sofield-Millar Procedure, Osteotomy, Rush Nail

EXPLORING KNOWLEDGE, ATTITUDE, AND PRACTICES OF HEALTH CARE PROVIDERS REGARDING SURGICAL MANAGEMENT OF HEMOPHILIA IN PESHAWAR: A QUALITATIVE STUDY

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INTRODUCTION:

Hemophilia is an X-linked inherited bleeding condition with the absence or deficiency of factor VIII in hemophilia A and factor IX in hemophilia B. Being an X-linked recessive disorder it mainly affects males. Hemophilia complications include musculoskeletal problems, transfusion-related infections, and inhibitor formation.

OBJECTIVE(S):

1. To explore healthcare providers' knowledge, attitudes, and practices regarding surgical management of Hemophilia in Peshawar.

METHODOLOGY:

This was a qualitative phenomenological study based on in-depth interviews (IDIs) with 15 surgeons from various specialties at three major hospitals in Peshawar, Pakistan. Convenient purposive sampling Technique was adopted during March 2023 to March 2024, and the saturation of the data determined the sample. Data collected was then thematically analyzed after identifying various themes and subthemes. The total duration of the study was 12 months.

RESULTS:

The study found that most participants had a basic understanding of hemophilia and supported the development of local protocols to improve care. Despite lacking protocols in hospitals, multiple disciplinary teams are arranged, and preoperative lab tests are done. FFPS and factor concentrates are administered preoperatively and postoperatively to ensure minimal blood loss. During surgery, hemostasis effectiveness is monitored.

CONCLUSION:

Participants have a basic understanding of hemophilia but are unaware of its prevalence and protocols. They support local guidelines and psychological assessments before surgery. The study recommends healthcare providers develop standard protocols and educate practitioners.

KEYWORDS:

Knowledge, Attitude, Practice, Surgical Protocols, Hemophilia, Bleeding Disorder

MATERNAL ANEMIA AND ITS IMPACT ON PERINATAL OUTCOMES: A CROSS-SECTIONAL STUDY IN KARACHI, PAKISTAN

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INTRODUCTION:

Maternal anemia is a major public health concern, particularly in low- and middle-income countries. It is associated with adverse perinatal outcomes, affecting both mothers and infants.

OBJECTIVE(S):

1. To determine the frequency and risk factors of maternal anemia and assess its impact on perinatal outcomes among pregnant women in Karachi.

METHODOLOGY:

A cross-sectional study was conducted from August 2023 to November 2024 at public and private healthcare facilities in Karachi. Data was collected via non-probability sampling using a validated questionnaire. Key variables included hemoglobin levels, supplementation intake, gestational age, preterm delivery, low birth weight, intrauterine growth restriction, APGAR scores, and fetal outcomes. Data was analyzed using SPSS version 24 to measure frequencies in percentages.

RESULTS:

Among 360 participants, 98.6% had singleton pregnancies. The mean age was 28 ± 4.8 years, and the mean hemoglobin was 10 ± 1.74 mg/dl. Preterm delivery was observed in 15.8% of cases, while 22.2% had low birth weight. Intrauterine growth restriction occurred in 6.9%, and 2.8% had perinatal mortality. APGAR scores <5 at 1 minute were recorded in 10% of newborns, and 6.7% had scores <7 at 5 minutes.

CONCLUSION:

Maternal anemia is strongly associated with adverse perinatal outcomes. Early screening and intervention are essential to reduce neonatal morbidity and mortality.

KEYWORDS:

Maternal anemia, Preterm delivery, Low birth weight, Karachi

URINARY BLADDER CANCER RISK FACTORS: A MATCHED CASE-CONTROL STUDY

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Peshawar Medical College

INTRODUCTION:

Bladder cancer is the 9th most common worldwide cancer, with high incidence and mortality rates. Pakistan ranks tenth with a 3.4% incidence and 2.1% mortality rate.

OBJECTIVE(S):

1. To identify and compare risk factors for urinary bladder carcinoma among the cases and controls.

METHODOLOGY:

A matched case-control study was conducted at 3 Tertiary Care Hospitals in Peshawar from September 2024 to February 2025. The sample size was 288, with 144 cases and 144 healthy controls with 95% confidence level, 80% power, and an Odds Ratio of 2, through serial sampling. The urinary bladder cancer cases presented to the outpatient department of Uro-Oncology admitted diagnosed patients, and follow-up cases for treatment were included. However, age and gender-matched controls from the same hospitals with no history of malignancy, visiting for any other ailment, patient's attendants, and the ones not interested were excluded. Odds ratios were calculated for the risk factors and Chi-Square for the association.

RESULTS:

The males were primarily concentrated in the 44–56 age group, with higher education. Among the significant risk factors, earnings, lifestyle, smoking, number of cigarettes per day, ongoing treatment, and Sehat Card users showed strong associations. However, fluid intake, overall health, family support, tea, and fast food were found to be non-significant. The odds ratio > 1 proved a strong association with urban living, traveling, family history, and smoking among males only.

CONCLUSION:

The study concluded strong associations for lifestyle, smoking, number of cigarettes, and duration of smoking among the males as the vulnerable gender.

KEYWORDS:

Bladder Cancer, Case-Control, Risk Factor, Odds Ratio, Malignancy

ASSOCIATION OF SERUM VITAMIN D WITH GLYCOSYLATED HEMOGLOBIN LEVELS AND DURATION OF DISEASE IN TYPE-II DIABETES MELLITUS PATIENTS

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INTRODUCTION:

Type-II Diabetes mellitus (DM) has been reported to be the most widely spread epidemic throughout the world in this century. World Health Organization (WHO) projections reveal that the number of patients suffering from diabetes will escalate to 366 million in 2030.

OBJECTIVE(S):

1. To find a possible association between levels of vitamin D and glycosylated hemoglobin levels in patients with type II diabetes mellitus.

METHODOLOGY:

A cross-sectional study was conducted over six months at a tertiary care hospital in Peshawar. Diagnosed cases of Type-II diabetes mellitus were recruited through non-probability consecutive sampling. The levels of glycosylated hemoglobin and serum vitamin D were assessed in 219 selected patients enrolled in the study through Cobas Integra 800 and Enzyme-Linked Immunosorbent Assay, respectively. Patients were divided into three categories based on increasing levels of glycosylated hemoglobin. The trend in the levels of vitamin D in these categories of increasing HbA1c was identified.

RESULTS:

Out of 219 Type II diabetic patients, 30.1% (66) were men while 69.9% (153) were women. The mean age was 59.48 ± 9.29 years. Similarly, HbA1c and serum vitamin D were 9.47 ± 2.88 and 18.63 ± 16.54 , respectively. Overall, 59% of the patients were Vitamin D deficient. The decrease in Vitamin D levels was associated with an increase in glycosylated hemoglobin levels (p-value 0.002).

CONCLUSION:

Vitamin D deficiency in Type-II diabetes mellitus patients increases with increasing levels of glycosylated hemoglobin.

KEYWORDS:

Diabetes Mellitus, Type-II Diabetes, HbA1c, Vitamin D

BIOFABRICATION, PHYSICOCHEMICAL PROPERTIES, AND ANTIMICROBIAL ACTIVITIES OF GREEN SYNTHESIZED MONO-, BI-, AND TRI-METALLIC NANOPARTICLES AGAINST MULTI-DRUG-RESISTANT MICROBES

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INTRODUCTION:

Nanoparticles (NPs) have gained significant attention for their biomedical applications, particularly in combating multi-drug-resistant (MDR) microorganisms. Green synthesis offers an eco-friendly approach to fabricating NPs using biological agents such as plant extracts and microbial cells. This review evaluates the synthesis, physicochemical properties, and antimicrobial potential of monometallic, bimetallic, and trimetallic nanoparticles.

OBJECTIVE(S):

1. To investigate the bio-fabrication of nanoparticles through green synthesis.
2. To assess the physicochemical properties and antimicrobial activities of mono-, bi-, and tri-metallic nanoparticles.
3. To examine their effectiveness against MDR microorganisms and their role in enhancing antimicrobial and anti-biofilm activities.

METHODOLOGY:

A systematic review was conducted using databases like PubMed, Scopus, and Web of Science. Keywords included “green synthesis,” “nanoparticles,” “antibacterial activity,” and “multi-drug resistance.” Studies focusing on biologically synthesized nanoparticles and their biomedical applications were selected based on their relevance to synthesis methods, morphology, stability, and antimicrobial potential.

RESULTS:

Mono-metallic NPs, synthesized using biological agents, exhibit antibacterial, anticancer, and antioxidant properties but face challenges in stability. Bi-metallic NPs enhance antibiotic activity by 50–80% against MDR pathogens due to synergistic metal interactions. Tri-metallic NPs, though less studied, demonstrate superior antimicrobial efficacy, making them promising candidates for infection control.

CONCLUSION:

Green-synthesized NPs, particularly bi- and tri-metallic types, exhibit enhanced antimicrobial activity against MDR pathogens. Future research should focus on optimizing tri-metallic NP synthesis and elucidating their pathogen eradication mechanisms to maximize biomedical applications.

KEYWORDS:

Green Synthesis, Nanoparticles, Antibacterial Activity.

EFFICACY AND SAFETY OF DIRECT ORAL ANTICOAGULANTS VERSUS WARFARIN IN PATIENTS WITH ATRIAL FIBRILLATION AND LIVER DISEASE: AN UPDATED SYSTEMATIC REVIEW AND META-ANALYSIS

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INTRODUCTION:

The efficacy and safety of direct oral anticoagulants (DOAC) compared to warfarin in patients with atrial fibrillation (AFib) and liver disease have been examined in previous meta-analyses, recent studies, and emerging data necessitating a re-evaluation of the topic. Therefore, we conducted an updated meta-analysis to incorporate the latest evidence and provide a more comprehensive understanding of the literature.

OBJECTIVE(S):

1. To assess the safety and efficacy of DOAC vs warfarin in patients diagnosed with AFib and liver disease.

METHODOLOGY:

Following PRISMA guidelines, this meta-analysis is registered with PROSPERO (2024 CRD42024584964). A detailed search up to August 2024 was conducted for the studies comparing DOAC with warfarin. The quality of the observational studies was evaluated using the Risk of Bias in Non-randomized Studies of Interventions (ROBINS-1) tool.

RESULTS:

This meta-analysis included 53,224 participants with AFib and liver disease. The use of DOAC, in comparison to warfarin, was significantly linked to a lower risk of all-cause mortality (HR=0.77; 95%CI: 0.60–0.98; $p=0.04$) and a decreased occurrence of intracranial hemorrhage (HR=0.49; 95%CI: 0.40–0.59; $p<0.00001$). However, other outcomes did not demonstrate statistically significant differences.

CONCLUSION:

Recent studies indicate that DOAC is at least non-inferior to warfarin concerning the efficacy and safety of patients with AFib and liver disease.

KEYWORDS:

Direct Oral Anticoagulants (DOAC), Atrial Fibrillation (AFib), Liver Disease, Warfarin, Safety and Efficacy.

UNUSUAL CASE OF PRADER-WILLI SYNDROME WITH OBESITY HYPOVENTILATION SYNDROME AND NORMAL PITUITARY FUNCTIONING

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INTRODUCTION:

Prader-Willi Syndrome (PWS) is a rare genetic disorder caused by abnormalities in chromosome 15q11.2-q13. It is characterized by obesity, hypotonia, hyperphagia, developmental delays, and endocrine abnormalities.

OBJECTIVE(S):

This report aims to portray a rare case of Prader Willi Syndrome so that these unique clinical presentations are taken into consideration while diagnosing and managing such cases.

This report aims to make people aware of multiple presentations of the same syndrome.

METHODOLOGY:

Patient was diagnosed with Prader Willi Syndrome via FISH test. Sleep study and multiple echocardiograms were done to confirm obesity hypoventilation syndrome and right ventricular hypertrophy secondary to PAH (catheterization test was not performed to confirm PAH). MRI brain and hormonal tests were done to assess pituitary gland function.

RESULTS:

A patient from Afghanistan was diagnosed with PWS at Khyber Teaching Hospital, Peshawar. He presented with fever, shortness of breath, and generalized body swelling. Clinical findings included type 2 respiratory failure, right ventricular hypertrophy secondary to pulmonary hypertension (unconfirmed by catheterization), and obesity hypoventilation syndrome (AHI = 7.7). Despite typical PWS features, the patient had normal pituitary function, as confirmed by MRI and hormonal tests. In most cases of PWS the major cause of obesity is pituitary hormonal imbalance.

CONCLUSION:

This case highlights the atypical presentation of PWS, emphasizing the need for personalized diagnosis and treatment approaches. Normal pituitary function in a PWS patient is rare, indicating variability in clinical expression despite genetic similarity.

KEYWORD(S):

Prader-Willi Syndrome, Obesity Hypoventilation, Pulmonary Hypertension, Endocrine Dysfunction

ANEMIA PREDICTION USING GENE EXPRESSION PROGRAMMING (GEP) AND EXPLAINABLE ARTIFICIAL INTELLIGENCE APPROACHES

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INTRODUCTION:

Anemia is a widespread global health disease that requires accurate and effective diagnostic systems.

OBJECTIVE(S):

To develop a machine learning-based approach, namely, gene expression programming (GEP), using explainable artificial intelligence techniques to predict anemia and improve the interpretability of the model.

METHODOLOGY:

A public dataset from Kaggle was used, which included 1,421 medical records with attributes such as gender, hemoglobin level, mean corpuscular hemoglobin (MCH), mean corpuscular hemoglobin concentration (MCHC), and mean corpuscular volume (MCV). The study used GEP for classification and optimized the performance through hyperparameter tuning. Explainable AI methods, Local Interpretable Model Agnostic Explanations (LIME) and, Shapley Additive Explanations (SHAP) were used to explain the decisions of the model. Performance metrics such as accuracy, sensitivity, specificity, and Matthews Correlation Coefficient (MCC) were evaluated.

RESULTS:

The GEP model achieved an accuracy of 99.30%, outperforming traditional diagnostic methods. Studies have found that hemoglobin level and gender are the most influential factors in predicting anemia. SHAP analysis found that lower hemoglobin levels increase the likelihood of anemia, while LIME reported that gender is a significant predictor. The model has high sensitivity (98.79%) and specificity (100%), confirming its reliability.

CONCLUSION:

This study highlights the effectiveness of machine learning-based anemia classification approaches. The integration of GEP with explainable AI ensures model transparency and makes it a viable tool for clinical decision-making. Future studies should include larger and more diverse datasets and additional biomarkers to improve generalizability.

KEYWORDS:

Anemia, Gene Expression Programming, Machine Learning, Explainable AI, SHAP, LIME

AGE OF PRESENTATION OF JAUNDICE IN G6PD DEFICIENT NEONATES: A CROSS-SECTIONAL STUDY AT A HOSPITAL IN PESHAWAR

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INTRODUCTION:

Glucose-6-phosphate dehydrogenase deficiency (G6PD) deficiency is an inherited disorder that weakens RBC defense against oxidative stress, causing hemolysis and neonatal jaundice. It is a leading cause of hyperbilirubinemia, kernicterus, and mortality. In Pakistan, jaundice affects two-thirds of newborns, with G6PD deficiency as the second most common cause of hemolytic anemia. Males and homozygous females are more affected, especially in Asian populations.

OBJECTIVE(S):

1. To determine the age of jaundice onset in G6PD-deficient neonates.
2. To assess the severity of hyperbilirubinemia in affected neonates.

METHODOLOGY:

This cross-sectional study examined 292 jaundiced neonates (0-28 days) at HMC, Peshawar (Jan-Dec 2023) using non-probability convenience sampling. Serum bilirubin, blood groups, and G6PD decolorization time were measured, with G6PD deficiency diagnosed using the Sigma Diagnostic reagent test. Data analysis included descriptive statistics, frequency analysis, and the chi-square test using SPSS v27.

RESULTS:

Among 292 neonates, 211 (72.5%) were male and 81 (27.5%) females, with 94% aged 0-10 days. G6PD deficiency was found in 41 (14%) cases. Jaundice appeared most in 3 days (28.1%), followed by 4 days (24%) and 2 days (22%). Serum bilirubin ranged from 6.80 to 43.10 mg/dL (mean 18.27 ± 7.04 mg/dL). Serum bilirubin levels ranged from 6.80 to 43.10 mg/dL (mean 18.27 ± 7.04 mg/dL), showing variability from mild to severe cases.

CONCLUSION:

Jaundice in G6PD-deficient neonates most commonly appears between 2-4 days, with peak occurrence at 3 days (28.1%), indicating early onset and the need for prompt monitoring. Early screening and timely management are crucial to prevent complications like kernicterus.

KEYWORDS:

Jaundice, Neonates, Hyperbilirubinemia, Presentation, G6PD Deficiency

EFFICACY AND SAFETY OF DIRECT ORAL ANTICOAGULANTS VERSUS WARFARIN IN PATIENTS WITH ATRIAL FIBRILLATION AND LIVER DISEASE: AN UPDATED SYSTEMATIC REVIEW AND META-ANALYSIS

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Raheel Ahmed, Mushood Ahmed
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INTRODUCTION:

The efficacy and safety of direct oral anticoagulants (DOAC) compared to warfarin in patients with atrial fibrillation (AFib) and liver disease have been examined in previous meta-analyses, recent studies, and emerging data necessitate a re-evaluation of the topic. Therefore, we conducted an updated meta-analysis to incorporate the latest evidence and provide a more comprehensive understanding of the literature.

OBJECTIVE(S):

1. To assess the safety and efficacy of DOAC vs warfarin in patients diagnosed with AFib and liver disease.

METHODOLOGY:

Following PRISMA guidelines, this meta-analysis is registered with PROSPERO (2024 CRD42024584964). A detailed search up to August 2024 was conducted for the studies comparing DOAC with warfarin. The quality of the observational studies was evaluated using the Risk of Bias in Non-randomized Studies of Interventions (ROBINS-1) tool.

RESULTS:

This meta-analysis included 53,224 participants with AFib and liver disease. The use of DOAC, in comparison to warfarin, was significantly linked to a lower risk of all-cause mortality (HR=0.77; 95%CI:0.60–0.98; $p=0.04$) and a decreased occurrence of intracranial hemorrhage (HR=0.49; 95%CI:0.40–0.59; $p<0.00001$). However, other outcomes did not demonstrate statistically significant differences.

CONCLUSION:

Recent studies indicate that DOAC is at least non-inferior to warfarin concerning the efficacy and safety of patients with AFib and liver disease.

KEYWORDS:

Direct Oral Anticoagulants (DOAC), Atrial Fibrillation (AFib), Liver Disease, Warfarin, Safety and Efficacy.

INVESTIGATING THE RELATIONSHIP BETWEEN SUBJECTIVE IDIOPATHIC TINNITUS AND HYPERLIPIDEMIA: A CASE-CONTROL STUDY.

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INTRODUCTION:

Tinnitus, although an uncommon symptom, can be quite distressing to patients who suffer from it on a chronic basis. A variety of co-morbidities and risk factors have been attributed to tinnitus; however, its association with hyperlipidemia has remained inconsistent.

OBJECTIVE(S):

1. To determine whether hyperlipidemia can be identified as a causative factor for developing tinnitus.

METHODOLOGY:

This study employed a case-control design to assess the link between hyperlipidemia and subjective idiopathic tinnitus. 500 participants were recruited, including 200 cases from the ENT OPD and Medical Wards of Khyber Teaching Hospital (KTH) via convenience sampling, compared to 300 controls. Lipid profiling was performed, mainly in the early hours, for accuracy. Cases identified as tinnitus patients filled the Tinnitus Handicap Inventory (THI) Questionnaire and underwent Pure Tone Audiometry (PTA) to confirm Subjective Idiopathic Tinnitus. Controls also underwent lipid profiling. Data was analyzed using SPSS Ver. 27.

RESULTS:

The results show a significant relation between serum Triacyl glyceride (TAG) levels (p -value =0.003) and total cholesterol levels (p -value <0.001) with tinnitus. Serum HDL cholesterol and LDL-cholesterol were not significantly associated with the development of tinnitus (p -values >0.05). Age and gender showed no statistical association with tinnitus.

CONCLUSION:

The results show that Hyperlipidemia is a significant risk factor for the development of Subjective Idiopathic Tinnitus.

KEYWORDS:

Tinnitus, Hyperlipidemia, Case-Control Study

THE ROLE OF ARTIFICIAL INTELLIGENCE IN CORONARY ARTERY DISEASE: A SCOPING REVIEW OF PREDICTION, DIAGNOSIS, AND TREATMENT

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INTRODUCTION:

Coronary artery disease (CAD) remains a leading global health burden, with traditional prediction, diagnosis, and treatment methods often limited in accuracy and efficiency. Artificial intelligence (AI) is transforming healthcare, offering innovative solutions in cardiology. This scoping review explores AI's applications in CAD, addressing the research question: "How is AI being used in the prediction, diagnosis, and treatment of coronary artery disease?"

OBJECTIVE(S):

1. To identify and summarize current AI applications in CAD prediction.
2. To evaluate the effectiveness of AI-based diagnostic tools for CAD.
3. To explore AI's potential in personalizing CAD treatment.
4. To assess limitations and challenges in implementing AI in CAD management.

METHODOLOGY:

A literature search was conducted using PubMed, Scopus, and Web of Science, with keywords like "artificial intelligence," "coronary artery disease," "prediction," "diagnosis," and "treatment." English articles from 2010–2023 were included. Thirty-two studies meeting the criteria were selected and analyzed for AI applications in CAD.

RESULTS:

AI enhances CAD prediction by analyzing patient data, outperforming traditional risk scores. In diagnosis, facial image-based models achieved moderate success (sensitivity 0.80, specificity 0.54), while QFR improved lesion assessment accuracy over conventional methods. Treatment applications, though emerging, include personalized planning and outcome prediction, with limited development to date. AI's diagnostic and predictive capabilities show promise, but data and validation gaps remain.

CONCLUSION:

AI is revolutionizing CAD management by improving prediction, diagnosis, and treatment potential. While diagnostic tools and risk models advance, treatment applications require further exploration.

KEYWORDS:

Artificial Intelligence, Coronary Artery Disease, Prediction, Diagnosis, Treatment

PHYTOCHEMICALS ANALYSIS AND ANTIMICROBIAL ACTIVITY OF FIXED OILS FROM OXALIS PES-CAPRAE AGAINST UTIS

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INTRODUCTION:

Oxalis pes-caprae, soursob, is a medicinal plant recognized for its diverse bioactive compounds. This study aimed to analyze the chemical composition of its fixed oils and evaluate the antimicrobial efficacy of different compounds against urinary tract infection (UTI) pathogens extracted and isolated from the plant.

OBJECTIVE(S):

1. To analyze GC/MS and antimicrobial activity of fixed oils of Oxalis Pes Capree against UTIs followed by Docking and Simulation.

METHODOLOGY:

Samples of plants were collected and verified. Methanolic extraction and fractionation were performed to obtain fixed oils, which were then analyzed using Gas Chromatography-Mass Spectrometry (GC-MS). The antimicrobial activity was tested against *Escherichia coli*, *Citrobacter*, and *Klebsiella pneumoniae* using disk agar diffusion and minimum inhibitory concentration (MIC) methods.

RESULTS:

GC-MS analysis identified 22 compounds in the fixed oils, with cis, cis, cis-7,10,13-hexadecatrienal (27.68%) being the most abundant. The fixed oils exhibited significant antimicrobial activity against *E. coli* and *Citrobacter*, with inhibition zones of 27mm and 23mm at 200 mg/ml concentration, respectively. The MIC values were 25 mg/ml for *E. coli* and 50 mg/ml for *Citrobacter*. However, no antimicrobial activity was detected against *Klebsiella pneumoniae*.

CONCLUSION:

The fixed oils of *Oxalis pes-Capree* demonstrate strong antimicrobial properties against *E. coli* and *Citrobacter*, indicating potential for developing antimicrobial therapies. Despite the promising results, no efficacy was observed against *Klebsiella pneumoniae*, highlighting the need for further research. Additional studies, particularly in vivo, are essential to fully understand and harness the therapeutic potential of *Oxalis pes-caprae* fixed oils.

KEYWORDS:

Oxalis Pes-Caprae, Fixed Oils, Antimicrobial Activity, GC-MS, Urinary Tract Infections, *Escherichia Coli*, *Citrobacter*, *Klebsiella Pneumoniae*.

POLY PHARMACY AMONG CARDIOVASCULAR PATIENTS: INVESTIGATING FREQUENCY, PATTERNS, POTENTIAL DRUG-DRUG INTERACTIONS AND DOCTORS VIEWS REGARDING POLY PHARMACY

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INTRODUCTION:

Polypharmacy, defined as the use of five or more medications, is common in cardiovascular patients due to complex regimens for multiple comorbidities. This study assessed its prevalence, drug interactions, and healthcare professionals' perspectives on management.

OBJECTIVE(S):

1. To determine the frequency and pattern of polypharmacy in cardiovascular patients at Peshawar's teaching hospital cardiology departments.
2. To identify potential drug interactions using Medscape's online checker for prescribed medications.
3. To explore the views of doctors practicing in the cardiology units of these hospitals regarding polypharmacy, WHO guidelines, strategies to reduce polypharmacy, and challenges faced in reducing polypharmacy.

METHODOLOGY:

A mixed-method approach included a retrospective cross-sectional survey of cardiovascular prescriptions and in-depth cardiologist interviews. The quantitative analysis assessed polypharmacy patterns and drug interactions using Medscape. The qualitative study explored healthcare professionals' views on polypharmacy, guidelines, reduction strategies, and management challenges.

RESULTS:

Polypharmacy was found in 69% of cardiovascular patients, highest in myocardial infarction, heart failure, and coronary artery disease. Common drug combinations included Aspirin + Bisoprolol, Aspirin + Clopidogrel, and Carvedilol + Dapagliflozin, with an average of 5.27 drugs per patient. Moderate to severe drug interactions were frequent, mainly involving Aspirin, Ramipril, and Spironolactone. Interviews with cardiologists reveal that they were aware of polypharmacy risks and WHO guidelines but faced challenges in managing comorbidities, patient preferences, medication reviews, deprescribing, and healthcare coordination.

CONCLUSION:

Polypharmacy in cardiovascular patients poses risks of harmful interactions, requiring targeted interventions like decision support tools and multidisciplinary care for better management.

KEYWORDS:

Polypharmacy, Cardiovascular Patients, Drug-Drug Interactions

ASSESSMENT OF GASTROINTESTINAL SYMPTOMS AND EATING BEHAVIOR AMONG PATIENTS WHO UNDERWENT BARIATRIC SURGERY

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INTRODUCTION:

Bariatric surgery refers to a range of operations designed to promote weight loss, primarily by altering the anatomy and size of the stomach to restrict food intake. The most commonly performed procedures include Roux-en-Y gastric bypass (RYGB), Mini gastric bypass (MGB), and Sleeve Gastrectomy (SG).

OBJECTIVE(S):

1. To assess gastrointestinal symptoms and eating behavior in patients who have undergone bariatric surgery for over six months.

METHODOLOGY:

A descriptive cross-sectional study was conducted from 1st November 2024 to January 2025 on 90 patients from all over KPK who had undergone bariatric surgery over six months ago, using purposive sampling. The study assessed gastrointestinal symptoms and eating behavior using the Gastrointestinal Rating Scale (GSRS) and Three-Factor Eating Questionnaire (TFEQ-R18). The GSRS, consisting of 15 questions on a 7-point Likert scale, evaluated symptoms like reflux, abdominal pain, indigestion, diarrhea, and constipation. The TFEQ-R18 measured Cognitive Restraint (CR), Uncontrolled Eating (UE), and Emotional Eating (EE) across 18 items. Data analysis was conducted using the Mann-Whitney test with SPSS V 25.

RESULTS:

The study comprised 90 patients (51 males, 39 females, mean age 37.4 ± 8.6), with 30 patients in each bariatric procedure. Significant gastrointestinal symptoms, such as abdominal pain, indigestion, and constipation ($p < 0.05$) were found in SG patients, along with higher CR and lower EE and UE scores on the TFEQ-R18.

CONCLUSION:

Postoperative SG patients had more severe gastrointestinal symptoms and greater changes in eating behavior than others.

KEYWORDS:

Bariatric Surgery, Gastrointestinal Symptoms, Eating Behavior

EXPLORING THE NOVEL HORIZONS IN THE MANAGEMENT OF FEMALE STRESS URINARY INCONTINENCE

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INTRODUCTION:

Stress urinary incontinence affects 40% of adult women over 40 years. Risk factors include obesity, aging, multiparity, chronic cough, and constipation. Many women consider it a normal aging phenomenon and don't seek specialist consultation.

OBJECTIVE(S):

1. To compare the clinical effectiveness, safety, and cost-effectiveness of urethral bulking agents and platelet-rich fibrin (PRF) in short-term management of female stress urinary incontinence.

METHODOLOGY:

This prospective cohort study was conducted in the Department of Urology at the Institute of Kidney Diseases, Peshawar, from June - July 2024. Using the WHO calculator, 30 SUI patients' refractory to conservative management were included. The sample was equally randomized into two groups using the lottery method. Group A (15 patients) received urethral bulking agents with hyaluronic acid. Group B (15 patients) was injected with 3-4 ml of PRF, prepared from the patient's blood, intra-urethrally at three points. Both groups were followed up at 3- and 6-month intervals and data up to a six-month follow-up was recorded on the Incontinence Impact Questionnaire and analyzed Chi-square test, and T-test, using SPSS.

RESULTS:

No major complications occurred. Three patients in Group A and Group B had symptom recurrence at 3 months, with one additional case in Group A at 6 months. At 6 months, 11 patients in Group A and 12 in Group B remained dry ($p>0.01$). PRF was significantly more cost-effective (35 PKR vs. 270,000 PKR, $p=0.000$).

CONCLUSION:

PRF is a clinically viable, safe, and significantly cost-effective alternative for managing SUI than commercially available bulking agents in financially constrained countries like Pakistan.

KEYWORDS:

Stress Urinary Incontinence, Platelet-rich fibrin.

SURVIVAL ANALYSIS AND PROGNOSTIC FACTORS IN DIFFERENTIATED THYROID CANCER IN PESHAWAR: A RETROSPECTIVE COHORT STUDY

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INTRODUCTION:

Thyroid cancer is a common malignancy of the endocrine system, with Papillary Thyroid Cancer (PTC) and Follicular Thyroid Cancer (FTC) being its major sub-types. These two types differ in prognosis and survival outcomes. This study aimed to assess survival differences between PTC and FTC patients and evaluate prognostic factors influencing survival, such as age, gender, tumor size, and treatment modalities.

OBJECTIVE(S):

1. To compare the survival outcomes of PTC and FTC patients and identify key prognostic factors affecting disease progression.

METHODOLOGY:

A retrospective cohort study was conducted on 60 patients diagnosed with differentiated thyroid cancer (DTC), with 30 in the PTC group and 30 in the FTC group. Data was collected from patient records. Kaplan-Meier analysis was used for survival assessment, and multivariate Cox regression analysis was performed to determine prognostic factors.

RESULTS:

The mean progression-free survival (PFS) was 133.92 months for FTC and 162.43 months for PTC ($p=0.955$). The mean event-free survival (EFS) was 125.81 months for FTC and 247.10 months for PTC ($p=0.743$). Five-year PFS and EFS rates for PTC were 73.7% and 74.4%, respectively, compared to 67.2% for FTC. Extra-thyroidal extension and histopathological aggressiveness were associated with worse survival outcomes. Total Thyroidectomy significantly improved prognosis in both groups.

CONCLUSION:

Extra-thyroidal extension and histopathological aggressiveness are significant prognostic indicators in DTC. PTC patients generally exhibit better survival outcomes than FTC patients. Integrating these prognostic factors into risk stratification may enhance treatment strategies and patient management.

KEYWORDS:

Differentiated Thyroid Cancer, Prognostic Factors, Survival Analysis, Thyroidectomy, Kaplan-Meier.

HISTIOCYTIC SARCOMA OF THE PALATINE TONSIL IN A PEDIATRIC PATIENT: A CASE REPORT OF A RARE AND AGGRESSIVE MALIGNANCY

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INTRODUCTION:

Histiocytic sarcoma (HS) is a rare hematological malignancy characterized by malignant histiocytic proliferation. It accounts for less than 1% of hemato-lymphoid neoplasms and is often diagnosed at an advanced stage with poor prognosis. Pediatric HS with primary tonsillar involvement is exceedingly rare. This report presents a case of a 7-year-old child with tonsillar HS, emphasizing its diagnostic and therapeutic challenges.

OBJECTIVE(S):

1. To describe a rare case of pediatric tonsillar HS, highlighting its clinical presentation, diagnostic approach, and treatment strategy.

METHODOLOGY:

A 7-year-old child with recurrent tonsillitis presented with neck swelling and a foreign body sensation. Clinical examination revealed an ulcerative left tonsillar mass with ipsilateral cervical lymphadenopathy. CT imaging showed an enlarged, heterogeneously enhancing left tonsil. Histopathology identified large pleomorphic cells with eosinophilic cytoplasm and a high Ki-67 index (80%). Immunohistochemical staining confirmed HS, with tumor cells expressing CD68, CD163, LCA, and S100. The patient underwent surgical excision and chemotherapy with cyclophosphamide, doxorubicin, vincristine, and prednisolone.

RESULTS:

Surgical resection and chemotherapy led to partial disease regression. The patient's response was monitored through follow-up imaging. Given HS's aggressive nature, long-term prognosis remains uncertain.

CONCLUSION:

Pediatric tonsillar HS is rare and requires early detection. A multimodal approach, including surgery and chemotherapy, is crucial. Further research is needed to improve survival outcomes.

KEYWORDS:

Histiocytic Sarcoma, Pediatric Cancer, Tonsillar Tumors, Immunohistochemistry, Multimodal Therapy

CONGENITAL INSENSITIVITY TO PAIN AND ANHIDROSIS WITH ORTHOPEDIC AND SELF-INJURY COMPLICATION IN A 5-YEAR-OLD-BOY: A CASE REPORT

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INTRODUCTION:

Congenital Insensitivity to Pain with Anhidrosis (CIPA) is a rare autosomal recessive disorder caused by mutations in the NTRK1 gene, resulting in the inability to perceive pain and temperature, along with anhidrosis. Affected individuals suffer from self-inflicted injuries, recurrent fevers, and orthopedic fractures due to their inability to recognize pain. Early diagnosis and a multidisciplinary approach are crucial to improving patient outcomes and quality of life.

OBJECTIVES:

1. To present a case of CIPA in a 5-year-old boy, detailing his clinical features and complications.
2. To emphasize the significance of genetic testing, early recognition, and multidisciplinary management in CIPA.

METHODOLOGY:

A 5-year-old male, born of a consanguineous marriage, presented with recurrent fevers, self-mutilation, and orthopedic injuries. Clinical examination revealed multiple ulcers, missing digits, corneal ulcers, and poor wound healing. Genetic testing confirmed NTRK1 mutations, leading to a definitive diagnosis. Laboratory investigations showed mild anemia and electrolyte imbalances. A multidisciplinary management plan was implemented, including orthopedic stabilization, infection control, and parental counseling on injury prevention and thermoregulation.

RESULTS:

The child exhibited recurrent fractures, poor wound healing, and self-inflicted injuries. A hip spica cast was applied for a femur fracture, and preventive strategies such as protective gear and behavioral counseling were introduced. Despite these interventions, the patient remains at high risk for complications.

CONCLUSION:

CIPA requires early recognition, genetic confirmation, and comprehensive management. A multidisciplinary approach is essential in minimizing complications and improving outcomes. Further research on gene therapy has potential for future treatment.

KEYWORDS:

Congenital Insensitivity to Pain and Anhidrosis, NTRK1 Mutation, Orthopedic Complications

FROM PIXELS TO PROGNOSIS: ARTIFICIAL INTELLIGENCE IN BREAST CANCER DIAGNOSIS

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INTRODUCTION:

Breast cancer is one of the leading causes of mortality among women. Early detection and treatment are the best way to avoid spreading disease and subsequent mortality.

OBJECTIVE(S):

1. To provide a comprehensive overview of screening and diagnosis of breast cancer.
2. To Analyze the specificity, sensitivity, and accuracy of various AI models for this purpose.

METHODOLOGY:

The databases searched were PubMed, Google Scholar, Cochrane Library, Springer, and MEDLINE. Articles from the last 5 years were included. The studies included use of AI models, such as Machine Learning and Deep Learning, in the detection and screening of breast cancer. Performance metrics were evaluated. Data was analysed by calculating frequency and percentages using SPSS.

RESULTS:

The review includes 10 studies, which comprise 32 AI models. Ultrasound images largely composed the data set and MRI and CT scans as input. Machine learning models, such as Random Forests and Decision Trees, were found to be prevalent in the studies (n=6; 60%). The studies showed promising results as the average area under the curve (AUC), specificity, and sensitivity were 86.13%, 82.38%, and 91.34%, respectively.

CONCLUSION:

Breast cancer diagnosis has been integrated with AI, transforming diagnostic processes and optimizing healthcare resources. AI diagnostic tools are sensitive and accurate in image analysis, especially mammography and MRI, and would help radiologists in better and quicker diagnosis and screening.

KEYWORDS:

Breast Cancer, Computer Aided Diagnosis, Deep Learning, Machine Learning, Mammography

EFFICACY AND SAFETY OF ACE INHIBITORS AND ANGIOTENSIN RECEPTOR BLOCKERS FOLLOWING TRANSCATHETER AORTIC VALVE IMPLANTATION: A SYSTEMATIC REVIEW AND META-ANALYSIS

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INTRODUCTION:

ACE inhibitors (ACEi) and angiotensin receptor blockers (ARBs) may improve outcomes in patients undergoing transcatheter aortic valve implantation (TAVI) by preventing myocardial remodeling. This systematic review and meta-analysis assess the efficacy and safety of ACEi/ARBs following TAVI.

OBJECTIVE(S):

1. To evaluate ACEi/ARBs' efficacy in reducing mortality, readmissions, and adverse cardiovascular events post-TAVI; assess safety (stroke, acute kidney injury, bleeding); and synthesize evidence on myocardial remodeling and functional outcomes (e.g., NYHA class)

METHODOLOGY:

A systematic literature search was undertaken on PubMed, Embase, Cochrane, and clinicaltrials.gov using MeSH terms and keywords for 'Transcatheter Aortic Valve Replacement', 'Angiotensin Converting Enzyme Inhibitors', and 'Angiotensin Receptor Antagonists', from inception to December 2024. Randomized controlled trials (RCTs) and observational studies assessing ACEi/ARBs after TAVI were included. A random-effects meta-analysis was undertaken to pool risk ratios (RR) and 95% confidence intervals (CI) using the Mantel Haenszel method in Revman.

RESULTS:

Thirteen studies (45,261 patients) were included. ACEi/ARB administration was associated with significant improvement in terms of all-cause mortality (RR 0.73, 95% CI 0.65-0.82), cardiac death (RR 0.63, 95% CI 0.55-0.73), readmission (RR 0.75, 95% CI 0.67-0.84), heart failure readmission (RR 0.86, 95% CI 0.81-0.93) and major bleeding (RR 0.80, 95% CI 0.69-0.93). Both groups were comparable in terms of heart failure (RR 1.03, 95% CI 0.73-1.45), NYHA grade 3-4 (RR 1.10, 95% CI 0.91-1.32), stroke (RR 0.73, 95% CI 0.44-1.23) and acute kidney injury (RR 0.61, 95% CI 0.34-1.08).

CONCLUSION:

ACEi/ARBs significantly reduce mortality and readmission after TAVI. Large scale RCTs need to be undertaken to determine the most optimal management.

KEYWORDS:

Transcatheter Aortic Valve Implantation, Aortic Stenosis, ACE Inhibitor, Angiotensin Receptor Blocker

CLOPIDOGREL PLUS ASPIRIN VERSUS ASPIRIN ALONE FOR PATIENTS WITH ISCHEMIC STROKE: A SYSTEMATIC REVIEW AND META-ANALYSIS

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INTRODUCTION:

Although the efficacy of aspirin in preventing recurrent stroke following ischemic stroke is well established, there is growing evidence supporting dual antiplatelet therapy (DAPT). This meta-analysis compares DAPT (clopidogrel plus aspirin) versus aspirin following ischemic stroke.

OBJECTIVE(S):

1. To compare DAPT (clopidogrel + aspirin) vs aspirin in reducing recurrent ischemic stroke and assess bleeding risks.
2. To analyze secondary outcomes (mortality, myocardial infarction) to inform post-stroke risk-benefit assessment.

METHODOLOGY:

MeSH terms and keywords for 'Ischemic Stroke', 'Clopidogrel', and 'Aspirin' were used to run a literature search on PubMed, Embase, Cochrane, and clinicaltrials.gov, from inception to December 2024. Randomized controlled trials (RCTs) comparing DAPT with aspirin after ischemic stroke were included. Risk ratios (RR) and 95% confidence intervals (CI) were pooled using the Mantel Haenszel method in Revman. Random effects meta-analysis was undertaken.

RESULTS:

Seven RCTs (20,609 patients) were included. DAPT was significantly associated with reduced recurrent stroke (RR 0.74, 95% CI 0.67-0.82) and recurrent ischemic stroke (RR 0.72, 95% CI 0.64-0.81). Both groups were comparable in terms of recurrent hemorrhagic stroke (RR 1.30, 95% CI 0.77-2.21), all-cause mortality (RR 1.25, 95% CI 0.91-1.73), cardiac death (RR 2.12, 95% CI 0.94-4.76), myocardial infarction (RR 1.49, 95% CI 0.75-2.95), adverse events (RR 1.01, 95% CI 0.93-1.10), serious adverse events (RR 1.22, 95% CI 0.96-1.56) and intracranial hemorrhage (RR 1.86, 95% CI 0.95-3.67).

CONCLUSION:

DAPT is associated with a reduced risk of recurrent stroke but increased bleeding. Large-scale RCTs need to be undertaken to determine the most optimal management.

KEYWORDS:

Clopidogrel, Aspirin, Dual Antiplatelet Therapy, Ischemic Stroke, Recurrent Stroke, Bleeding Risk

FREQUENCY OF ACUTE KIDNEY INJURY AMONG NEONATES WITH BIRTH ASPHYXIA PRESENTING AT TERTIARY CARE HOSPITAL IN KHYBER PAKHTUNKHWA

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INTRODUCTION:

Perinatal asphyxia signifies a decrease in blood or oxygen supply to the fetus before, during, or following birth. This restriction of blood or oxygen around the time of birth can result in serious physiological and neurological effects.

OBJECTIVE(S):

1. To evaluate the frequency of acute kidney injury among neonates with birth asphyxia presenting at a tertiary care hospital.

METHODOLOGY:

A cross-sectional study was conducted from August 2023 to February 2024, using a consecutive non-probability sampling technique. It was performed on 105-term neonates, i.e., born during 37-42 weeks of gestation of either gender who presented with birth asphyxia. Statistical software (IBM SPSS 26) was used to analyze the data.

RESULTS:

The mean gestational age of the neonates was 39.55 ± 1.48 weeks; 49 (46.66%) were male, while 56 (53.33%) were female patients. The prevalence of acute kidney injury in our population was 11 out of 105 (10.5%). The incidence of acute kidney injury in mothers with pre-eclampsia is 5 (45.5%) and 6 (54.5%) for having no pre-eclampsia. For birth weight 1.9 to 2.5Kg 7(63.6%) had Acute kidney injury, while for those above 2.5 Kg, only 4 (36.4%) had acute kidney injury. 4 (36.4%) out of 11 acute kidney injury neonates had a gestational age of 37 to 39 weeks, and 7 (63.6%) had more than 39 weeks gestational age.

CONCLUSION:

It was concluded that the frequency of acute kidney injury was 10.5%, and no significant difference was found for other variables.

KEYWORDS:

Birth Asphyxia, Newborn, Acute Kidney Injury, Pediatrics

IDENTIFICATION OF MOLECULAR BIOMARKERS USING EXPRESSION ANALYSIS AND PROTEIN NETWORKS FOR EARLY DIAGNOSIS OF AMPULLARY CARCINOMA

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INTRODUCTION:

Ampullary cancers (AC) are rare, comprising 0.2% of gastrointestinal cancers and 7% of periampullary cancers. AC is the second most common periampullary malignancy, with an incidence of 4–10 cases per million. Currently, carcinoembryonic antigen (CEA) and carbohydrate antigen 19-9 (CA 19-9) are the only noninvasive biomarkers, but their sensitivity and specificity are limited. This study aims to identify reliable molecular biomarkers for early detection of ampullary carcinoma.

OBJECTIVE(S):

1. To identify novel molecular biomarkers for early diagnosis of ampullary carcinoma through differential gene expression analysis

METHODOLOGY:

Gene expression data from ampullary carcinoma and healthy samples were obtained from GEO (datasets GSE60979 and GSE39409). Differential expression analysis was performed using R packages, with an adjusted p-value < 0.05 and fold change > 1.5. DEGs were compared with mutated genes (n=160) from early and advanced ampullary carcinoma using cBioPortal. Protein-protein interactions (PPIs) were analyzed, and DAVID was used to assess protein detectability.

RESULTS:

Out of 23,983 DEGs, 4,243 were highly significant, out of which 250 DEGs were significantly dysregulated. Overlapping with mutated genes revealed 35 common genes. PPI analysis revealed 7 key genes out of which FN1, ITGB4, and KT17 highlighted as biomarkers, are detectable in urine and stool samples.

CONCLUSION:

FN1, ITGB4, and KT17 are potential early diagnostic biomarkers for ampullary carcinoma. Further validation studies are needed.

KEYWORDS:

Ampulla of Vater, Biomarker, gene expression, Early diagnosis

THE NOVEL NANO COOL BOXES: A STEP TOWARDS SOLID ORGAN TRANSPORT IN CADAVERIC TRANSPLANTATION

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INTRODUCTION:

Solid organ transplantation is a major medical advancement, but current preservation methods, such as UW solutions are limited to 24 hours, leading to acute rejection and transplant failure. Novel Nano Cool boxes have been developed to address these limitations.

OBJECTIVE(S):

1. To compare the longevity of organs stored in Phase Change Material (PCM) Nano Cool boxes versus UW solution at temperatures ranging from -60°C to 60°C.

METHODOLOGY:

A multicenter study was conducted from May to June 2024 by the Department of Urology, IKD, ASAB NUST Islamabad and the Department of Biotechnology, University of Boston. Five chicken leg pieces, liver, and kidneys were stored in Nano Cool boxes and UW solution under aseptic conditions. Core temperatures were recorded three times daily for seven days, assessing longevity, freshness, autolysis, and putrefaction of tissue. Data was analyzed using SPSS.

RESULTS:

Nano Cool boxes maintained a stable core temperature of $-40^{\circ}\text{C} \pm 0.13^{\circ}\text{C}$, whereas the UW solution group experienced significant temperature fluctuations ($8^{\circ}\text{C} \pm 4.7^{\circ}\text{C}$, $p=0.001$). Organ longevity was significantly higher in the Nano Cool group (86%) compared to the UW solution group (26.6%). No putrefaction or odor changes were observed in the Nano Cool group, while autolysis occurred in the UW solution group.

CONCLUSION:

Nano Cool boxes demonstrate superior preservation of solid organs, presenting a promising solution for future cadaveric transplants.

KEYWORDS:

Nanotechnology, Nano Cool Boxes, Cadaveric Renal Transplantation, Solid Organ Transport

USE OF ARTIFICIAL INTELLIGENCE FOR THE DETECTION OF CARDIOMYOPATHY IN PREGNANT WOMEN: A NARRATIVE REVIEW

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INTRODUCTION:

Cardiomyopathy in pregnancy is a growing concern, with potentially life-threatening complications for both mother and fetus. Early detection is crucial, and artificial intelligence (AI) offers a promising avenue for improved diagnostics.

OBJECTIVE(S):

1. To explore the current and potential role of AI in detecting cardiomyopathy in pregnant women.

METHODS:

This narrative review examines the existing literature on cardiomyopathy in pregnancy, including its prevalence, clinical presentation, and pathophysiology. It discusses current diagnostic methods and their limitations, followed by an in-depth analysis of AI techniques applied to cardiomyopathy detection. The review also addresses the challenges and limitations of using AI in this context and suggests future research directions.

RESULTS:

Pregnancy-associated cardiomyopathy, often classified under dilated cardiomyopathy, can lead to significant maternal and neonatal morbidity. Traditional detection methods, such as electrocardiography and echocardiography, have limitations in early and accurate diagnosis. AI-driven diagnostic tools, including ECG-based deep learning models, have demonstrated promising results in risk stratification and detection, often outperforming conventional methods. However, challenges remain, including data quality and the need for robust validation across diverse populations.

CONCLUSION:

AI holds significant potential for improving the detection and management of cardiomyopathy in pregnant women. Further research is needed to address current limitations, refine AI algorithms, and integrate these tools into clinical practice to optimize cardio-obstetric care and improve outcomes for mothers and their babies.

KEYWORDS:

Artificial Intelligence, Cardiomyopathy, Pregnant Women.

SURVIVAL ANALYSIS AND PROGNOSTIC FACTORS RELATED TO EARLY VS DELAYED DIAGNOSIS OF DIFFERENTIATED THYROID CANCER: A SINGLE-CENTRE COHORT STUDY IN PAKISTAN

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INTRODUCTION:

Differentiated thyroid cancer (DTC) is the most common type of thyroid malignancy. Early diagnosis, typically through ultrasound, leads to excellent Progression-free survival (PFS) and Event-free survival (EFS). In contrast, delayed diagnosis can lead to reduced survival outcomes.

OBJECTIVE(S):

1. To assess the 5-year PFS and EFS in patients with DTC among early vs delayed diagnosed groups.
2. To assess the prognostic factors associated with 5-year PFS in patients with DTC among early vs delayed diagnosed groups.

METHODOLOGY:

This cohort study was conducted at the IRNUM Institute in Peshawar, Pakistan. 131 patients were selected randomly based on inclusion criteria. Data included baseline characteristics, date of recurrence, and date of diagnosis to assess PFS and EFS. Statistical tests included the Kaplan-Meier Survival Curve, Cox Regression Analysis, and Adjusted Hazard Ratio (HR) analysis.

RESULTS:

Out of the total 131 patients, 111 (84.73%) of them were females. The mean age of the participants was 36+/-13 years. Factors associated with early Vs delayed diagnosis of DTC were age, histopathological aggressiveness, and distant metastasis. The median PFS and EFS were 53 +/- 79 and 54+/- 82 years, respectively. The Kaplan Meier plot showed 5-year PFS and EFS as 56.2% and 42.7% for early diagnosed cases, and 36.3% and 33.3% for delayed diagnosed cases.

CONCLUSION:

Our study showed that the 5-year PFS and EFS were quite low for the delayed diagnosed group, while histopathologic aggressiveness was strongly associated with PFS.

KEYWORDS:

Differentiated Thyroid Cancer, Survival Analysis, Malignancy

THE IMPACT OF GLYCEMIC CONTROL ON THE FREQUENCY AND SEVERITY OF RESTLESS LEGS SYNDROME SYMPTOMS IN PATIENTS WITH DIABETES MELLITES - A PROSPECTIVE COHORT STUDY

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INTRODUCTION:

Restless Legs Syndrome (RLS) is a disorder that triggers an uncontrollable urge to move the legs, often causing discomfort and pain, especially at night, and relieved only by movement.

OBJECTIVE(S):

1. To compare the impact of glycemic control on RLS frequency and severity in Type 1 & 2 DM.
2. To assess the influence of demographics on RLS in Type 1 & 2 DM.
3. To compare the effects of oral hypoglycemics vs insulin on RLS symptoms.

METHODS:

A 6-month prospective cohort study was conducted of 276 diabetic patients (138 per group) at four teaching hospitals using non-probability consecutive sampling. With 3-month follow-up, Glycemic control was assessed via HbA1c, fasting glucose, and medication records. RLS severity was measured using the IRLSSG scale, with data analyzed in IBM SPSS.

RESULTS:

A study of 276 diabetic patients (44% male, 56% female, BMI >29) found that 40% had Type 1 and 60% had Type 2 diabetes. Poor glycemic control (HbA1c >7%) was seen in 60%. Initially, RLS was very severe in 48% and severe in 23%. On 3 monthly Follow-ups, improved glycemic control reduced very severe cases to 39% and severe to 20% ($P=0.01$ & $t\text{-test}=0.001$) indicating a significant association and strong impact of glycemic control on RLS, In the majority of cases RLS symptoms were improved with oral hypoglycemics.

CONCLUSION:

Improved glycemic control significantly reduces the severity of Restless Legs Syndrome (RLS) in diabetic patients. A strong correlation was observed between HbA1c levels and RLS severity.

KEYWORDS:

Restless Leg Syndrome, Diabetes, HbA1c

PATIENT INSIGHTS ON DYSLIPIDEMIA MANAGEMENT IN CORONARY ARTERY DISEASE

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INTRODUCTION:

Dyslipidemia, characterized by elevated lipid levels, is a significant risk factor for Coronary Artery Disease (CAD). Understanding patient awareness, perceptions, and management practices is crucial for improving treatment adherence and reducing cardiovascular complications.

OBJECTIVE(S):

1. Determine awareness levels of dyslipidemia among CAD patients.
2. Explore perceptions of dyslipidemia as a cardiovascular risk factor.
3. Assess knowledge of management strategies, including lifestyle modifications.

METHODOLOGY:

A cross-sectional survey of 377 CAD patients (≥ 15 years of history) was conducted across five hospitals using multi-stage sampling. Structured questionnaires assessed awareness, perceptions, and management knowledge. Data were analyzed by measuring percentages using SPSS 22.

RESULTS:

Preliminary findings showed that 65% of patients recognized dyslipidemia as a CAD risk factor, but only 30% accurately identified diagnostic lipoprotein levels. Prior education improved awareness ($p < 0.05$). Only 25% adhered to lifestyle modifications, with financial constraints and perceived inefficacy cited as key barriers.

CONCLUSION:

Significant gaps exist in dyslipidemia awareness and management among CAD patients. Targeted educational interventions are needed to enhance adherence and reduce cardiovascular risks.

KEYWORDS:

Perceptions, Coronary Artery Disease, Dyslipidemia, Awareness, Management

LIFESAVING LENS: VITAL ROLE OF CHEST IMAGING IN EARLY NEONATAL ASSESSMENT

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INTRODUCTION:

Respiratory disorders are a significant cause of neonatal morbidity and mortality, particularly during the first week of life, when conditions such as ARDS, TTN, and Neonatal pneumonia, including bacterial and viral pneumonia, Pneumothorax, Hemothorax and Bronchiolitis, frequently arise.

OBJECTIVE(S):

1. To document the radiological findings of chest X-rays in neonates admitted to the NICU.

METHODOLOGY:

This cross-sectional study at RMI NICU, Peshawar, assessed chest X-rays in diagnosing neonatal respiratory disorders. It included 215 neonates admitted within 24 hours and X-rayed within the first week, excluding those with congenital cardiac or pulmonary anomalies. Data was analyzed using SPSS.

RESULTS:

Of 215 neonates, 67 (31.2%) had normal chest X-rays with insignificant clinical features. ARDS was diagnosed in 29 (13.5%) with shortness of breath, grunting, and bilateral pulmonary shadowing ($p=0.000$). TTN was seen in 40 (18.6%) with noisy breathing, tachypnea, and extensive pulmonary shadowing ($p=0.000$). Neonatal pneumonia was found in 55 cases, including 28 (13.02%) with bacterial pneumonia (poor feeding, fever, tachycardia; $p=0.037$) and 27 (12.55%) with viral pneumonia (marked retractions; $p=0.018$).

CONCLUSION:

The study highlights the vital role of chest X-rays in diagnosing neonatal respiratory disorders. The identified correlations between clinical symptoms and radiographic findings reinforce the need for integrating imaging in clinical practice, ultimately improving diagnostic accuracy and management strategies in the NICU

KEYWORDS:

Chest X-ray, Respiratory Distress, Transient Tachypnea, Neonatal

MITROFLOW VS PERIMOUNT BIOPROSTHESES IN SURGICAL AORTIC VALVE REPLACEMENT: A SYSTEMATIC REVIEW AND META-ANALYSIS

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INTRODUCTION:

Aortic stenosis is common in older adults, with bioprosthetic aortic valve replacement (AVR) being the standard treatment. The Carpentier-Edwards (CE) Perimount and Mitroflow valves are widely used, but recent reports suggest higher structural valve deterioration (SVD) and mortality with Mitroflow.

OBJECTIVE(S):

1. To compare the long-term safety and performance of Mitroflow and Perimount valves in surgical aortic valve replacement (SAVR).

METHODOLOGY:

A systematic search of PubMed, Embase, and Web of Science was conducted until January 2024. Primary outcomes included all-cause mortality at one, five, and ten years. Secondary outcomes included reoperation for any cause, SVD, endocarditis, and cardiac death. Data were analyzed using a random-effects model.

RESULTS:

This meta-analysis included one RCT and seven observational studies with 22,320 patients (Mitroflow: 4,339, Perimount: 17,981). Mitroflow showed higher all-cause mortality at one year (RR = 1.33), five years (RR = 1.32), and ten years (RR = 1.39). It also had higher risks of reoperation for any cause (RR = 4.43), SVD (RR = 14.19), and reoperation due to SVD (RR = 13.37). Mitroflow was associated with higher cardiac death at five years (RR = 1.80). No significant differences were found for reoperation due to endocarditis.

CONCLUSION:

Mitroflow valves are associated with higher mortality, reoperation rates, and SVD compared to Perimount valves, emphasizing the need for careful valve selection in SAVR to optimize long-term outcomes.

KEYWORDS:

Mitroflow, Perimount, Surgical Aortic Valve Replacement, Meta-analysis

CLINICAL OUTCOMES OF INTERATRIAL SHUNT DEVICE IN HEART FAILURE WITH PRESERVED EJECTION FRACTION (HFPEF): A META-ANALYSIS AND TRIAL SEQUENTIAL ANALYSIS OF RANDOMIZED CONTROLLED TRIALS

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INTRODUCTION:

Multiple therapeutic interventions have been introduced to treat patients of heart failure with preserved ejection fraction (HFpEF) among which one is the use of interatrial shunt devices. These devices alleviate the atrial pressure, relieving the HFpEF symptoms and complications.

OBJECTIVE(S):

1. To demonstrate the efficacy of Shunt devices in patients with Preserved Ejection Fraction (HFPEF).

METHODOLOGY:

A comprehensive literature search, from inception to January 2025, was conducted across multiple databases. Study quality was assessed using the Cochrane ROB 2.0 tool. Risk Ratios (RRs) and Mean Differences (MDs) were calculated with 95% CIs using Mantel-Haenszel and inverse variance methods, respectively. Heterogeneity was evaluated via I^2 and Chi-square tests. Trial Sequential Analysis (TSA) was performed to determine sample size adequacy.

RESULTS:

This meta-analysis of three RCTs (n=915) found non-significant increased risks in the IASD group for cardiovascular death (RR=2.28, 95% CI: [0.94–5.55], $I^2=0\%$, $P=0.6584$) and stroke (RR=1.57, 95% CI: [0.41–6.00], $I^2=0\%$, $P=0.6703$) compared to control. Trial sequential analysis showed no robust evidence of IASD or sham procedure effects on these outcomes, with type 1 error at 5% and type 2 error at 20%.

CONCLUSION:

Clinical outcomes in HFpEF patients using IASD showed a statistically insignificant increase in cardiovascular death and stroke risk. The limited sample size and shorter follow-up periods prevented definitive conclusions.

KEYWORDS:

Heart Failure, Interatrial Shunt Devices, Randomized Controlled Trial, Meta-Analysis, Trial Sequential Analysis, Cardiovascular Death

TRANSCRIPTOMIC COMPARISON OF BIPOLAR DISORDER, SCHIZOPHRENIA, AND AUTISM -AND UNRAVELING ITS LINKS TO INFLAMMATION_ASSOCIATED GENES

Gul E Lala

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INTRODUCTION:

Neuropsychiatric disorders affect 43% of the population and 31.7% of the disability burden.

OBJECTIVE(S):

1. To study the common and unique genes of each disorder and see how these genes are involved in biological mechanisms leading up to each disorder.

METHODOLOGY:

Using the Gene Expression Omnibus (GEO) database with a taking 38 samples of gene clusters from GEO with a total of 25407 genes were used as the sample size by using the bioinformatics analysis sampling technique from 8th July to 29th August (1 month and 21 days). Access RNA-sequence data for bipolar (GSE80336), schizophrenia (GSE80170), and autism (GSE64108). DEG data analysis was performed in R-Programing, using various LogFC cutoffs. Volcano plots, PCA plots, and Venn diagrams enrichment analysis revealed the roles of their distinctive genes for each disorder.

RESULTS:

(DGE), Volcano plots, principal component analysis (PCA) plots, and Venn diagrams highlighted the unique transcriptomic features of each disorder. Pathway analysis showed pathways that they activated lead up to each distinct disorder. They were linked to inflammatory responses, suggesting potential areas for further investigation.

CONCLUSION:

Found 4 notable DEGs to be candidates for experimental validation as potential biomarkers for neuropsychiatric disorders, and their relation to inflammatory responses.

KEYWORDS:

Transcriptomic, Neuropsychiatric Disorders, Bipolar Disorder, Autism, Schizophrenia, Genome

EXPLORING THE ROLE OF LONG NON-CODING RNA IN ORAL SQUAMOUS CELL CARCINOMA (OSCC)

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INTRODUCTION:

Oral squamous cell carcinoma is a highly lethal malignancy. Long noncoding RNAs (lncRNAs), defined as capped RNA transcripts over 200 nucleotides, show promise as potential biomarkers for OSCC.

OBJECTIVE(S):

1. To identify the differentially expressed lncRNA in OSCC.
2. To analyze regulatory networks involving differentially expressed lncRNA in OSCC.
3. To perform functional analysis of lncRNA-associated genes

METHODOLOGY:

RNA-seq data from 358 samples, comprising 43 healthy and 215 OSCC samples. The samples were selected based on availability in the TCGA database. The data collection duration was 4 days. The primary research tools included GENCODE, Target Scan, PubMed, Bio GRID, miRTarBase, Cytoscape, EnrichR, and KEGG. Differential expression analysis identified lncRNAs with a fold change of ≥ 2 and an adjusted p-value ≤ 0.05 . lncRNA-miRNA interactions were constructed and visualized using Cytoscape. KEGG pathway analysis of the identified lncRNAs was conducted with EnrichR.

RESULTS:

lncRNAs were analyzed in the sample dataset, identifying 24 significant lncRNAs: 13 were down-regulated and 11 were up. lncRNA-miRNA interaction networks elucidate the functional relationships among these lncRNA. PCAT18 was found to mediate interactions between the downregulated RMST and the upregulated AFAP1 AS1. miRNA-mediated interactions were observed involving HCG22, HOTAIR, AFAP1-AS1, LINC00452, LINC00052, and LINC00922. KEGG pathway analysis revealed associations between the identified lncRNAs and cancer-related pathways, proteoglycans in Cancer and Prostate Cancer.

CONCLUSION:

In our study novel lncRNAs in OSCC were identified. These findings enhance understanding of OSCC's molecular mechanism, clinical profiling, and risk assessment.

KEYWORDS:

OSCC, Long Non-Coding RNAs, Biomarker.

DIFFERENTIAL GENE EXPRESSION OF PANCREATIC DUCTAL ADENOCARCINOMA-ASSOCIATED DIABETES MELLITUS (PDAC-DM) WITH PANCREATIC DUCTAL ADENOCARCINOMA (PDAC) AND DIABETES MELLITUS (DM)

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INTRODUCTION:

Pancreatic Ductal Adenocarcinoma (PDAC) is a malignancy commonly associated with diabetes mellitus (DM), termed PDAC-associated diabetes mellitus (PDAC-DM), characterized by poor prognosis and an advanced-stage diagnosis.

OBJECTIVE(S):

1. To identify differentially expressed genes (DEGs) unique to PDAC-DM.
2. To investigate Molecular pathways involved in the progression of PDAC-DM.

METHODOLOGY:

The GSE15932 dataset from Gene Expression Omnibus (GEO), with 8 samples each for PDAC-DM, PDAC, DM, and controls, was analyzed using the limma in R to identify DEGs. Enrichr highlighted significant KEGG pathways and GO-Biological Processes. A Protein-Protein Interaction (PPI) network was also constructed to gain insights.

RESULTS:

Differential Expression Analysis identified 9 DEGs for PDAC-DM, 4 for PDAC, and 5 for DM ($p\text{-value} < 0.05$, $\log_{2}FC > 2$). A Venn diagram revealed 8 unique DEGs for PDAC-DM, 3 for DM, 2 for PDAC, 1 common DEG among all three conditions, and 1 common between PDAC and DM. Enrichment analysis highlighted the Staphylococcus aureus infection pathway (KEGG) as significant, with GO-BP analysis showing involvement in innate immune responses. The PPI network linked the S. aureus infection pathway to the NF- κ B signaling pathway, suggesting its role in PDAC-DM progression.

CONCLUSIONS:

Our findings suggest that Staphylococcus aureus may potentially be a risk factor for PDAC-DM. The genes involved in immune response against this pathogen interact with genes in the NF- κ B signaling pathway, promoting carcinogenesis in the context of Diabetes Mellitus.

KEYWORDS:

Pancreatic Ductal Carcinoma, Diabetes Mellitus, Staphylococcus aureus

COMPARATIVE EFFECTIVENESS OF PASCAL VS. MITRACLIP FOR TRANSCATHETER EDGE-TO-EDGE REPAIR IN MITRAL REGURGITATION: A SYSTEMATIC REVIEW AND META-ANALYSIS

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INTRODUCTION:

Mitral Regurgitation (MR) affects 24 million people worldwide, with Mitral Transcatheter Edge-to-Edge Repair (mTEER) emerging as a minimally invasive treatment option. The MitraClip and PASCAL devices are commonly used for mTEER, but their comparative effectiveness remains unclear.

OBJECTIVE(S):

1. To evaluate the safety, procedural success, and MR reduction of MitraClip and PASCAL devices by updating an existing meta-analysis with recent data.

METHODOLOGY:

A comprehensive search of PubMed, Embase, and Web of Science was performed up to February 2, 2025. Efficacy outcomes analyzed included MR <2, all-cause mortality, NYHA class <3, and major adverse cardiovascular events (MACE). Safety outcomes included cardiac damage, major bleeding, and stroke. The procedural outcomes assessed were technical success and procedure time. A random-effects model in RevMan (version 5.4.1) was used for data analysis.

RESULTS:

Ten studies with 2,451 patients were included, comparing PASCAL (n=1,259) and MitraClip (n=1,192). MitraClip showed a lower frequency of MR <2 (RR = 1.14, p = 0.02). Procedure time was significantly longer for PASCAL (Mean Difference = 5.81 minutes, p = 0.003). No significant differences were found in all-cause mortality, NYHA <3, MACE, cardiac damage, major bleeding, stroke, or technical success.

CONCLUSION:

PASCAL and MitraClip demonstrate comparable safety, procedural success, and clinical outcomes for mTEER in MR patients. PASCAL showed a greater reduction in residual MR but had a longer procedure time. These findings inform device selection in clinical practice.

KEYWORDS:

PASCAL, MITRACLIP, Mitral regurgitation

EFFICACY OF SEPTOPLASTY IN THE MANAGEMENT OF HEADACHES IN CHRONIC SINUSITIS SECONDARY TO DEVIATED NASAL SEPTUM

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INTRODUCTION:

The nasal septum is crucial for breathing and airflow, and its deviation can cause health issues like headaches, snoring, and nasal blockage. Common symptoms of chronic sinusitis are often associated with deviated nasal septum (DNS).

OBJECTIVE(S):

1. To assess the effectiveness of septoplasty in treating headaches related to DNS-induced chronic sinusitis.

METHODOLOGY:

This descriptive case series at Hayatabad Medical Complex, Peshawar, included 206 septoplasty patients with endoscopic osteomeatal clearance. Preoperative X-rays and CT scans were done. Procedures used local or, when needed, general anesthesia. Follow-up was at two weeks, one month, and three months, assessing headache severity via VAS. Ethical approval was obtained, informed consent was secured, and data analysis was conducted using SPSS Version 22.

RESULTS:

The study included 47.1% females and 52.9% males, mean age 43.56 years ($SD \pm 1.357$). Efficacy was highest in ages 51–60 (100%). Males (93.6%) improved more than females (84.5%, $p = 0.036$). Overall success was 89.3%, higher with conventional (99.0%) than endoscopic septoplasty (80.4%, $p < 0.001$). Multiple sinus involvement showed 100% efficacy ($p = 0.010$). Pain was mild in 34.5%, absent in 23.8%, and mostly mild to moderate.

CONCLUSION:

Septoplasty had an 89.3% success rate, with better outcomes in older males. Conventional was more effective than endoscopic, with mild to moderate pain and lasting benefits.

KEYWORDS:

Deviated Nasal Septum, Septoplasty, sinusitis

EVALUATION OF POST-SURGICAL RADIOGRAPHIC OUTCOMES IN ADOLESCENT IDIOPATHIC SCOLIOSIS

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INTRODUCTION:

Scoliosis is a lateral curvature of the spine (Cobb angle $>10^\circ$). Treatment includes observation, bracing, and surgery, with surgical correction (posterior or anterior instrumentation) recommended for Cobb angles $>40^\circ$.

OBJECTIVE(S):

1. To evaluate the effectiveness of posterior spinal instrumentation and fusion by rod pedicle screws with bone graft in correcting the deformity by measuring Cobb's angle in AIS by radiography.

METHODOLOGY:

A descriptive case series was conducted from January 2022 to June 2023 at Hayatabad Medical Complex Peshawar. A total number of 37 patients were enrolled. Patients over 10 years with AIS and progressive curvature $>40^\circ$ requiring posterior surgical correction were included. The surgical intervention procedures were categorized based on the Lenke classification. Pre- and post-surgical Cobb's angles were measured on radiographs. The data was analyzed using SPSS 25 by calculating mean values.

RESULTS:

The study included 37 patients (20 females and 17 males) with a mean age of 18.5 ± 5.9 years. According to Lenke classification L1- 23 patients, L2- 7 patients, L3- 2 patients, L4- 1 patient, L5- 3 patients, L6- 1 patient. The mean duration of surgery was 5.6 ± 1.15 hours. Mean blood loss was $767.5\text{ml} \pm 404\text{ml}$. The mean pre-operative Cobb's angle was $56.8^\circ \pm 6.3^\circ$. The mean postoperative Cobb's angle correction was $14.8^\circ \pm 4.4^\circ$. The mean total correction of Cobb's angle was $41.7^\circ \pm 4^\circ$.

CONCLUSION:

The significant reduction in Cobb's angle postoperatively underscores the procedure efficacy of posterior spinal instrumentation and fusion using rods, pedicle screws, and autologous bone grafts.

KEYWORDS:

Cobb's Angle, Adolescent Idiopathic Scoliosis

CORRELATION BETWEEN PROGNOSIS OF HIGH-GRADE GLIOMAS IN ADULT PATIENTS AND TUMOR LOCATION

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INTRODUCTION:

High-grade GBM is the most common intra-axial brain tumor in adults over 20, with grades 3 and 4 being highly malignant. It invades brain tissue but rarely spreads beyond the CNS. The WHO classifies it into IDH mutant and the more aggressive IDH wild-type.

OBJECTIVE(S):

1. To identify the common locations of GBM in adult patients and its correlation to the survival rate of adult patients with GBM.

METHODOLOGY:

A descriptive case series study was conducted at the Department of Neurosurgery, Hayatabad Medical Complex, Peshawar, from January 2021 to January 2023. The study included 110 patients aged 20 years and above diagnosed with high-grade GBM. All patients had radiological and histopathological evaluations, followed by surgery, radiotherapy, and chemotherapy. Survival rates were analyzed based on tumor location. Data was analyzed using SPSS 25 by measuring the percentages of peripheral or central brain tumors and the survival rate of 6 and 12 months

RESULTS:

Among 110 patients, 57% were male and 43% female with a mean age of 55 ± 13.6 years. 17% were 20-40 years old, 43% were 41-60 years old and 40% people were 61 years old or above. Peripheral tumors were present in 74% of patients while 25.5% had central tumors. Survival of patients with peripheral tumors till 6 months was 87.8%, and till 12 months was 43.9%. In central tumors, survival till 6 months was 39.7%, and till 12 months was 3.6%.

CONCLUSION:

Tumor location and IDH mutation status significantly influence the prognosis of high-grade GBM. Personalized treatment approaches, integrating advanced surgical techniques and innovative therapies, are essential to improve clinical outcomes for GBM patients.

KEYWORDS:

Glioblastoma Multiforme, Karnofsky Performance Status

EFFICACY AND SAFETY OF TRANSRADIAL VERSUS TRANSFEMORAL APPROACH FOR SECONDARY ACCESS IN TRANSCATHETER AORTIC VALVE IMPLANTATION: A SYSTEMATIC REVIEW AND META-ANALYSIS

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INTRODUCTION:

Transcatheter aortic valve implantation (TAVI) requires primary access to deliver the valve and secondary access for angiographic guidance. Although transfemoral access (TFA) is common, alternative sites are gaining traction. This review compares the efficacy and safety of trans-radial (TRA) and TF secondary access.

OBJECTIVE(S):

1. To compare the efficacy and safety of trans-radial (TRA) versus transfemoral (TF) secondary access in transcatheter aortic valve implantation (TAVI).

METHODOLOGY:

A literature search was performed on MEDLINE, Embase, Cochrane, and Clinicaltrials.gov from inception to January 2025. Risk ratios (RR) and mean differences (MD) with 95% confidence intervals (CI) were pooled using standard methods. Random-effects meta-analysis was undertaken for dichotomous and continuous outcomes.

RESULTS:

Seven studies with 15,283 patients were included. TRA had lower risks of vascular complications (RR 0.47), major vascular complications (RR 0.45), bleeding (RR 0.53), major bleeding (RR 0.55), stroke (RR 0.62), all-cause mortality (RR 0.45), and acute kidney injury (RR 0.48). Both groups were comparable in life-threatening bleeding, myocardial infarction, pacemaker requirement, hospital stay, contrast volume, procedure time, and fluoroscopy time.

CONCLUSION:

TRA has superior outcomes over TFA for secondary access in TAVI. Large-scale randomized trials are needed to clarify the most optimal access sites for TAVI.

KEYWORD(S):

Aortic Stenosis, Transcatheter Aortic Valve Implantation, Radial Artery, Femoral Artery

COMPARISON OF METAGENOMIC NEXT-GENERATION SEQUENCING (MNGS) VS CULTURE FOR THE DIAGNOSIS OF INFECTED PANCREATIC NECROSIS: A SYSTEMATIC REVIEW AND META-ANALYSIS.

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INTRODUCTION:

Meta-genomic Next-generation sequencing is a newly developed diagnostic modality that can help in detecting Infected Pancreatic Necrosis.

OBJECTIVE(S):

1. To perform a meta-analysis evaluating the diagnostic accuracy of metagenomic next-generation sequencing (mNGS) and culture for detecting Infected Pancreatic Necrosis (IPN).

METHODOLOGY:

Systematic searches of electronic databases (inception–March 2025) assessed mNGS and culture sensitivity and specificity. Pooled estimates (95% CI) were calculated via random-effect analysis. SROC curves and AUC were derived using R 4.4.2 (2024-10-31 ucrt).

RESULTS:

A total of 29 studies were identified, of which 8 met the inclusion criteria. In the double-arm analysis, four studies directly comparing mNGS and culture were included. mNGS demonstrated a pooled sensitivity of 0.87 (95% CI: 0.72–0.95) and specificity of 0.83 (95% CI: 0.69–0.91), yielding an AUC of 0.92 (95% CI 0.79–0.94). Culture had a pooled sensitivity of 0.36 (95% CI: 0.23–0.51) and specificity of 0.83 (95% CI: 0.67–0.92), yielding an AUC of 0.52 (95% CI: 0.27–0.86). The difference in AUC is 0.39 (95% CI: 0.22 to 0.62; $p = 0.03$). In the single-arm analysis, eight studies assessing mNGS alone were included. Bivariate analysis showed a pooled sensitivity of 0.84 (95% CI: 0.77–0.90) and specificity of 0.78 (95% CI: 0.68–0.86), yielding an AUC of 0.88 (95% CI: 0.77–0.89).

CONCLUSION:

This meta-analysis suggests that mNGS is more accurate and sensitive than culture while offering comparable specificity for detecting IPN.

KEYWORDS:

Meta-genomic Next Generation Sequencing, Culture, Diagnostic Test, Infected Pancreatic Necrosis

COMPARATIVE EFFICACY AND SAFETY OF transcatheter Aortic Valve Implantation (TAVI) Versus Surgical Aortic Valve Replacement (SAVR) in Patients with End-Stage Renal Disease: A Systematic Review and Meta-Analysis

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INTRODUCTION:

TAVI and SAVR treat severe aortic stenosis, but risks and benefits differ in ESRD patients. ESRD increases surgical risk and complications and lowers survival. TAVI is less invasive with faster recovery, while SAVR remains the gold standard for younger, low-risk patients. This article compares their outcomes in ESRD.

OBJECTIVE(S):

1. To compare the outcomes of TAVI versus SAVR in ESRD patients, focusing on short-term mortality, hospital stay, costs, and complications.

METHODOLOGY:

A systematic literature review of PubMed, Embase, and Cochrane Library assessed TAVI versus SAVR in ESRD patients. Random-effects models were used to estimate risk ratios (RR) and odds ratios (OR) with 95% confidence intervals (CI). A p-value of <0.05 was considered statistically significant.

RESULTS:

TAVI showed lower 30-day mortality (RR: 0.45, 95% CI: 0.19–1.03, $p=0.06$) and in-hospital mortality (RR: 0.41, 95% CI: 0.28–0.61, $p<0.00001$). It reduced hospital stay (-7.43 days, $p<0.00001$) and costs (-\$60,402, $p=0.008$). TAVI increased pacemaker implantation (RR: 2.27, $p<0.00001$), vascular complications (RR: 1.38, $p=0.05$), and cardiac tamponade (RR: 0.36, $p=0.002$) but reduced major bleeding (RR: 0.61, $p=0.01$).

CONCLUSION:

TAVI improves survival, hospital stay, and costs but has higher complication risks. Careful patient selection is necessary.

KEYWORDS:

TAVI, SAVR, End-Stage Renal Disease, Aortic Stenosis, Mortality, Hospital Stay, Costs, Pacemaker Implantation, Vascular Complications, Cardiac Tamponade.

TRANSCATHETER VERSUS SURGICAL APPROACH IN TREATMENT OF AORTIC STENOSIS PATIENTS WITH CONCOMITANT CORONARY ARTERY DISEASE: A SYSTEMATIC REVIEW AND META-ANALYSIS

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INTRODUCTION:

As with CAD requires treating both valvular and coronary disease. SAVR + CABG is the standard, but TAVI + PCI offers a less invasive alternative. This meta-analysis compares their clinical outcomes.

OBJECTIVE(S):

1. To compare TAVI + PCI and SAVR + CABG on mortality, stroke, MACCE, coronary reintervention, AF, major bleeding, vascular complications, AKI, perioperative MI, pacemaker need, hospital stay, and long-term survival.

METHODOLOGY:

A systematic review and meta-analysis were conducted per PRISMA guidelines. Two randomized controlled trials and 12 observational studies, with 187,189 patients (31,298 in the TAVI + PCI group and 155,891 in the SAVR + CABG group), were analyzed.

RESULTS:

TAVI + PCI had lower 30-day mortality (OR: 0.63, 95% CI: 0.37–1.07, $p = 0.09$) and similar stroke rates (OR: 0.89, $p = 0.36$). It reduced atrial fibrillation risk (OR: 0.18, $p < 0.00001$), perioperative AKI (OR: 0.46, $p = 0.05$), and hospital stay (-3.45 days, $p = 0.004$). However, it increased coronary reintervention (OR: 4.32, $p < 0.00001$), vascular complications (OR: 3.01, $p = 0.002$), and pacemaker implantation (OR: 2.14, $p < 0.00001$). Long-term survival favored TAVI + PCI (OR: 0.63, $p = 0.0002$).

CONCLUSION:

TAVI + PCI offers benefits in selecting high-risk patients but requires careful risk assessment.

KEYWORDS:

TAVI, SAVR, PCI, CABG, Aortic Stenosis, Coronary Artery Disease, Mortality, Stroke, MACCE, Reintervention, Pacemaker Implantation, AKI, Hospital Stay.

ASSESSING THE QUALITY OF LIFE IN COPD AND ASTHMA PATIENTS AND ITS ASSOCIATION WITH RISK

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INTRODUCTION:

Chronic Obstructive Pulmonary Disease (COPD) and asthma significantly impact quality of life. COPD, caused by long-term irritant exposure, leads to irreversible lung damage, while asthma, triggered by allergens, causes reversible airway obstruction. Despite being manageable, both remain major public health concerns due to their high prevalence and associated impairment.

OBJECTIVE(S)

1. To assess the quality of life in COPD and asthma patients and identified risk factors contributing to impairment.

METHODOLOGY:

A cross-sectional study was conducted over four months at two public hospitals in Peshawar, KPK, involving 85 patients (≥ 18 years) diagnosed with COPD or asthma. The St. George's Respiratory Questionnaire (SGRQ) was used to assess impairment, and associations were tested using SPSS.

RESULTS:

Among 85 patients, 12 (14.1%) had minimal, 18 (21.2%) mild, 32 (37.5%) moderate, 18 (21.1%) severe, and 5 (5.9%) very severe impairment. COPD was more prevalent (56.4%) than asthma (43.5%). Significant associations were found between impairment and age ($p=0.025$), gender ($p=0.046$), income ($p=0.001$), smoking ($p=0.005$), occupation ($p=0.005$), area of residence ($p=0.043$), and access to heating ($p=0.035$) and cooling systems ($p=0.019$). Lower-income individuals and smokers had worse impairment scores.

CONCLUSION:

Age, gender, socioeconomic status, smoking, and occupational hazards contribute to greater impairment, while access to clean fuel, heating, and cooling systems improves outcomes. Understanding these factors can guide targeted interventions to enhance disease management and improve quality of life for COPD and asthma patients.

KEYWORDS

Asthma, COPD, Risk Factors

CLARIFYING THE TEMPORAL RELATIONSHIP: DOES EPISTAXIS PRECEDE, COINCIDE WITH, OR FOLLOW HYPERTENSION

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INTRODUCTION:

Arterial Hypertension is a growing public health concern affecting over one billion adults worldwide. As per the records of the World Health Organization, more than 50% of people with Hypertension are unaware of their condition. Epistaxis is a very common otorhinolaryngological problem affecting 60% of people during their lifetime.

OBJECTIVE(S):

1. To examine the relationship between hypertension and epistaxis, and to explore the potential mechanisms by which chronic vascular conditions contribute to the development of epistaxis.

METHODOLOGY:

Literature searches across PubMed, Embase, and Web of Science were conducted to investigate the Bidirectional Relationship Between Epistaxis and Hypertension.

RESULTS:

There is a complex relationship between hypertension and epistaxis, suggesting that chronic vascular conditions may play a significant role in the pathogenesis of epistaxis. High blood pressure may contribute to epistaxis through several mechanisms, including vascular remodeling, endothelial dysfunction, and increased vascular fragility. Additionally, hypertension may lead to the formation of microaneurysms and Charcot-Bouchard aneurysms, which can rupture and cause bleeding. Chronic hypertension may also lead to atherosclerotic changes and inflammation in the blood vessels, increasing the risk of epistaxis.

CONCLUSION:

Individuals with a history of hypertension and epistaxis may exhibit more extensive damage to the arterial tunica media within the nasal cavity compared to those experiencing epistaxis without hypertension. Examining the relationship between hypertension and epistaxis, the impact of anxiety should be taken into account. Anxiety-induced adrenergic responses to bleeding may contribute to elevated blood pressure levels observed in patients experiencing epistaxis.

KEYWORDS:

Hypertension, Epistaxis, Vascular fragility, endothelial dysfunction, nosebleeds, cardiovascular diseases

MEDICAL EDUCATION

APPROACH TOWARDS ARTIFICIAL INTELLIGENCE IN MEDICAL AND DENTAL EDUCATION AND CLINICAL PRACTICE- KNOWLEDGE, ATTITUDE, AND PRACTICES OF UNDERGRADUATE MEDICAL AND DENTAL STUDENTS OF KHYBER PAKHTUNKHWA, PAKISTAN

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Peshawar Medical College

INTRODUCTION:

Artificial Intelligence (AI) is rapidly transforming healthcare, offering advances in diagnostics, treatment planning, and personalized medicine. It is essential to assess future healthcare professionals' knowledge, attitudes, and practices (KAP) toward AI for its effective integration.

OBJECTIVE(S):

1. To assess the level of knowledge, attitudes, and practices regarding AI among undergraduate medical and dental students in Khyber Pakhtunkhwa (KP), Pakistan.
2. To identify barriers that hinder the adoption of AI in their education and clinical practice.

METHODOLOGY:

A cross-sectional survey of 501 undergraduate medical and dental students using Cluster sampling with probability proportional to size from various KP colleges was conducted between April 1 and June 1, 2024. Data was collected through a structured questionnaire and analyzed by chi-square test, Pearson correlation, and cronbach's alpha using SPSS-25.

RESULTS:

The mean age of participants was 21.81 ± 1.72 years, with a nearly equal gender distribution. Medical students comprised 79%, and dental students 21%, with 58.7% from private colleges. The knowledge level was low at 46.5% of the participants, moderate at 39.52%, and high at 15.96%. Attitudes toward AI were generally positive (61.27%), but engagement in AI-related practices was limited (51.09% low, 40.11% moderate, 8.78% high). Key barriers included lack of knowledge and expertise (71.66%), limited access to technical resources (69.66%), and inadequate hands-on training (53.89%). No significant gender differences were found in KAP ($p > 0.05$). However, attitude and practice showed a strong positive correlation ($p = 0.000$).

CONCLUSION:

Despite positive attitudes, a significant knowledge gap exists. Addressing these barriers through targeted educational initiatives and better AI resources could enhance AI adoption in healthcare.

KEYWORD(S):

Artificial Intelligence, Knowledge, Attitude, Practices, Medical and Dental Students.

EVALUATING AND COMPARING STRESS LEVELS AMONG MEDICAL, DENTAL, AND NURSING STUDENTS AND THEIR EFFECTS ON ACADEMIC PERFORMANCE

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INTRODUCTION:

Stress is a significant issue among students in professional health education, including medical, dental, and nursing fields. The rigorous coursework, extended study periods, and high expectations place these students at greater risk of stress, potentially affecting their academic performance.

OBJECTIVE(S):

1. To evaluate and compare stress levels among medical, dental, and nursing students and assess its impact on their academic outcomes.

METHODOLOGY:

A cross-sectional study was conducted among medical, dental, and nursing students at Peshawar Medical College, Peshawar Dental College, and Rufaidah Nursing College. Using probability random sampling, 332 students were selected. Data were collected through a validated questionnaire. Stress levels were measured by MSSQ; however, academic performance was done for the student's last annual exam results.

RESULTS:

Out of the total participants (332), 49.1% were medical, 13.3% were dental, and 37.7% comprised nursing students. Females made up 57.2% of the participants, while males accounted for 42.8%. Female students reported higher levels of stress compared to males. Nursing students had the highest proportion of severe stress (16%), followed by dental students (13.6%) and medical students (7.4%). A significant negative correlation ($r = -0.243$, $p = 0.0003$) was observed between stress levels and academic performance, indicating that increased stress is linked to lower academic outcomes.

CONCLUSION:

The study found high stress levels among healthcare students, with nursing students most affected. The negative correlation with academic performance highlights the need for targeted stress management programs to enhance student well-being, academic success, and the development of competent healthcare professionals.

KEYWORDS:

Medical, Dental, Nursing, Stress, Academic Performance

NURSING INTERNSHIP STUDENTS' PERCEPTION OF CLINICAL LEARNING PRACTICE IN A PRIVATE SECTOR HOSPITAL IN PESHAWAR, PAKISTAN

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INTRODUCTION:

Clinical education is an essential component of nursing education that enables students to apply their academic knowledge in healthcare environments. Clinical learning experiences, however, differ greatly, especially in private hospitals where students' perspectives are influenced by institutional support, workload, and mentoring.

OBJECTIVE(S):

1. To identify the perception of nursing internship students about clinical learning practice.
2. To identify the perception of internship students about clinical instructors.

METHODOLOGY:

A cross-sectional study was conducted over six months at five private hospitals in Peshawar. Nursing internship students of sample size 152 were chosen as a sample using a non-probability convenience sampling technique. Data were gathered using a modified Student Clinical Learning Culture Survey. Descriptive statistics and t-tests were used to investigate differences in students' experiences according to gender and marital status using SPSS 25.

RESULTS:

According to the results, 13.8% of students said the setting was encouraging, and 80.9% said the learning culture was moderate. Insufficient advice was seen by 16.4% of students, whereas 57.2% of students assessed instructor assistance as moderate. Marital status and gender did not significantly affect the results. The study shows that most students were sent to a few hospitals, and inequalities in clinical placements were also found, which may limit learning opportunities.

CONCLUSION:

The study emphasizes the necessity of greater institutional support, structured clinical instruction, and mentorship in private-sector hospitals to maximize nursing students' learning experiences. Addressing these elements is essential for developing skilled, self-assured nursing workers.

KEYWORDS:

Nursing, Perception, Internee, Clinical Learning Practice.

INVESTIGATING THE ENGAGEMENT OF UNDERGRADUATE MEDICAL STUDENTS IN PESHAWAR WITH MEDICAL MISINFORMATION ON SOCIAL MEDIA

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INTRODUCTION:

Misinformation is information based on unscientific evidence that is not true or is misleading due to the lack of current scientific knowledge. Health misinformation is widespread on social media, and it can result in adverse health outcomes by hampering patients' decision-making ability to get health care.

OBJECTIVE(S):

1. To explore the engagement of undergraduate medical students with medical misinformation on social media.

METHODOLOGY:

An analytical cross-section study was conducted on medical students of Peshawar, and a questionnaire was given to the students. Randomized clustered sampling was done, and the data was then used for Descriptive, Binary Linear Regression, and Thematic analysis with the help of SPSS v26. Data was collected from 28 July to 12 October 2024.

RESULTS:

All respondents used social media, with 40.8% and 37.8% spending 1-3 and 4-6 hours daily on it, respectively. Most students (91.8%) believed that medical professionals should verify shared medical information, and 89.5% supported teaching students the appropriate methods to correct misinformation. The study effectively predicted misinformation engagement risk ($p=0.022$) and exposure frequency ($p<0.001$). The thematic analysis identified four themes for confirming and three for correcting misinformation.

CONCLUSION:

This study concludes that medical students should be taught methods to correct and confirm medical misinformation. Students are also interested in reducing its spread, which can be achieved through timely education on effective correction strategies or approaches.

KEYWORDS:

Misinformation, Interaction, Internet Search, Social Media & Misleading Information.

ACADEMIC WORKSHOP AND ITS IMPACT ON LEARNING

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INTRODUCTION:

Academic workshops' interactive and hands-on format encourages active participation and in-depth learning, which helps students to learn and remember new information. This study assesses how an academic workshop influences the learning of medical students and graduates.

OBJECTIVE(S):

1. To investigate how academic workshops, affect the learning of medical graduates.

METHODOLOGY:

This cross-sectional study was conducted in the Department of Medicine, Khyber Teaching Hospital Peshawar. A workshop on Artificial Intelligence was organized on May 17, 2023. A total of 25 workshop participants took part in this study. The study duration was two months. Participants in our study comprised willing graduate medical students at Khyber Medical College, House officers of Khyber Teaching Hospital, and Postgraduate trainees of KTH. Pre-test and post-test during this one-day workshop, and then an online evaluation after one month was conducted to determine the impact of this academic event; ANOVA and t-test were utilized. All data were recorded on R-Data analysis and analyzed.

RESULTS:

The t-test result showed a t-value of -1.11 and a p-value of 0.044. The p-value is less than 0.05, suggesting a significant difference in the mean scores between the tested groups. ANOVA results show an F-value of 1.495 and a p-value of 0.246. The knowledge of medical undergraduates regarding artificial intelligence was better compared to that of HOs and PGs. PGs exhibited a decline in their learning impact, as evidenced by t-test, ANOVA, and post-hoc analysis.

CONCLUSION:

Academic workshops narrow the knowledge gap between practice and theory by integrating active learning methodologies, adhering to learning theories, and encouraging skill development.

KEYWORDS:

Academic Workshop, Artificial Intelligence, Medical Professionals

ASSESSMENT OF CORE COMPETENCY OF URETHRAL CATHETERIZATION BY MALE HOUSE OFFICERS

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INTRODUCTION:

Iatrogenic urethral trauma is the most common cause of urethral injury. Urethral catheterization is a core competency in the psychomotor domain of the renal module in the final year of MBBS and is considered an essential procedure by the PMDC.

OBJECTIVE(S):

1. To assess the core competency of urethral catheterization among male house officers of HMC and KTH Peshawar.

METHODOLOGY:

A cross-sectional knowledge, attitude, and practices (KAP) survey focused on simplicity was conducted at KTH, under IKD, HMC, from August 15 to 30, 2024. 30 male house officers were selected using the open EP technique. A structured proforma was used for systematic data gathering and analyzed using SPSS version 20 for statistical insights.

RESULTS:

A survey on urethral catheterization among 30 house officers (HOs) revealed that 12 learned during medical school and 19 learned during house job training. Paramedics primarily performed catheterization (20 HOs). Aseptic measures were followed, but all used insufficient xylocaine jelly. Only 12 waited as recommended. Errors were common—20 applied force against resistance, and 16 encountered urethral bleeding. Infection was the most recognized complication (26 HOs). Confidence levels showed 10 HOs feeling confident, and 15 had catheterized 10–19 male patients. Urinary retention was the most common indication (22 HOs).

CONCLUSION:

There was significant ignorance regarding the theoretical and practical aspects of urethral catheterization among male house officers.

KEYWORDS:

Urology, Catheterization, Urethra, Injury

PERCEPTION OF UNDERGRADUATE STUDENTS REGARDING MEDICAL ETHICS AT KHYBER MEDICAL COLLEGE, PESHAWAR

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INTRODUCTION:

Ethics is defined as the science of ideal human character or moral obligation. Bioethics is a practical discipline that provides a structured approach for identifying, analyzing, and resolving ethical issues in clinical medicine. Pakistan Medical and Dental Council (PMDC) approved a draft in August 2002 regarding teaching medical ethics at all levels, but practical steps have not been taken since. Many studies have highlighted the significance of including medical ethics in curricula.

OBJECTIVE(S):

1. To assess the perception of undergraduate medical students regarding medical ethics.

METHODOLOGY:

This descriptive cross-sectional study was conducted at Khyber Medical College. Data was collected from 223 medical students through convenient sampling using an online questionnaire. SPSS v22.0 was used for data analysis to calculate frequency and percentages. The study was done from May 2024 to December 2024, including students who were present at the time.

RESULTS:

The study included a total of 223 medical students with a gender distribution of 40.8% males and 59.2% females. Among the participants, 26.9% were 1st year, 26.5% 2nd year, 18.8% 3rd year, 25.6% 4th year and 2.2% 5th-year medical students. 65% of participants believed that doctors must have knowledge about medical ethics and should implement it, and 33.6% considered it as important.

CONCLUSION:

Most medical students possess a reasonable understanding of medical ethics. However, it should be emphasized that medical ethics are practically implemented during their education, ensuring that when they become doctors, they know how to handle moral dilemmas.

KEYWORDS:

Medical Students, Medical Ethics, Undergraduate, Curriculum

EVALUATION OF STUDENTS' PERCEPTION OF INTEGRATED MODULAR SYSTEM

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INTRODUCTION:

Integrated modular system is a structured program, that integrates basic and clinical sciences both horizontally and vertically. The evaluation of the effectiveness of integrated modular systems among students of different medical colleges is essential.

OBJECTIVE(S):

1. To determine the students' perception regarding integrated Modular system.

METHODOLOGY:

An analytical cross-sectional study at Gomal Medical College in Dera Ismail Khan utilized a quantitative approach with undergraduate participants. The sample size was determined using the Raosoft calculator, and stratified random sampling was employed. A self-administered questionnaire scored on a five-point Likert scale assessed students' perceptions, incorporating four sub-variables and three demographic variables. Scores were categorized as poor, fair, or good based on Bloom's criteria. SPSS software was used to compute frequencies and percentages and to perform chi-square and Fisher's exact tests to determine associations.

RESULTS:

Among 200 participants, 72.5% of students had a Fair perception, 16.5% had a good perception, and 11.5% had a poor perception. There was no significant association between the gender or residence of students and their total perception scores. There was a statistically significant association between the year in which students were studying and their total perception score.

CONCLUSION:

Overall, students have an average perception score about the integrated modular system. Students were positive about the improvement in learning behavior of students and future outcomes. The students' feedback displayed concern over the achievement of the aims and objectives of IMS and the availability of resources.

KEYWORDS:

Integrated Modular System (IMS), Perception, Medical Students.

ONLINE LEARNING AND CONVENTIONAL LEARNING METHODS: A CROSS-SECTIONAL STUDY AMONG THE STUDENTS OF KHYBER MEDICAL COLLEGE, PESHAWAR

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INTRODUCTION:

Online educational resources have rapidly expanded for undergraduate medical students, integrating conventional and digital tools such as recorded lectures and learning management systems (LMS). The COVID-19 pandemic significantly accelerated the shift toward online teaching. To establish an optimal blended approach for enhanced learning outcomes the study assesses students' perceptions of both approaches to medical education.

OBJECTIVE(S):

1. To analyze and compare online and conventional teaching methods in medical education.

METHODOLOGY:

A cross-sectional study was conducted from March to September 2024 among 388 undergraduate students at Khyber Medical College, Peshawar. A validated online questionnaire assessed the effectiveness and satisfaction of online versus conventional learning using a five-point Likert scale. Nine parameters evaluated effectiveness, while five measured satisfaction. Data analysis was performed using SPSS version 20, employing Pearson's correlation and one-way ANOVA with post hoc analysis to examine associations.

RESULTS:

Most respondents found online learning more convenient and effective in addressing individual learning needs, particularly through recorded lectures. Over half reported high satisfaction with e-learning resources and instruction. However, practical aspects showed lower effectiveness and satisfaction levels. Pearson's correlation indicated a weak negative association between age and satisfaction ($r = -0.072$). One-way ANOVA revealed a significant correlation between academic year and satisfaction ($p = 0.008$), with notable differences between 1st- and 4th-year scores ($p = 0.005$).

CONCLUSION:

E-learning significantly enhances medical education and should be integrated with conventional methods to optimize outcomes.

KEYWORDS:

E-learning, Medical education, Online learning, Student perceptions, Satisfaction, Effectiveness

MULTIDIMENSIONAL IMPACT OF LIFESTYLE ACTIVITIES ON CONTENTMENT AMONG MEDICAL STUDENTS: A QUALITATIVE PHENOMENOLOGICAL STUDY

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INTRODUCTION:

Medical students face unique challenges that influence their overall well-being. This study explores how lifestyle activities shape contentment among medical students, offering insights into factors that enhance or hinder satisfaction.

OBJECTIVE(S):

1. To investigate the factors contributing to life contentment among medical students.

METHODOLOGY:

A transcendental phenomenological approach was applied. One-on-one interviews were conducted with 1st, 2nd, and 3rd year MBBS students from Khyber Medical College, Peshawar, until data saturation. Participants were selected through convenience sampling. The interviews were transcribed and analyzed using reflexive thematic analysis with NVivo 15, generating codes, sub-themes, and themes.

RESULTS:

Four main themes emerged as influential factors in participants' contentment; Academics (good academics and weak academics), Personal Passions (leisure activities, physical activities and self-expressive activities), Self-Growth and Psychological Resilience (disruptive life patterns, internal struggles that cause discontentment and mindsets that foster contentment), and Social Engagement (positive and supportive Family Relationships, Friendship and Peer Support, Acts of Kindness and Altruism, Family Challenges and Tensions, Struggles in Friendships and Social Circles, Emotional Struggles, Opposite Gender interactions, Positive Impact of social media and Negative Impact of social media)

CONCLUSION:

This study highlighted that lifestyle activities such as Positive social relationships, academic achievements, and self-improvement has a significant role in shaping medical students' contentment.

KEYWORDS:

Contentment, Lifestyle Activities, Social Engagement, Medical Students, Phenomenological Study, Reflexive Thematic Analysis, Life Satisfaction

EXPLORING THE CHALLENGES AND MIGRATION TRENDS OF MEDICAL STUDENTS AND GRADUATES: A STUDY ON THE FACTORS DRIVING BRAIN DRAIN

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INTRODUCTION:

Brain drain, the emigration of skilled professionals, is a critical issue in Pakistan's medical sector. Driven by academic, financial, and mental health challenges, this trend jeopardizes healthcare quality and accessibility.

OBJECTIVE(S):

1. To identify academic, financial, and mental health challenges faced by medical students in Pakistan.
2. To assess migration intentions and determine key factors influencing brain drain to inform retention strategies.

METHODOLOGY:

A cross-sectional study was conducted from January to June 2025, surveying 500 medical students from private and public medical colleges across Pakistan. Data on demographics, academic experiences, mental health, financial burdens, and migration aspirations were collected via questionnaires and analyzed using descriptive statistics using SPSS.

RESULTS:

The study found 66% of medical students plan to migrate, targeting USA (61.3%), UK (62.5%), and Australia (36.3%) for career opportunities (84%), better education (55.6%), and financial gains (48.1%). Heavy workloads (50%), academic pressure (58.9%), and anxiety (51.2%) prevail, with 60.4% lacking mental health support. Financially, 91.6% depend on family, and tuition fees (43.9%) burden them. Though 40% see migration harming local healthcare, 53.5% find it career-enhancing despite costs (36.4%) and visa hurdles (64%). Suggested solutions include higher salaries (76.1%) and better infrastructure (73.9%), highlighting urgent needs for support and incentives to retain talent.

CONCLUSION:

Brain drain endangers Pakistan's medical sector as students face academic, financial, and mental health struggles. Policymakers must improve support, offer scholarships, and enhance working conditions to retain talent and strengthen healthcare.

KEYWORDS:

Mental Health, Medical Students, Brain Drain

MEDICINE AS A CAREER CHOICE: A COMPREHENSIVE EXAMINATION OF INFLUENTIAL FACTORS AMONG KHYBER MEDICAL COLLEGE STUDENTS THAT MADE THEM OPT IN/OUT OF MEDICAL PROFESSION

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INTRODUCTION:

Medical schools aim to graduate professional physicians equipped with knowledge and competency to promote national health and well-being. However, medical undergraduate training is emotionally demanding and can lead to high levels of psychological problems in medical students.

OBJECTIVE(S):

1. To explore the factors that prompt students at Khyber Medical College to either opt in or out of medical careers.

METHODOLOGY:

A descriptive cross-sectional study was employed using a random sample of 301 students at Khyber Medical College, Peshawar from June to August 2024. Students from all five professional years of the MBBS program participated in this study. Data was collected using both an online questionnaire and printed forms. Frequency and percentages were calculated for categorical variables through SPSS.

RESULTS:

The most common influencing factor for the students was "parental pressure" (45.8%), followed by "peer pressure/social influence" (12%). Out of 301 students, 13.62% regretted their career choice, listing "limited personal time" 4%, "academic difficulties" 2.3%, and "very lengthy academic pursuit" (2.7%) as the main reasons. More than one-fifth of the students (21.9%) reported experiencing anhedonia every week, while 22.3% acknowledged feeling down, depressed, and hopeless at least once each week.

CONCLUSION:

Many students at Khyber Medical College have chosen to pursue a career in the medical profession out of personal interest. Most of them were influenced by parental pressure when making this decision. Approximately, one-eighth of the respondents regretted their career choice and wanted to opt out. It's worth noting that almost all of these students have experienced symptoms of depression and anhedonia.

KEYWORDS:

Career choice, Medical, Students

PERCEPTION OF MEDICAL STUDENTS TOWARDS ONLINE LEARNING

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INTRODUCTION:

In 2020, the whole world was subjected to the COVID-19 pandemic. Similar to the students of other educational institutes, medical students also adopted online teaching methods for their learning by using different apps like Google Meet, Zoom, and Microsoft Teams etc.

OBJECTIVE(S):

1. To find out the perception of medical students towards online learning.

METHODOLOGY:

A Cross-sectional study was conducted at Wah Medical College (WMC). The study duration was 6 months from Nov 2023- May 2024. The sample size was all six hundred students enrolled at WMC. Data Collection was done through a Questionnaire via Google Forms. Analysis was done through SPSS Version-23 to evaluate the perception of students in regard to online learning. A chi-square test was employed for data assessment.

RESULTS:

Out of 540 participants, 60.5 % preferred virtual learning only when necessary due to uncontrollable circumstances such as COVID-19 or law enforcement issues. Over 55% reported difficulties practicing practical skills, with more than 58% preferring traditional in-person instruction when given a choice between both methods. Of all participants, 16.7% expressed being very satisfied, followed by 22.2% somewhat satisfied, and then 31.1% neither dissatisfied nor satisfied; finally concluding with roughly one-third (29.8%) expressing some degree of dissatisfaction towards their experience with remote instruction. Females displayed higher satisfaction rates (40.4%) compared to male counterparts (36.6%), with a statistical significance of (p-value=0.001).

CONCLUSION:

This study indicates that undergraduate medical students expressed moderate satisfaction with existing remote teaching-learning programs caused by pandemic conditions.

KEYWORDS:

Satisfaction, Medical Students, Virtual Learning Environment, Practical Skills

A CROSS-SECTIONAL STUDY ON MEDICAL STUDENTS OF KPK REGARDING UNCERTAINTY ABOUT THEIR FUTURE CAREER AND ITS MAJOR FACTORS

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INTRODUCTION:

Career uncertainty affects many aspects of medical education, causing long-lasting pessimistic changes in personality. Medical education in Pakistan faces challenges regarding career uncertainty among students.

OBJECTIVE(S):

1. To calculate the frequency of career uncertainty among medical students in KPK and identify its major contributing factors.

METHODOLOGY:

This cross-sectional study was conducted from October 1 to December 15, 2024, using a Likert scale-based questionnaire. It included 226 medical students from various KPK medical colleges, with 151 (66.5%) from PUBLIC AND 75 (33.5%) from private colleges. Participants included students from the first to final year of MBBS. A 30-point scoring criterion was used to assess uncertainty levels, with scores ≤ 20 indicating uncertainty.

RESULTS:

Of the 226 participants, 119 (52.6%) were males and 107 (47.3%) were females. The study revealed that 27 (11.9%) students were uncertain about their careers, while 199 (88.1%) were certain. Among uncertain students, 15 were females and 12 were males, showing no significant gender association ($p=0.363$). However, the year of study showed a significant association ($p=0.007$), with final-year students showing higher uncertainty (37.03%). The primary factors contributing to uncertainty were "Seeing many doctors jobless" (37.03%), "Unjustified academic stress" (22.22%), and "Inadequate educational and training facilities" (18.5%).

CONCLUSION:

While the overall prevalence of career uncertainty in KPK is relatively low, there is a significant increase in uncertainty among final-year students. The main contributing factors are unemployment concerns, academic stress, and inadequate training facilities.

KEYWORDS:

Students, Medical, Career Choice, Education, Uncertainty

ASSESSING THE PERCEPTION OF MEDICAL STUDENTS ABOUT THE EFFECTIVENESS OF TEAM-BASED LEARNING ON MEDICAL STUDENTS OF KPK

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INTRODUCTION:

Team-Based Learning (TBL) is an active and effective learning strategy widely adopted in medical education. This study aims to assess medical students' perceptions of TBL's impact on learning outcomes and its future implementation in KPK.

OBJECTIVE(S):

1. To determine medical students' perceptions of TBL's effectiveness on learning outcomes and its future role in medical education.

METHODOLOGY:

A cross-sectional study was conducted from six private medical colleges in KPK, from March to September 2024. A sample of 346 MBBS students was selected using Raosoft's sample size calculator (95% confidence level, 5% margin of error). A pre-validated 13-item questionnaire was used. A non-probability purposive sampling method was employed, and data were collected from colleges incorporating TBL. Data was analysed by calculating the frequency and percentages using SPSS.

RESULTS:

Among 346 participants, 210 (61%) were males, and 136 (39%) were females. TBL significantly enhanced communication skills (78%), motivation (78.3%), long-term memory (76%), teamwork (74.2%), problem-solving (65.6%), and time management (65.8%). Student-teacher relationships, academic scores, and independent learning improved by 59.5%, 59.2%, and 55.4%, respectively. A majority (76%) supported TBL in the curriculum, with 86.4% recommending weekly sessions. A significant association was found between TBL effectiveness and gender ($p = 0.004$) and institution ($p = 0.04$).

CONCLUSION:

TBL is an effective and interactive teaching strategy, that improving academic performance and essential skills. Most students support weekly TBL sessions, highlighting its role in medical education and professional development.

KEYWORDS:

Team-Based Learning, Medical Education, Learning Outcomes, Student Perception, KPK.

PREVALENCE AND IMPACT OF CHATGPT ADOPTION IN MEDICAL EDUCATION AND CLINICAL PRACTICE: A CROSS-SECTIONAL STUDY IN PESHAWAR

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INTRODUCTION:

Artificial Intelligence (AI) is transforming healthcare education and clinical practice. ChatGPT, an AI-powered conversational tool, is widely used for information retrieval, diagnostic support, and research, but overreliance may hinder critical thinking and clinical judgment.

OBJECTIVE(S):

1. To assess ChatGPT use, its impact on academic performance and clinical decision-making, and user perceptions of its reliability among medical students and physicians in Peshawar.

METHODOLOGY:

A six-month observational cross-sectional study was conducted at four medical institutions in Peshawar, involving 370 participants selected through non-probability sampling. After obtaining written informed consent, data was collected using a structured, self-administered questionnaire. The questionnaire included demographics, ChatGPT usage patterns, and perceptions of reliability and impact. Data was analyzed using SPSS V.27.

RESULTS:

Findings revealed varying perceptions and usage patterns across different academic levels. Second-year students showed a strong positive association with considering ChatGPT as a reputable information source ($p < 0.001$), while fourth-year students also rated it as reliable ($p < 0.01$). Fifth-year students reported significant use for self-diagnosis ($p < 0.05$). However, an overall negative correlation was observed between excessive ChatGPT use and academic performance ($p > 0.05$), suggesting that overdependence may adversely affect critical reasoning skills.

CONCLUSION:

ChatGPT is a valuable tool, with lower-year students viewing it as reliable and higher-year students using it for self-diagnosis. However, excessive use negatively impacts academic performance and critical reasoning, highlighting the need for balanced use.

KEYWORDS:

ChatGPT, Artificial Intelligence, Medical Education

MOTIVATIONAL INFLUENCES ON VOLUNTEER ACTIVITIES AND FIELD SATISFACTION: INSIGHT FROM MEDICAL STUDENTS IN PESHAWAR, PAKISTAN

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INTRODUCTION:

Volunteer work enhances life satisfaction and mental well-being through social and community engagement. However, the impact of volunteering on medical students' satisfaction with their chosen field and stress management has been less explored. Given the demanding nature of medical education, understanding volunteering's impact on field satisfaction and well-being fosters a positive educational environment.

OBJECTIVE(S):

1. To assess the level of field satisfaction, the extent of volunteering activities, and the correlation between volunteering activities and field satisfaction.

METHODOLOGY:

A cross-sectional analytical study was conducted on 329 medical students from 1st May 2024 to 15th July 2024, in Northwest School of Medicine, across seven medical colleges. The sample size was determined using OpenEpi (95% CI) and selected by random sampling. Data was collected through a structured questionnaire covering demographics, volunteer experience, motivations, and satisfaction levels. Statistical analysis, including Pearson Chi-Square tests, was performed using SPSS version 26.

RESULTS:

Of the participants, 183 (55.6%) had volunteer experience, showing significantly higher field satisfaction ($p < 0.001$) than non-volunteers. Additionally, volunteers reported lower stress levels ($p = 0.028$), with motivations including helping others, skill development, and social connections. Time constraints were a significant barrier for non-volunteers, lack of institutional support and limited involvement.

CONCLUSION:

Volunteer activities positively influence field satisfaction and reduce stress levels in medical students, suggesting their integration into medical education may enhance students' well-being. Addressing logistical barriers and expanding volunteer support in academic institutions could further benefit students and the communities they serve.

KEYWORDS:

Volunteer Activities, Field Satisfaction, Stress Reduction

LOW-COST PEER-TAUGHT VIRTUAL RESEARCH WORKSHOPS FOR MEDICAL STUDENTS IN PAKISTAN: A SCALABLE SOLUTION

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INTRODUCTION:

Pakistan contributes less than 0.1% of global research publications, with limited research training and mentorship for students. Online learning offers an opportunity for cost-effective, peer-led research education.

OBJECTIVE(S):

1. The effectiveness of peer-taught virtual workshops in enhancing research knowledge and skills among medical students in Pakistan.

METHODOLOGY:

A quasi-experimental study was conducted from May to October 2024 with 482 medical students from 36 colleges in Pakistan. Eight peer-led virtual workshops on Microsoft Teams covered key research modules. Research skills were assessed using pre- and post-workshop quizzes and self-efficacy scores. Descriptive statistics were used for demographics, while t-tests to compare pre-and post-webinar mean scores to assess improvements, using SPSS v.27

RESULTS:

Confidence levels in structuring proposals rose from 5.23 to 7.27, questionnaire development from 5.16 to 7.21, and statistical analysis from 3.77 to 6.99 (all $p < 0.001$). Similarly, manuscript writing improved from 3.64 to 6.79 and presentation design from 4.60 to 7.35. Knowledge metrics also increased substantially, with proposal familiarity growing from 45% to 76%, statistical interpretation from 33% to 71%, and peer review understanding from 28% to 68%. Post-intervention, 99.2% of participants reported research confidence and 71.4% initiated new projects (all $p < 0.001$).

CONCLUSION:

Peer-led virtual workshops significantly enhanced research skills, providing a scalable, low-cost model for improving research capacity among medical students in resource-limited settings.

KEYWORDS:

Virtual Research Workshops, Medical Students, Research Education

INTER-PROFESSIONAL EDUCATION: A WAY FORWARD

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INTRODUCTION:

The World Health Organization (WHO) Framework for Action on Interprofessional Education (IPE) and Collaborative Practice (2010), states that “*Interprofessional education occurs when two or more professionals learn about, from and with each other to enable effective collaboration and improve health outcomes*”.

OBJECTIVE(S):

4. Assess the awareness, perceptions, and challenges of IPE among future healthcare professionals.

METHODOLOGY:

A structured questionnaire was conducted, gathering responses from 105 participants over 6 days from the healthcare sector including students from MBBS, BDS, Pharma, Nursing, Psychology, and, others, assessing them based on “knowledge & skills” and “attitudes & perceptions”.

RESULTS:

The results revealed that only 37% of respondents had prior knowledge of IPE, while 63% were either unfamiliar with the concept or had limited understanding. Furthermore, 42% believed IPE could significantly improve teamwork and patient outcomes, but 58% expressed skepticism or uncertainty about its practical implementation. Our findings suggest that systemic challenges particularly due to hierarchical mindsets hinder its adoption in our setting.

CONCLUSION:

This study underscores the urgent need for structured IPE initiatives in our healthcare education system. By bridging the knowledge gap and fostering teamwork across disciplines, we can cultivate a healthcare workforce better equipped to deliver high-quality, patient-centered care, ensuring long-term improvements in collaborative practice and patient outcomes.

KEYWORDS:

Inter-professional Education, Cross-sectoral Inter-Professional Collaboration, Patient Outcomes, Healthcare Sector.

INNOVATIVE APPROACH TO BASIC LIFE SUPPORT TRAINING: A STUDY OF KNOWLEDGE AND SKILLS RETENTION AMONG MEDICAL STUDENTS OF PESHAWAR

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INTRODUCTION:

Basic Life Support (BLS) is a critical life-saving skill that all healthcare professionals including undergraduate medical students should possess, but knowledge and training gaps exist among medical students.

OBJECTIVE(S):

1. To identify gaps in BLS knowledge and skills among medical students in Peshawar.

METHODOLOGY:

This study employed a descriptive cross-sectional design, utilizing a non-probability convenient sampling technique to recruit 384 medical students from public and private medical colleges in Peshawar. Data was collected through a structured, pre-validated questionnaire distributed via online platforms (Google Forms and WhatsApp). The questionnaire assessed socio-demographic information, and BLS knowledge (17 questions), and categorized knowledge levels (poor, medium, good). Data analysis was performed using SPSS software, with the Chi-square test used to examine associations between previous BLS training and knowledge levels.

RESULTS:

The mean age of participants was 21.67 ± 3.679 years. 69.6% reported no formal BLS training. BLS knowledge levels were: 40.10% poor, 52.34% medium, and 7.55% good. A significant association ($p < 0.01$) existed between previous BLS training and higher knowledge levels. Notably, a higher proportion of males demonstrated medium to higher knowledge levels (55.1%) compared to females (44.9%).

CONCLUSION:

This study highlights the need for enhanced BLS training among medical students. The findings underscore the importance of comprehensive training programs to bridge knowledge gaps and improve emergency response preparedness.

KEYWORDS:

Basic Life Support, Medical Students, Knowledge Assessment, BLS Training, Emergency Response, Cross-sectional Study, Healthcare Education.

MEDICAL STUDENT BURNOUT IN KHYBER PAKHTUNKHWA: EXPLORING COPING MECHANISMS AND INSTITUTIONAL STRESSORS, THROUGH A MIXED-METHOD ANALYSIS

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INTRODUCTION:

Burnout is a serious issue globally in healthcare education and practice, with most research focusing on high-income contexts.

OBJECTIVE(S):

2. To assess burnout levels and identify stressors and coping in medical students.

METHODOLOGY:

This mixed-method sequential explanatory study was conducted over 6 months. The quantitative phase used the Maslach Burnout Inventory to assess burnout prevalence among 300 MBBS and BDS students in KPK (response rate 80%). The qualitative phase involved semi-structured interviews with 20 students to explore their perceptions of burnout factors and coping strategies. Descriptive statistics and thematic analysis were used to analyze the data.

RESULTS:

The quantitative results showed that 52% of medical students reported high levels of burnout. Key drivers included heavy academic workload, lack of work-life balance, and uncertainty over career prospects. The qualitative interviews revealed that students employed various coping strategies such as time management, seeking social support, and engaging in extracurricular activities. However, institutional factors like lack of mental health resources and unsupportive faculty were major barriers to effectively managing burnout.

CONCLUSION:

The study identifies key institutional stressors and personal coping mechanisms, informing targeted interventions to support student well-being and strengthen the healthcare system.

KEYWORDS:

Medical Student Burnout, Coping Strategies, Institutional Stressors, Mixed-Method

MYOCARDIAL INFARCTION AWARENESS AND FIRST AID KNOWLEDGE AMONG FUTURE HEALTHCARE PROVIDERS: AN INSTITUTIONAL-BASED CROSS-SECTIONAL STUDY

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INTRODUCTION:

Cardiovascular diseases, especially myocardial infarction (MI), are a leading cause of death globally. This study evaluates medical and dental students' knowledge of MI symptoms and first-aid response at Bacha Khan Medical and Dental College.

OBJECTIVES:

- 1) To assess the level of knowledge of symptoms of myocardial infarction among the undergraduate medical and dental students.
- 2) To determine the extent to which the students of Bacha Khan Medical and Dental College can take appropriate response actions to MI.
- 3) To compare the influence of age, gender, course [MBBS or BDS], and year of interest on knowledge and response actions of myocardial infarction symptoms.

METHODOLOGY:

259 students participated in a cross-sectional study by responding to a structured questionnaire designed to assess their knowledge of MI symptoms, related first-aid practices, and their familiarity with automated external defibrillators (AEDs) and their competency in administering cardiopulmonary resuscitation (CPR). The data was analyzed by measure frequency and percentages and Chi-square test was applied using SPSS v26.

RESULTS:

The study shows that 51% had good MI-related first-aid knowledge, and 57.1% recognized MI symptoms. Female students had better symptom knowledge than males (71.2% vs. 52.3%, $p = 0.007$). Knowledge improved with age and academic year, with clinical-year students scoring higher. First-aid training significantly improved knowledge (60.5% vs. 43.4%, $p = 0.006$) and CPR confidence (86.8% vs. 65.5%, $p < 0.001$).

CONCLUSION:

Although female students demonstrated a higher level of academic understanding of MI symptoms, they still need to improve their practical skills. Comprehensive first-aid training programs must be prioritized to provide medical students with the skills they need to handle cardiovascular emergencies.

KEYWORDS:

Myocardial Infarction, First Aid, CPR, Medical Students, Emergency Response, MI Awareness, Training

ASSESSMENT OF CLUBFOOT AWARENESS AMONG MEDICAL STUDENTS AND PHYSIOTHERAPY STUDENTS

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INTRODUCTION:

Clubfoot or congenital talipes equinovarus is a prevalent musculoskeletal congenital disorder characterized by forefoot adduction, cavus foot, hindfoot varus, and equinus. Both genetic and environmental factors are reported to be the main risk factors. Lack of awareness is considered a barrier for cases management. The Ponseti method is a low-cost, nonsurgical, and effective method of treatment.

OBJECTIVE(S):

1. To assess the general awareness of clubfoot among medical and physiotherapy students.
2. To compare the levels of knowledge about clubfoot between medical students and physiotherapy students.

METHODOLOGY:

This cross-sectional study was conducted on medical students of Peshawar Medical College and DPT students of NWSM, RMI, and CECOS University through a convenient sampling technique with a sample size of 170 calculated through an online epi calculator. Data was collected using a validated and reliable 11-item questionnaire designed to assess general awareness of clubfoot. Data was analyzed through SPSS 25. Descriptive statistics were used to assess awareness and a chi-square test to compare their level of knowledge.

RESULTS:

The overall awareness was generally high. The results indicated no statistically significant difference in knowledge between the two groups across all assessed categories ($p > 0.05$).

CONCLUSION:

These findings suggest that both groups have similar levels of awareness and knowledge about clubfoot, indicating a potential need for enhanced educational interventions to strengthen their understanding of clubfoot diagnosis and management.

KEYWORDS:

Clubfoot, Musculoskeletal, Physiotherapy Students

IMPLEMENTING SIMULATION-BASED EDUCATION TO TRAIN CHILDREN ON FIRST AID SKILLS: A PILOT STUDY

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INTRODUCTION:

Survival drops by 10% for every minute without CPR, highlighting the importance of early response. While children's ability to learn first aid is documented, little is known about their perceptions. This study explored children's emotions after participating in first-aid simulation scenarios.

OBJECTIVES(S):

1. To investigate the effect of participation in first aid training programs on children's emotions.

METHODOLOGY:

This qualitative phenomenological study explored the emotions of children (ages 7–11) during simulated life-threatening scenarios. Recruited via snowball sampling, participants completed a modified "Little Doctor" course with first aid training and three simulations (drowning, choking, bleeding). Scenarios were developed by a certified educator and reviewed by experts. After random scenario allocation, children joined focus groups to discuss their experiences. Transcripts were analyzed using constant comparison by two researchers and reviewed by the team. Parental consent and child assent were obtained.

RESULTS:

The initial analysis showed themes of emotions towards simulation that included shock and surprise towards the environment of the simulation event and the victim. Some children expressed sadness towards the victims they saw during the scenarios but most expressed happiness because they could help them. Furthermore, one child expressed disgust towards the bleeding scenario, and one demonstrated confidence in skills and readiness to perform the skills again.

CONCLUSION:

The simulation-based first aid training was successful, with participants expressing mixed emotions but increased confidence in applying the skills. Future research will involve a larger sample, examine age-related differences, and assess performance outcomes.

KEYWORDS:

Simulation-Based Education, First Aid Skills, Children's Emotions

AWARENESS OF SEIZURE FIRST AID MANAGEMENT AMONG THE UNDERGRADUATE MEDICAL AND NON-MEDICAL STUDENTS OF PESHAWAR: A COMPARATIVE ANALYTIC STUDY

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INTRODUCTION:

Seizures are neurological events that require immediate and appropriate first-aid intervention. Undergraduate university and medical students play a crucial role as first responders, yet their level of preparedness remains unclear. This study evaluates the awareness and preparedness of students in Peshawar to manage seizure emergencies effectively.

OBJECTIVE(S):

1. To identify, determine, assess and compare the awareness level of seizure first aid management, influencing factors, response techniques and safety measures among undergraduate medical and non-medical students in Peshawar. response techniques and safety measures.

METHODOLOGY:

A comparative descriptive study was conducted among 380 undergraduate students from medical and non-medical universities in Peshawar, selected via convenient sampling. A validated structured questionnaire was used to assess knowledge of seizure management. Data analysis was performed using SPSS version 25, applying descriptive statistics and the Chi-square test to examine associations between educational background and awareness levels.

RESULTS:

Medical students demonstrated general significantly higher awareness levels than non-medical students ($p < 0.05$). While 73.7% of medical students correctly identified safe seizure management steps, only 58.9% of non-medical students did. Common misconceptions included restraining the patient (54.6%) and inserting objects into the mouth (51.3%). Factors such as previous exposure to seizures and first-aid training significantly influenced awareness ($p = 0.01$).

CONCLUSION:

This study highlights the disparity in seizure first-aid knowledge between medical and non-medical students, emphasizing the need for targeted educational interventions. Integrating seizure first-aid training into university curricula could significantly enhance preparedness, ultimately improving emergency response and patient outcomes.

KEYWORDS:

Seizure First Aid, Emergency Response, Peshawar, Undergraduate Students

QUALITY OF LIFE ASSESSMENT OF NEWLY ADMITTED MEDICAL AND DENTAL STUDENTS OF PESHAWAR

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Ahmad Khan Supervisor: Dr.
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INTRODUCTION:

Quality of life (QoL) reflects an individual's perception of their place in life, influenced by cultural values, goals, expectations, and personal concerns. Sleep problems are common in the general population, and medical students are particularly vulnerable to poor sleep. Sleep disturbances and adjustment challenges may significantly impact QoL among medical students, especially those admitted due to family pressure.

OBJECTIVE(S):

1. To assess the quality of life of newly admitted medical and dental students who entered their fields due to family pressure or gender-related influences.

METHODOLOGY:

This cross-sectional study included newly admitted first-year MBBS and BDS students at Peshawar Medical College. Data were collected from 192 students between July 2024 and October 2024 using a pre-validated WHO-QOL questionnaire. Convenient sampling techniques were employed, and data were analyzed using descriptive statistics and Pearson correlation tests in SPSS 26.0.

RESULTS:

Out of 192 participants, 44.8% were male and 55.2% were female. The correlation between quality of life and family pressure was weak and not statistically significant ($r = 0.044$, $p = 0.540$). Similarly, the correlation between gender and quality of life was nearly zero ($r = -0.003$, $p = 0.967$), suggesting that gender does not significantly impact perceived quality of life in the medical field.

CONCLUSION:

The findings indicate that neither family pressure nor gender had a statistically significant impact on perceived QOL. Future research could explore additional variables such as workload, social support, and mental health to gain a deeper understanding of the factors influencing QOL in medical students.

KEYWORDS:

Quality of Life, WHO-QOL, Family Pressure, Medical Students

IMPACT OF STUDENT-LED DIDACTICS PRECEDING TRADITIONAL JOURNAL CLUBS ON UNDERGRADUATE MEDICAL TRAINEES INTERESTED IN CARDIOVASCULAR MEDICINE

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INTRODUCTION:

The ACC Medical Student Leadership Group Journal Club (JC) is a student-led, virtual journal club discussing cardiovascular trials. This JC has shown to improve evidence-based practice confidence (EPIC) scores in medical students. However, given the complex cardiovascular topics these JCs cover, medical students may lack the foundational knowledge to effectively translate this research to clinical practice.

OBJECTIVES:

This study will evaluate the effect of weekly didactic sessions on foundational cardiovascular topics over one month prior to a traditional JC compared to traditional JCs alone on the EPIC scores of medical students.

METHODOLOGY:

From January 2023 to January 2024 across 12 traditional JC sessions, pre- and post-JC surveys evaluating EPIC scores were administered electronically to attendees. Pre- and post-JC surveys were administered electronically, evaluating EPIC scores as well as perceived effectiveness of the multi-session JC format using a likert-type scale, scored from 1-10. Mean EPIC scores will be compared between the JC formats. Data will be analyzed using one-way ANOVA.

RESULTS:

Previous work showed a traditional monthly JC format to increase EPIC scores approximately 30%, improving EPIC scores from 6.39 pre-session to 8.28 post-session, with consistent increases across all domains. It remains unknown if a multi-session JC format can further enhance EPIC scores and learning experiences in medical students

CONCLUSION:

While JCs are an important educational tool for medical students, a traditional format discussing cutting-edge clinical research may be suboptimally approached. It is reasonable to believe a multi-session JC format may improve EPIC scores of medical students compared to traditional JCs alone.

KEYWORDS:

Student-Led Didactics, Cardiovascular Medicine, Traditional Journal Clubs, Undergraduate Medical Trainees

ESSENTIAL STEPS IN WRITING AND PUBLISHING A MEDICAL RESEARCH PAPER

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INTRODUCTION:

While essential for scientific progress, publication often presents a significant challenge for young scientists, leading to delayed or missed dissemination of valuable research findings. This impedes the broader scientific community's awareness and utilization of new discoveries.

OBJECTIVE(S):

1. To identify the common barriers faced by young scientists in publishing their research.
2. To propose practical strategies and best practices to enhance the quality and efficiency of scientific writing and publication, specifically tailored for medical journal submissions.

METHODOLOGY:

A qualitative study involving semi-structured interviews with 50 early-career medical researchers; A systematic review of common pitfalls in scientific writing identified from journal editorial feedback; A survey-based study administered to 200 post-doctoral fellows across various medical institutions. A group of Final Phase Medical Students were interviewed in open Classroom. It was an informal two-way discussion and exchange of Experience. Thematic analysis of interview transcripts; Content analysis of publication guidelines and rejection reasons. Statistical analysis of survey responses using descriptive statistics and chi-square tests.

RESULTS:

Common identified barriers included lack of mentorship in writing, insufficient knowledge of journal requirements, fear of rejection, and time constraints. A significant proportion of young scientists reported feeling inadequately prepared for the publication process. Specific strategies, such as early collaboration with experienced authors and utilization of writing workshops, were strongly correlated with successful publication rates.

Many participants cited 'lack of clear guidance' as the primary barrier.

CONCLUSION:

Our findings underscore the critical need for structured support and training in scientific writing for early-career medical researchers. Implementing targeted educational programs and mentorship initiatives can significantly improve the quality and timely dissemination of medical research, ultimately accelerating scientific progress and patient care.

KEYWORDS:

Scientific Writings, Research, Publication

**PUBLIC &
ENVIRONMENTAL
HEALTH**

ASSESSMENT OF KNOWLEDGE AND PERCEPTION REGARDING CLIMATE CHANGE AND ITS HEALTH IMPACTS AMONG HEALTH PROFESSIONALS AND STUDENTS

Hamna Bibi
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Peshawar Medical College

INTRODUCTION:

Climate change is the significant and distinct changes in weather measures that persist for more than a decade. Some experts see it as “the biggest global health threat of the 21st century”.

OBJECTIVE(S):

1. To assess and compare health professionals' and students' knowledge and perceptions of climate change and its health implications.

METHODOLOGY:

A comparative cross-sectional study with a sample of 400 health professionals was done over 6 months duration. Non-probability convenience sampling technique was used. Data was collected in August 2024 through a self-administered questionnaire, comprised of close-ended questions, and was analyzed on SPSS version 25 using a chi-square test and differential statistics for frequency and percentage determination.

RESULTS:

The study results show that medical professionals use more adaptive measures ($p < 0.05$) than students for mitigating the health effects of climate change, more knowledgeable ($p < 0.05$) than students while no distinct changes were observed for perception, i.e., almost equal in all study participants ($p > 0.05$) regarding climate change and its health impacts (such as water and vector-borne diseases, flooding, heat stroke, psychological impacts, etc).

CONCLUSION:

The study's findings revealed that health professionals (doctors and nurses) are better informed about the detrimental effects of climate change on public health than medical and nursing students. The participants with adequate knowledge about climate change were observed to have more eco-friendly practices compared to participants with inadequate knowledge and perception.

KEYWORDS:

Health Professionals, Climate Change, Health Impacts, Knowledge, Perception.

EFFECTIVENESS OF AUDIO-VISUAL INTERVENTION IN KNOWLEDGE OF TETANUS TOXOID VACCINATION & COMPLIANCE AMONG UNDERGRADUATE STUDENTS OF PESHAWAR MEDICAL COLLEGE. (A RANDOMIZED CONTROL TRIAL)

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INTRODUCTION:

Maternal & Neonatal Tetanus poses a public health threat in the developing world despite the availability of an effective vaccine. The WHO recommended five doses of TT to childbearing-age women (15 to 49 years) for its prevention.

OBJECTIVE(S):

1. To assess knowledge, and vaccination status with evaluation and comparison of Audio-Visual intervention effectiveness among female student groups regarding TT Vaccination.

METHODOLOGY:

A pre & post-test for the Randomized Control Trial was conducted after ethical approval on 1st and 2nd-year unvaccinated female students of PMC in 3 months. Data was collected in 2 phases, and an audio-visual intervention was carried out. Raosoft Calculator was used to calculate the sample size of 98 participants. Data was analyzed by calculating frequency and percentages using SPSS 26.

RESULTS:

In Phase 1, pre-test data analysis from the Intervention group showed only 18.4 % knew about Tetanus. The remaining 79.6% had no idea about it. Nearly all of them were unaware of the exact vaccination schedule. In Phase 2, the post-test showed 100% knowledge about the disease, and 89.8% knew about TT vaccination. 39 females registered themselves for TT vaccination.

CONCLUSION:

Most participants lacked information regarding TT immunization before Intervention but after Intervention, significantly enhances the knowledge. A significant association between Knowledge and Attitude is present. Intervention is successful in raising knowledge and compliance toward TT immunization.

KEYWORDS:

Tetanus Toxoid, Vaccination, Audio-Visual Intervention, Childbearing Age.

POST-TRAUMATIC STRESS DISORDER AMONG ADULT BURN PATIENTS IN TERTIARY CARE HOSPITAL OF PESHAWAR, PAKISTAN

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INTRODUCTION:

Post-traumatic stress disorder (PTSD) is one of the main psychological conditions that develops after a traumatic event such as a burn injury. Patients often experience flashbacks, nightmares, anxiety attacks, and endless thoughts about the traumatic burn injury which deteriorates their quality of life.

OBJECTIVE(S):

1. To find out the prevalence of post-traumatic stress disorder among adult burn patients in tertiary care hospitals of Peshawar

METHODOLOGY:

A cross-sectional study was conducted on 275 adult burn patients at tertiary care hospitals in Peshawar, Pakistan, who were recruited from January 2024 to July 2024. Patients who were non-cooperative, unwilling, unconscious, or had severe burn injuries were excluded from the study. A provisional diagnosis of PTSD was established using the PTSD Checklist for DSM-5, a 20-item tool that evaluated symptoms of PTSD via a 5-point Likert scale. The data were analyzed by calculating frequencies in percentages using SPSS 26.

RESULTS:

The diagnosis of PTSD was identified in 52% (143 out of 275) of individuals who experienced burn injuries. The prevalence of PTSD among males and females was 40% (59 out of 148 males) and 66% (84 out of 127 females), respectively. PTSD affected 62% of retirement-age patients and 57% of middle-aged patients most significantly. Compared to patients from various socioeconomic backgrounds, burn patients from lower socioeconomic backgrounds exhibited a higher prevalence of PTSD.

CONCLUSION:

An alarmingly high prevalence of PTSD was found in burn patients. A greater percentage of retirement-aged and middle-aged adults were diagnosed with PTSD.

KEYWORDS:

Adults, Age Groups, Burn Injuries, Burn Patients, Gender, Post-Traumatic Stress Disorder

MEN THINK AND WOMEN FEEL: DISCREPANCY IN GENDER-BASED ORGAN DONATION IN PAKISTAN

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INTRODUCTION:

The ethical dilemma in transplantation is the discrepancy in gender-based organ donation. According to the literature, 87 % of kidney donors in South East Asia are women but in contrast, only 7 % are men. The rationale of our study is based upon the research question of why is there so much gender discrepancy in organ donation in Pakistan.

OBJECTIVE(S):

1. To determine the sociocultural factors and explore the perception of discrepancy in organ donation in Pakistan.

METHODOLOGY:

A mixed-method study was conducted in the Department of Urology, IKD, from June 2024 to December 2024 on 45 female donors. The data was collected on proforma and transcribed from interviews. Data was analyzed on SPSS, using a chi-square test, and content analysis was performed for qualitative study.

RESULTS:

All 45 females were live-related donors. The mean ages of the donors were 38 ± 7 years. Regarding relations with the recipient, 20 were sisters, 15 were daughters, 7 were mothers and 3 were wives of the recipient. 38 respondents confirmed that they had male siblings who refused to donate. The content analysis revealed 8 sub-themes and 4 themes. The thematic analysis yielded 4 themes: Emotional attachment and bonding with the recipient, the recipient being the sole breadwinner for the family, a sense of hopelessness of losing the recipient, and refusal of male relatives for donation

CONCLUSION:

Though the essence of voluntary donation still prevails in organ transplantation, this altruism is more common among females. The consent form is dictated by emotional attachment, poverty, lack of health awareness, and lack of women empowerment.

KEYWORDS:

Organ Donation, Renal Transplantation, Gender Discrimination

ASSESSING CULTURAL COMPETENCE AND FACTORS AFFECTING IT AMONG NURSES IN TERTIARY CARE HOSPITALS IN PESHAWAR: A CROSS-SECTIONAL STUDY

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INTRODUCTION:

Culture is defined as the totality of socially transmitted behavioral patterns, beliefs, values, and lifeways of a particular group of people. It emphasizes healthcare providers' continuous efforts to operate effectively within their clients' cultural contexts.

OBJECTIVE(S):

1. To evaluate the levels of cultural competence among nurses in Peshawar, Pakistan
2. To identify the factors that influence their cultural competence.

METHODOLOGY:

A cross-sectional study was conducted with 337 nurses from both private and government tertiary care hospitals in Peshawar, including Northwest General Hospital, Rehman Medical Institute, and Khyber Teaching Hospital. Data was collected using a structured questionnaire and analyzed using descriptive statistics with SPSS software (version 26).

RESULTS:

Of the 337 participants, 317 (94%) of the sample showed high cultural competency, with scores ranging from 76% to 100%. 1% of the sample demonstrated low cultural competence, scoring between 1% and 50%. 18 participants (5%) of the sample demonstrated moderate cultural competence, with scores ranging from 51% to 75%. Factors that influence cultural competence include treating people from diverse cultural backgrounds and helping institutions to develop cultural competence.

CONCLUSION:

Our study evaluated that nurses in tertiary care hospitals of Peshawar demonstrate a high level of cultural competence and are culturally aware.

KEYWORDS:

Cultural competence, Nurses in Peshawar, Tertiary care hospitals Peshawar, Peshawar.

AWARENESS OF AUTISM SPECTRUM DISORDER (ASD) AMONG MEDICAL AND NON-MEDICAL STUDENTS OF PESHAWAR

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Supervisor: Dr. Robina Riaz

Peshawar Medical College

INTRODUCTION:

Autism Spectrum Disorder (ASD) is a complex neurological and developmental disorder characterized by repetitive behaviors, social impairments, and communication difficulties. In Pakistan, the domain of autism remains one of the most neglected areas in healthcare systems and there is a lack of awareness regarding ASD.

OBJECTIVE(S):

1. To determine the level of awareness regarding ASD among medical and non-medical students of Peshawar.
2. To compare the awareness level of medical and non-medical students regarding ASD.

METHODOLOGY:

A descriptive cross-sectional study was conducted on medical and non-medical undergraduates in institutes of Peshawar from June to August 2024, with a sample size of 322. We used convenience sampling techniques and data collected through a standardized Knowledge about Childhood Autism among Health Workers (KCAHW) questionnaire. Data analysis was analyzed by independent sample T-test through SPSS version 26.

RESULTS:

The study results showed that the difference was statistically significant for awareness of ASD as an autoimmune disorder ($p < 0.001$), abnormal eating habits ($p < 0.042$), stereotype and repetitive movements ($p < 0.023$), and failure to develop peer relationships appropriate for developmental age ($p < 0.007$) respectively. The level of awareness was high among 59% of medical and 52.1% of non-medical students. The awareness level was moderate among 32.9% of medical and 36.6% of non-medical students while the awareness level was low among 8% of medical students and 11.1% of non-medical students.

CONCLUSION:

Awareness level for Autism was higher in medical students compared to non-medical students.

KEYWORDS:

Autism Spectrum Disorder, Awareness, Medical, Non-Medical Students.

TELEMEDICINE IN HEALTH MANAGEMENT BEYOND COVID-19: HEALTH CARE PROVIDER PERCEPTIONS, BARRIERS TO ADOPTION, AND STRATEGIES FOR SUSTAINABLE GROWTH

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INTRODUCTION:

Telemedicine, accelerated by COVID-19, has transformed healthcare by shifting patient-provider interactions online. This study examines its role in healthcare management beyond the pandemic.

OBJECTIVE(S):

1. To explore healthcare providers' perceptions of telemedicine's effectiveness.
2. To assess the benefits and barriers faced by doctors.

METHODOLOGY:

A mixed-methods approach combined quantitative surveys (365 respondents, per Cochran's formula, 95% CI, 5% margin of error) and qualitative interviews. Data from the Hospital of Peshawar was analyzed using IBM SPSS (30.0) by taking frequencies and percentages, while 20 semi-structured interviews were thematically analyzed with QDA Miner Lite.

RESULTS:

Respondents were mostly male (59.5%), aged 26-40 (73.7%), with a mean age of 34.36 years. Most used cell phones (58.8%) for telemedicine, followed by video conferencing (20.2%). It was rated effective for medical care (45.5%) and chronic conditions (41.6%) but less so for surgical care (21.9%) and acute conditions (24.7%). Key barriers included technical issues (47.4%), lack of training (42.7%), and limited access to necessary technologies (44.7%), along with geographic location and costly setup.

CONCLUSION:

Telemedicine is cost-effective for rural and remote patients, improving access to specialist services. Integrating telemedicine into healthcare workflows, enhancing digital infrastructure, and investing in advanced technologies are crucial for its growth.

KEYWORDS:

Healthcare Design, Inpatient Telemedicine, Health, Barriers, Adoption, Physician Perceptions

CORRELATION OF WORK-LIFE BALANCE AMONG FEMALE DOCTORS IN TERTIARY CARE HOSPITALS OF PESHAWAR WITH THEIR JOB AND LIFE SATISFACTION

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INTRODUCTION:

In today's fast-paced, competitive world, working women, specifically female doctors, juggle family responsibilities, patient care, and academic pursuits creating difficulties for them in maintaining a work-life balance, leaving them unsatisfied with their lives and jobs.

OBJECTIVE(S):

1. To find the correlation of Work-Life Balance (WLB) with job and life satisfaction among female doctors and to compare results between Public and Private Hospitals.

METHODOLOGY:

A cross-sectional study design surveyed a sample of 267 female doctors from 1st June 2024 to 30th February 2025, from Tertiary Care Hospitals in Peshawar, which was calculated via Raosoft, and a convenience sampling technique was applied. Variables were assessed using standardized scales: Work Life Balance Scale, Satisfaction With Life Scale, and Job Satisfaction Survey. Data was analyzed by descriptive statistics and Pearson correlation using SPSS.

RESULTS:

The study's findings were: 44.5% of female doctors claimed great WLB, 72.8% showed satisfaction with their lives and 72.2% showed dissatisfaction with Jobs. The frequency of 'Fine' to 'Good' WLB was 98.4% in public and 96.1% in private hospitals. 'Life Satisfaction' was reported as 73.8% and 72.8% in private and public, respectively, while 'Job Dissatisfaction' was depicted as 77.6% in private and 67.2% in public hospitals. A significant and weak correlation was found between WLB and job satisfaction in public hospitals ($r=-0.2$, $p=0.01$), whereas the rest of the factors showed weakness but were not statistically significant.

CONCLUSION:

Results indicated that public-sector female doctors had better WLB and higher life and job satisfaction than those in the private sector.

KEYWORDS:

Work-Life Balance, Job Satisfaction, Life Satisfaction

ASSOCIATION OF COGNITIVE ABILITIES WITH PATTERNS AND QUALITY OF SLEEP IN NURSES WORKING IN PUBLIC AND PRIVATE TERTIARY CARE HOSPITALS: A CROSS-SECTIONAL STUDY IN PAKISTAN

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INTRODUCTION:

In healthcare, most nurses have poor sleep quality due to heavy working hours. The available literature shows an association between sleep and cognition all over the world, with data lacking in Pakistan, particularly in Khyber Pakhtunkhwa.

OBJECTIVE(S):

1. To evaluate the impact of sleep quality and patterns on the cognitive abilities of nurses in tertiary care hospitals.
2. To ascertain differences in sleep quality of different shift nurses and among the public and private tertiary care hospitals.

METHODOLOGY:

This cross-sectional study was conducted on 360 nurses across six public and private tertiary care hospitals in Peshawar. Sleep quality was assessed using the SQS scale and sleep patterns were assessed using a self-administered questionnaire. Cognitive abilities were quantified using MMSE. Statistical tests included Shapiro-Wilk's, Chi-square, Mann-Whitney-U, Kruskal Wallis, and Spearman's correlation.

RESULTS:

Out of 360 nurses, 54% were female, with a median age of 28 +/- 6 years. Median SQS value was 41 +/- 91 and MMSE 23 +/- 30. Significant differences between public and private hospitals were noted in work hours ($p = 0.00$), night sleep time ($p = 0.00$), and nap duration ($p = 0.00$). Sleep pattern factors associated with cognition included nap duration ($p = 0.12$), and frequency of sleep cycle ($p = -0.24$). A positive change in the value of SQS led to a decrease in MMSE scores ($p = -0.024$), indicating a negative correlation between sleep quality and cognitive function.

CONCLUSION:

Sleep quality and patterns directly influence the cognitive functioning of these nurses.

KEYWORDS:

Sleep quality, Sleep patterns, Cognition, Nurses

FARMING IN PAIN: MUSCULOSKELETAL HEALTH AND ERGONOMIC AWARENESS AMONG PUNJAB'S FEMALE FARMERS

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INTRODUCTION:

Farming is a physically demanding profession that involves a lot of manual labor and has been identified as a high risk for work-related musculoskeletal disorders.

OBJECTIVE(S):

1. To find out the frequency of musculoskeletal disorders and to assess the ergonomic awareness among female farmers in Punjab, Pakistan.

METHODOLOGY:

A cross-sectional study was done from August 2023 to November 2024. Using the nonprobability sampling technique, data was collected from female farmers working in the fields of the five districts of Punjab. "The Nordic Musculoskeletal Questionnaire" and "The Oswestry Low Back Pain Disability Questionnaire" were used to collect data. Data was analyzed by using SPSS version 24.

RESULTS:

Out of a total of 500 female farmers, 444 (88.8%) were married, and 151 (30.2%) had 2 children. 183 (36.6%) and 313 (62.6%) of the illiterate farmers had been working in the fields for more than 10 years. Many of the farmers experienced pain or discomfort in the lower back 259 (51.8%), followed by thighs 155 (31.0%) and knees 136 (27.2%) for more than 12 months. On disability scale, among female farmers, 155 (31.0%) had no disability, 99 (19.8%), 160 (32.0%), 70 (14.0%), and 16 (3.2%) had mild, moderate, severe, and complete disability respectively.

CONCLUSION:

This study reveals a high prevalence of musculoskeletal disorders among female farmers, particularly in the lower back, shoulders, and knees, largely due to physical demands, awkward postures, and limited ergonomic resources. Socioeconomic and educational constraints heighten these risks, underscoring the need for tailored ergonomic education programs.

KEYWORDS:

Musculoskeletal disorders, Female farmers, Pakistan

THE EFFECT OF INSOMNIA ON COGNITIVE FAILURE AMONG UNDERGRADUATE MEDICAL STUDENTS OF PESHAWAR

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INTRODUCTION:

Insomnia, a sleep disorder causing difficulty in falling or staying asleep, leads to daytime impairments. Cognitive failures in memory, attention, and executive function affect daily life. Medical students, facing high academic pressure and irregular sleep, are especially prone to both, raising their risk of cognitive impairment.

OBJECTIVE(S):

1. To assess the frequency of insomnia and cognitive failure among medical students.
2. To investigate the relationship between insomnia and cognitive failure in this population.

METHODOLOGY:

A cross-sectional study was conducted among 371 undergraduate medical students in Peshawar from June 15 to September 1, 2024, using convenience sampling. Data was collected through a questionnaire incorporating the Insomnia Severity Scale and the Cognitive Failure Scale. Statistical analysis was performed using SPSS version 25, including descriptive statistics, the Chi-square test for associations, and Pearson correlation to examine the relationship between insomnia and cognitive failure.

RESULTS:

The study of 371 participants (180 males, 191 females, mean age 22.81 ± 2.27 years) found mild (29.1%), moderate (37.5%), and severe (33.2%) insomnia, with no gender difference ($p = 0.143$). Cognitive failure was mild (24%), moderate (51.5%), and severe (24.5%), with severe cases more common in females ($p = 0.027$). Insomnia and cognitive failure showed a significant positive correlation ($p = 0.00$).

CONCLUSION:

Insomnia was common among medical students, affecting both genders equally, while severe cognitive failure was more frequent in females. These findings stress the need for interventions to enhance sleep and cognitive function, especially for female students.

KEYWORDS:

Insomnia, Cognitive Failure, Medical Students

CHANGING CANCER TRENDS IN DISTRICT DIR, PAKISTAN: EPIDEMIOLOGICAL INSIGHTS FROM A 10-YEAR HOSPITAL-BASED STUDY

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INTRODUCTION:

More alarming than the global rise in cancer is its shifting profile over the years. To our knowledge, no cancer studies have been conducted in Dir since 2004. This study analyzes cancer trends in District Dir, KPK, focusing on prevalence and incidence for national and international comparison.

OBJECTIVE(S):

1. To provide and analyze the latest cancer trends regarding prevalence and incidence
2. To compare changing cancer profiles with both national and international cancer trends

METHODOLOGY:

A retrospective study of 2647 cancer patients (all ages, 2008-2017) in District Dir, KPK, was conducted using data from IRNUM, Peshawar. The analysis was done in SPSS 20 calculating frequencies and presented through tables and figures.

RESULTS:

Among all patients, 52.7% were male and 47.3% female. The most common cancers were breast (9.0%), acute lymphocytic leukemia (ALL) (6.0%), skin (5.7%), non-Hodgkin lymphoma NHL (5.6%), and brain tumor (5.2%). In 2017, ASIR (age-standardized incidence rate) peaked at 2707.2 in males aged 60-69, with NHL (7.7%) most prevalent. In females, ASIR was highest at 2500.8 in ages 30-39, with breast cancer (18.1%) dominant, while ALL (30.9%) was most common in children. Incidence peaked in 2014 at 15 cases per 100,000 population.

CONCLUSION:

Our study highlights shifting cancer profiles in Dir over two decades, with increased leukemia and brain tumor prevalence compared to the rest of Pakistan.

KEYWORDS:

Public Health, Epidemiology, Cancer Prevalence

ASSESSING MEDICAL STUDENTS' ATTITUDE TOWARDS DOCTOR-PATIENT RELATIONSHIP

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INTRODUCTION:

The doctor-patient relationship is essential for optimal patient care and is a key element of medical ethics. A firm relationship indicates an improved level of patient compliance to the treatment, reliance on the doctor, and also better disease prognosis.

OBJECTIVE(S):

1. To assess medical students' attitudes toward doctor-patient relationships and to examine differences based on demographic characteristics.

METHODOLOGY:

A cross-sectional, quantitative study was conducted among medical colleges in KP (July- October 2024). Convenient sampling was employed with a sample size of 375 with a 95% confidence level. The validated 18-item Patient Practitioner Orientation Scale (PPOS) (Cronbach's $\alpha=0.731$) assesses attitudes toward doctor-patient relationships using a 6-point Likert scale and comprises two subscales: Sharing and Caring. Data was collected using Google Forms and analyzed in SPSS version 27. Mean and standard deviations were calculated. T-test and ANOVA assessed differences across demographic variables. A p-value <0.05 was considered significant.

RESULTS:

Among 401 participants, the overall mean score of PPOS scale was 3.62 ± 0.45 , with sharing at 3.30 ± 0.611 and caring at 3.95 ± 0.57 . A significant difference was found in sharing scores between private and public sector students. Additionally, gender differences were significant for the mean PPOS score and caring sub-scale score.

CONCLUSION:

An overall higher caring subscale score reflects a stronger emphasis on emotional and compassionate aspects over shared decision-making. Public sector students scored higher in Sharing, favoring greater patient involvement. Females scored higher in Caring and overall PPOS, reflecting a more patient-centered approach.

KEYWORDS:

Medical Students, Doctor-Patient Relations, Patient-Centered Care

PERCEPTION AND AWARENESS OF UNDERGRADUATE STUDENTS REGARDING THYROID CANCER, PESHAWAR

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INTRODUCTION:

Thyroid cancer is an uncontrolled division of cells in the thyroid gland. It is among the top ten cancers in Pakistan in females as compared to males.

OBJECTIVE(S):

1. To determine thyroid cancer awareness among undergraduate students in Peshawar.
2. To compare thyroid cancer awareness among undergraduate medical and non-medical students in Peshawar.

METHODOLOGY:

A cross-sectional study was conducted on 384 medical and non-medical students, Medical students. A convenient sampling technique was used. Study settings include IQRA, KMU, and IMSCIENCES University. Data was analyzed using SPSS 27 to measure the frequency in percentages.

RESULTS:

Medical students (n =190, 49.5%) and non-medical students (n =194, 50.5%). Knowledge about the general awareness of TC of medical students was (n=174) out of 188 (94%) compared with non-medical students (n = 134 out of 194, 69%). Awareness about the risk factors of TC in medical and non-medical was (n= 147 out of 190, 77%) and (n= 142 out of 194, 73%), respectively. The awareness about the signs relating to TC in medical and non-medical represents the data of (n= 180 out of 190, 94%) and (n=170 out of 194 87%), respectively. A total of (n= 310 out of 384, 80.7%) of individuals have information about the General awareness of thyroid cancer.

CONCLUSION:

The majority of university students have good knowledge about thyroid cancer awareness, risk factors, and signs. Medical students have more knowledge than non-medical students.

KEYWORDS:

Thyroid cancer, Awareness, Peshawar

SPECTRUM OF ANTI-FUNGAL DRUG RESISTANCE IN CANDIDA SPECIES ISOLATES IN PAKISTAN IN THE LAST DECADE (2014-2024)

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INTRODUCTION:

Antifungal drug resistance is an emerging problem with a huge disease burden worldwide, according to the World Health Organization. In Pakistan, around three million people suffer from fungal diseases with a predicted mortality rate of 10-75% per annum.

OBJECTIVE(S):

1. To study the range of anti-fungal drug resistance in *Candida* species isolated in different laboratories in Pakistan.

METHODOLOGY:

A detailed review of the literature available online was done according to PRISMA guidelines, and three databases were included. Original research articles from Pub Med Home, Science Direct, and Google Scholar were searched from the past ten years, i.e. 2014- 2024. MeSH words like “candidiasis”, “antimicrobial drug resistance”, and “Pakistan” were searched with the use of Boolean terms “AND” and “OR” in between them. Titles and abstracts of the articles were retrieved and studied in the first round, while full texts were reviewed in the second round. Finally, a total of nine articles were selected following the inclusion criteria.

RESULTS:

The study reported that *Candida albicans* species was dominant among fungal isolates (69%). Progression in anti-fungal drug resistance (6% to 34%) has been observed against *Candida albicans* as well as non-*Candida albicans* species. The highest resistance was observed against Fluconazole (85%).

CONCLUSION:

Candida species possess high resistance against antifungal agents. Identification of resistant strains and innovations in the form of new drugs are gateways to combat anti-fungal drug resistance.

KEYWORDS:

Antifungal drug resistance, Candidiasis, Pakistan

ANALYSIS OF MEASLES VACCINATION STATUS IN INDOOR MEASLES PATIENTS

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INTRODUCTION:

Measles is an extremely infectious viral exanthema caused by Morbillivirus. Vaccine against measles and rubella, abbreviated as MR is a live attenuated vaccine. According to research conducted at the CMH, Abbottabad, Pakistan, 56.7% of indoor measles patients had received complete MR vaccination, unvaccinated: 23.24% and partially vaccinated: 20%. These results were controversial suggesting that vaccinated children may be more susceptible to measles than unvaccinated ones. Our research aimed to resolve this controversy.

OBJECTIVE(S):

1. To assess measles vaccination status among indoor measles patients.
2. To find differences between observed and expected values of measles vaccination status among them.

METHODOLOGY:

This cross-sectional study is directed to indoor measles patients diagnosed with measles of either gender with ages between 6 months to 12 years with a sample size calculated as 264 with a 5% margin of error, 95% confidence level, and vaccination coverage of 75%. Data was collected from DHQ and Mufti Mahmood Hospital (D. I. Khan), Women and Children Hospital (Bannu), HMC, and LRH (Peshawar) by using a purposive sampling technique. The data was analysed using the Chi-square test of association and Chi-square goodness of fit.

RESULTS:

The data analysis shows that a statistically significant ($p > \alpha$) difference was found between observed measles vaccination status (Fully Vaccinated: [21%], partially Vaccinated: [9%], Un-Vaccinated: [70%] and expected measles vaccination status (Fully Vaccinated: [56.8%], partially Vaccinated: [19.4%] Un Vaccinated: [23.4%]).

CONCLUSION:

This cross-sectional study highlights a high percentage of unvaccinated measles patients, with significant differences between observed and expected MR vaccination status.

KEYWORDS:

Measles, Vaccination, Measles Patients

KNOWLEDGE OF BLOOD-BORNE PATHOGENS AND POST-EXPOSURE PROPHYLAXIS AMONG HOUSE OFFICERS IN PESHAWAR'S TERTIARY CARE HOSPITAL

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INTRODUCTION:

House officers face high risks of blood-borne infections due to frequent needlestick injuries (NSIs) from medical procedures. Limited experience and heavy workloads increase these risks. This study assesses their knowledge of NSI prevention and management.

OBJECTIVE(S):

1. To assess the knowledge of recent medical graduates about blood-borne viruses.
2. To assess the knowledge of recent medical graduates about post-exposure prophylaxis of blood-borne viruses.

METHODOLOGY:

A survey was conducted among 196 house officers from Khyber Teaching Hospital (KTH), Lady Reading Hospital (LRH), and Hayatabad Medical Complex (HMC). Participants answered questions about blood-borne pathogens and PEP. Cross-tabulation and chi-square tests were used to compare scores between hospitals.

RESULTS:

The results show that overall, 65.8% of house officers scored poorly (1–7/14), while 34.2% scored well (8–14/14). HMC had the highest good scores (69.6%), followed by LRH (40.3%) and KTH (38.4%), with statistically significant differences suggesting HMC's training is more effective. The chi-square test ($\chi^2 = 24.36$, $p < 0.001$) showed significant differences, suggesting training variations among different hospitals. No participant achieved a perfect score, indicating room for improvement.

CONCLUSION:

House officers lack sufficient knowledge of NSI prevention and PEP management. Standardized training programs across all hospitals could improve healthcare worker safety.

KEYWORDS:

Bloodborne Pathogens; Post-Exposure Prophylaxis; Needlestick Injury Prevention; Healthcare Worker Safety; House Officers; Knowledge Gap.

PARTNERS IN PREGNANCY: EXPLORING MALE AWARENESS, PREPAREDNESS, AND INVOLVEMENT FOR MATERNAL CARE IN KARACHI

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INTRODUCTION:

Prenatal care (PNC) is vital, yet many women face access barriers. Male involvement improves outcomes but remains limited. This study examines knowledge, practices, and barriers to male participation in maternal health care and birth preparedness in Karachi, Pakistan.

OBJECTIVE(S):

1. To assess the knowledge and practices of male partners regarding maternal health care and birth preparedness.
2. To identify factors affecting males' involvement in maternal care and birth preparedness in Karachi.

METHODS:

A cross-sectional study of 500 Karachi couples (Sept 2023–Nov 2024) used a structured, self-administered questionnaire on socio-demographics, maternal health care knowledge, and male involvement. Data was analyzed in SPSS 25.0 using descriptive and inferential statistics ($P < 0.05$). All ethical considerations were addressed.

RESULTS:

The study found that 58.4% of husbands regularly attended PNC visits, and 22.4% occasionally. While 91.0% provided financial support, only 42.2% discussed pregnancy-related health with providers. Just 32% felt hospitals promoted male participation. Barriers included long waits (22.2%), lack of time (34.8%), and cultural norms (11.4%). Education and income significantly influenced involvement.

CONCLUSION:

Despite financial support from husbands, social and cultural barriers hinder active male participation in maternal health care. Addressing these barriers through awareness programs, and male-friendly healthcare environments can enhance male involvement, ultimately improving maternal and neonatal health outcomes in Karachi.

KEYWORDS:

Prenatal care, Pregnancy, Maternal health, Awareness, Pakistan

BURDEN OF ISCHEMIC HEART DISEASE IN ASIA (2000–2021): TRENDS, RISK FACTORS, AND REGIONAL DISPARITIES USING GLOBAL BURDEN OF DISEASE DATA

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INTRODUCTION:

Ischemic Heart Disease (IHD) is Asia's leading cause of death and disability, driven by aging, urbanization, and modifiable risks like hypertension, high LDL, diabetes, smoking, and air pollution. Regional trend analysis is key for targeted prevention and policy.

OBJECTIVE(S):

1. To analyze the ischemic heart disease burden in Asia (2000–2021) by tracking YLLs, YLDs, and DALYs using GBD data.
2. To identify key IHD risk factors and regional disparities for targeted prevention.

METHODS:

A retrospective observational study (2000–2021) used GBD data to analyze the IHD burden across Asia, assessing YLLs, YLDs, and DALYs. Key risk factors were examined regionally, with trends visualized through bar charts, line graphs, and heat maps. The sample included all Asian countries in the GBD database.

RESULTS:

From 2000 to 2021, YLLs fell from 2,377.70 to 2,295.19 per 100,000, peaking at 2,453.34 in 2013. DALYs dropped from 2,420.09 to 2,340.89, while YLDs rose from 42.39 to 45.69. In 2021, the top risk factors were high blood pressure (57.94 deaths per 100,000), high LDL, and smoking. Central Asia had the highest IHD mortality (265.52 per 100,000), followed by South and Southeast Asia. In South Asia, Afghanistan led (280.03 per 100,000), with Pakistan second (183 per 100,000).

CONCLUSION:

Despite falling YLLs and DALYs, rising YLDs highlight growing disability. Targeted interventions for key risks are crucial, especially in Central and South Asia.

KEYWORDS:

Ischemic Heart Disease (IHD), Global Burden of Disease (GBD), Risk Factors

EXAMINING OUTDOOR MEALS CONSUMPTION AND ITS ASSOCIATION WITH DIGESTIVE HEALTH AMONG MEDICAL STUDENTS DWELLING IN HOSTELS OF KHYBER MEDICAL COLLEGE, PESHAWAR

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INTRODUCTION:

Proper nutrition is fundamental to health, supporting growth, development, and disease prevention. Among hostel-dwelling medical students, dissatisfaction with hostel meals frequently leads to increased consumption of outdoor meals, which may adversely affect digestive health.

OBJECTIVE(S):

1. To investigate the patterns of outdoor meal consumption and its association with digestive health issues in medical students residing in hostels.

METHODOLOGY:

A cross-sectional study was conducted involving 297 undergraduate medical students living in hostels of Khyber Medical College, Peshawar. Data were gathered using a validated questionnaire, and statistical analysis was performed using SPSS Version 20. The relationship between outdoor meal consumption patterns and digestive health outcomes was evaluated through the Chi-Square Test.

RESULTS:

The study revealed that 38.4% of students consumed outdoor meals two to three times per week, with dinner being the most frequently consumed meal. Street food was the preferred choice for 38.4% of participants. Dissatisfaction with hostel-prepared meals emerged as the primary driver of outdoor meal consumption, cited by 57.6% of respondents. Statistical analysis demonstrated a significant association ($p = 0.004$) between the frequency of outdoor meal consumption and the prevalence of digestive issues, indicating that frequent consumption of such meals correlates with higher rates of digestive discomfort.

CONCLUSION:

The study highlights the critical need to enhance the quality and appeal of hostel meals to foster healthier eating habits among students. Addressing dietary choices in this population could significantly improve digestive health and support better academic performance and overall well-being.

KEYWORD(S):

Outdoor Meals, Hostel Dwellers, Digestive Health, Dietary Habits, Medical Students

PATIENTS' PERCEPTION OF CARDIOPULMONARY RESUSCITATION ORDERS AND THEIR AUTONOMY

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INTRODUCTION:

Cardiopulmonary resuscitation (CPR) is commonly used to relieve patients from circulatory emergencies. However, many patients or their next of kin sign CPR orders before such emergencies occur. Evaluating their understanding of CPR and their autonomy in making decisions is essential, particularly in local settings where limited research exists.

OBJECTIVE(S):

1. To assess participants' awareness and perceptions of CPR orders and their autonomy in decision-making regarding these orders.

METHODOLOGY:

A descriptive cross-sectional study was conducted among terminally ill patients in public sector tertiary hospitals in District Peshawar. Convenient sampling was used, and data was collected through a self-designed questionnaire validated by a pilot study. Data analysis was performed using SPSS 20 by measuring frequency in percentages.

RESULTS:

A total of 257 participants (50.2% male, 49.8% female) were included. Most patients were aged 51-70 years (35.8%). Consent was obtained from guardians in 74.3% of cases. A majority (52.1%) were admitted to ICUs, with 39.3% having cardiovascular diseases. About 69.3% had heard of CPR, and 67.3% preferred to have CPR. However, 51.4% were unaware of their legal right to sign CPR orders. Reasons for refusing CPR included fear of disease transmission, lack of trust, and preference for a natural death.

CONCLUSION:

Most participants recognized CPR as a lifesaving procedure but lacked awareness of their legal right to sign CPR orders. Many chose CPR without understanding its implications, indicating a need for better education and communication.

KEYWORDS:

Cardiopulmonary resuscitation, Do Not Resuscitate, Tertiary Care Hospitals, Terminally ill patients.

A CROSS-SECTIONAL STUDY ON THE PREVALENCE OF STRESS AND FREQUENCY OF ACADEMIC STRESSORS AMONG MEDICAL STUDENTS OF GOMAL MEDICAL COLLEGE

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Gomal Medical College

INTRODUCTION:

Medical students face higher stress levels than others due to health concerns, a tough curriculum, a heavy workload, and academic pressures, with academics being the primary stressor.

OBJECTIVE(S):

1. To find the prevalence of stress among students of Gomal Medical College.
2. To find the prevalence of stress by gender age group residence and academic year.
3. To find the frequency of academic stressors.

METHODOLOGY:

This cross-sectional study was conducted in the Community Medicine Department, Gomal Medical College, from April to July 2024. The sample size (150) was calculated using the RaoSoft calculator for a population of 573 students, with a 95% confidence level, $p < 0.05$, and a 3.5% margin of error. Nonprobability purposive sampling was used. Categorical data was analyzed with a chi-square test by using SPSS 17. The study focused on nine academic stressors: exam frequency, performance, curriculum, dissatisfaction with lectures, lack of learning materials, worries about becoming a doctor, limited recreation time, and peer competition.

RESULTS:

Stress prevalence among GMC students is 69%, with 23% mild, 20% moderate, and 24% severe stress. Females had higher stress levels, with dissatisfaction with class lectures being the most common academic stressor. Our study found that 31% of students were stress-free, while 69% experienced some stress, including 24% with severe stress.

CONCLUSION:

The study shows a significant association of stress prevalence with age group, residence, and academic year, while females had higher stress levels than males.

KEYWORDS:

Medical Students, Academic Stress, Questionnaires, Psychological Stress

EXPLORING THE INTERPLAY BETWEEN AGORAPHOBIA AND SOCIAL ANXIETY DISORDER AMONG HEALTH CARE PROFESSIONALS AND GENERAL POPULATION

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INTRODUCTION:

Agoraphobia is an anxiety disorder characterized by the fear of being in situations where escape might be difficult. Social Anxiety Disorder (SAD) involves an intense fear of social situations due to the fear of being judged and embarrassed.

OBJECTIVE(S):

1. To find out the prevalence of agoraphobia and social anxiety disorder among healthcare professionals and the general population.
2. To find out the risk factors and coping strategies among healthcare professionals and the general population

METHODOLOGY:

A cross-sectional study was performed from August 2023 to November 2024. A total of 614 healthcare professionals and the general population from different cities of Pakistan were included. A non-probability convenient sampling technique was used to collect data through a predesigned and validated questionnaire, the Mini International Neuropsychiatric Interview questionnaire for DSM-5. Data was analysed by calculating the mean and frequency using SPSS 26.

RESULTS:

A study involving 614 participants, 52% healthcare professionals, and 53% males, with a mean age of 22.5 ± 5.79 years, revealed that 50% of both healthcare workers and the general population felt anxiety in crowded places and public transportation, experiencing significant distress at home and work. Notably, 56.7% of healthcare workers felt self-conscious in public toilets, 10% were nervous about being stared at while walking, and 5% worried about trembling under observation. Overall, healthcare workers exhibited higher social confidence with fewer anxieties compared to the general population.

CONCLUSION:

The study reveals that healthcare professionals encounter distinct pressures and stressful work environments. These factors can intensify anxiety disorders, particularly agoraphobia and Seasonal Affective Disorder (SAD). Although their expertise in mental health may provide some coping mechanisms, the demands of their profession pose unique challenges that can negatively impact their mental well-being.

KEYWORDS:

Agoraphobia, Social Anxiety Disorder, Health Care Professionals, General Population.

PAKISTANI WOMEN'S EXPERIENCE WITH MENSTRUAL PERIOD APPS

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INTRODUCTION:

Menstrual period tracking apps have gained significant popularity as digital tools for monitoring menstrual cycles and related health metrics. Despite their widespread use, there is limited research on the perceptions and experiences of women in Pakistan, where cultural taboos around menstruation persist.

OBJECTIVE(S):

1. To assess the awareness and reasons for using menstrual tracking apps.
2. To determine the effectiveness of apps in addressing menstruation-related issues.

METHODOLOGY:

A descriptive cross-sectional study was conducted in August 2024 involving 304 women from Karachi. Using non-probability convenient sampling, data was collected using a structured Questionnaire, focusing on demographic details, app usage, accuracy, and user satisfaction. Ethical approval was obtained from Hamdard University.

RESULTS:

Most participants (79.9%) were aged 15-25, with 82.6% aware of period tracking apps, primarily through social media (59.9%). Popular apps included Flo and My Calendar. Most users (48.7%) used apps to plan and prepare for their periods, while 47% tracked symptoms. Accuracy varied, with 41.4% reporting the app was mostly accurate. Over half (55.6%) felt prepared using the app, and 40.5% reported an improved quality of life.

CONCLUSION:

Menstrual tracking apps are widely used among young women in Karachi, primarily for cycle planning and symptom tracking. While users find these apps helpful, there is a need for improvement in accuracy, privacy measures, and culturally sensitive features to enhance their effectiveness and acceptance in the Pakistani context.

KEYWORDS:

Menstrual Cycle, Reproductive Health, Technology, Pakistan

AWARENESS OF IRRITABLE BOWEL SYNDROME AMONG UNDERGRADUATE MEDICAL AND DENTAL STUDENTS OF PESHAWAR

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INTRODUCTION:

Irritable Bowel Syndrome (IBS) is a highly prevalent gastrointestinal disorder that has an incontrovertible impact on health care and patients' quality of life. IBS is a chronic biopsychological disorder that is characterized by altered bowel habits with abdominal discomfort or pain with the absence of organic pathology.

OBJECTIVE(S):

1. To evaluate awareness of IBS among undergraduate students of Peshawar Medical and Dental College.

METHODOLOGY:

The descriptive cross-sectional study was conducted for over 6 months. A sample of 274 was studied. Data were collected through a pretested questionnaire and analyzed by SPSS, Data was analysed by calculating the mean and Standard deviation of symptoms and causes using SPSS v26.

RESULTS:

The study included 274 participants (79.6% male and 20.4% female). Most individuals (81%) were from the age group of less than 22 years. All are medical students (87.2% MBBS and 12.4% BDS). Among participants, 94% have heard about IBS. 73.3% have good knowledge of IBS symptoms. 32.1% think that IBS is more common than Diabetes Mellitus or Hypertension. 85.8% think IBS affects quality of life, while 71.1% think that it leads to rapid mood changes.

CONCLUSION:

The study's findings showed that participants' knowledge of IBS was moderate. Around three-fourths of participants were aware of IBS symptoms. Most of the participants had good knowledge of its etiology. Further education and public awareness campaigns are needed to improve the understanding of IBS and its treatment.

KEYWORDS:

Irritable Bowel Syndrome, Awareness, Undergraduate Students

THE HIDDEN STRAIN: ASSESSING WORK-RELATED MUSCULOSKELETAL DISORDERS AMONG KARACHI'S FOOD DELIVERY WORKFORCE

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INTRODUCTION:

Work-related Musculoskeletal Disorders (WMSDs) are a major health concern for food delivery riders, especially in Karachi, where post-COVID-19 demand surged.

OBJECTIVE(S):

1. To assess the prevalence and risk factors of WMSDs, focusing on Low Back Pain (LBP), among motorcycle food delivery riders in Karachi.
2. To find out action taken for pain remedy
3. To assess physiotherapy's role in preventing WMSD pain.

METHODOLOGY:

A cross-sectional study was conducted on 167 male riders from August 2023 to November 2024. Participants were recruited through snowball sampling from various Karachi delivery hubs. A structured questionnaire using the Standardized Nordic Musculoskeletal Disorders Questionnaire and the Oswestry Disability Index for low back pain was used. Data was analyzed using frequency tabulation and the Chi-square test for association between categorical variables

RESULTS:

The mean age was 29.05 ± 6.1 , with 76% working continuously throughout the week. Over the past year, 55.7% reported LBP, with 45.5% indicating interference with daily activities. Additionally, 28.7% experienced hip/thigh pain, and 21% knee pain. Self-medication was common (51.3%), while only 13.9% consulted a doctor. Only 43.1% recognized the benefits of physiotherapy.

CONCLUSION:

The high prevalence of WMSDs, especially LBP, calls for ergonomic interventions, regular health check-ups, and improved physiotherapy awareness. These findings underscore the urgent need for policy changes by delivery companies. Overall, timely intervention is essential.

KEYWORDS:

Low Back Pain (LBP), Delivery Riders, Ergonomics, Physiotherapy Awareness

PREVALENCE AND AWARENESS OF POLYCYSTIC OVARY SYNDROME(PCOS) AMONG NON-MEDICAL FEMALE STUDENTS IN HIGHER EDUCATIONAL INSTITUTES OF PESHAWAR, PAKISTAN: A CROSS-SECTIONAL ANALYSIS

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INTRODUCTION:

Polycystic Ovarian Syndrome is a genetically complex endocrine disorder that affects mostly women of reproductive age. It results in infertility, metabolic disturbances, and an increased risk of long-term health issues such as diabetes, cardiovascular disease, and endometrial cancer.

OBJECTIVE(S):

1. To determine the prevalence of PCOS based on its key symptoms among female students.
2. To assess the level of awareness regarding PCOS among these students.

METHODOLOGY:

A cross-sectional study was conducted in different institutes of Peshawar, collecting data via pre-validated questionnaires from 267 female students aged 18-26 from 15 July to 15 October 2024. Convenience sampling was used. To determine PCOS's knowledge level and prevalence, the data was analyzed by Frequency and percentages calculated for descriptive analysis and Pearson correlation for association, using SPSS.

RESULTS:

The study's findings revealed that 160(59.9%) participants had poor knowledge, while 106(40.1%) had adequate knowledge. A Spearman correlation revealed a weak but significant positive link between age and knowledge scores ($\rho = 0.207$, $p < 0.001$, $n = 267$), suggesting that older participants had slightly higher scores. It was found that 118 (44.2%) of the respondents were suspected of having PCOS, 4(1.5) were diagnosed with PCOS based on the signs and symptoms, and 24(9%) respondents were already diagnosed with PCOS.

CONCLUSION:

This study shows a rising prevalence of signs and symptoms of PCOS, yet females remain unaware of the condition, even when they exhibit its signs. Moreover, many of them do not consult a gynecologist unless faced with severe health issues.

KEYWORDS:

Polycystic Ovarian Syndrome, Awareness, Prevalence, Women's Health.

FREQUENCY OF SELF-MEDICATION AND ITS ASSOCIATED FACTORS AMONG MEDICAL STUDENTS OF A PRIVATE MEDICAL INSTITUTE

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INTRODUCTION:

Self-medication is the use of drugs to treat self-diagnosed physical ailments or symptoms without consulting a healthcare professional. It plays a great role in daily life and is common in the healthcare system and around the globe, especially in developing countries.

OBJECTIVE(S):

1. To assess the frequency of self-medication practices among medical students
2. To determine the association of self-medication practice with gender, residence, working status of mothers, and year of education among medical students

METHODOLOGY:

A cross-sectional study was carried out among 140 MBBS students of Wah Medical College. Information was gathered from respondents using a questionnaire. Data was summarized with descriptive statistics, and a chi-square test was applied to assess the association of self-medication with gender, working status of the mother, year of MBBS, and residence of students.

RESULTS:

Overall, 140 students approached and out of them, 107 (76%) students were practicing self-medication. Antibiotics were most often utilized (55%) followed by Analgesics (39%). The most frequent complaints for which medication was taken by themselves were headache (43%) followed by Fever (39%). The commonest source of information for self-medication was previous prescription (50%), and the main reason for taking self-medication was that the students thought that they did not need to visit the doctor (46%). Moreover, no association was established between gender, working status, year of education, and gender with self-medication.

CONCLUSION:

Self-medication practice was quite high among medical students. There was no association of gender, working status, year of education, and gender with self-medication practice among students.

KEYWORDS:

Self-medication, Medical students, Antibiotics, Cross-sectional study

PRACTICE OF PARENTS REGARDING SUNLIGHT EXPOSURE OF THEIR INFANTS

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INTRODUCTION:

Sunlight exposure plays an important role in healthy bone development in children so it is essential to assess the practices associated with it.

OBJECTIVE(S):

1. To determine the parental practices regarding sunlight exposure of their children.

METHODOLOGY:

A cross-sectional study was carried out at POF Hospital, Wah Cantt, from Nov 2023- Feb 2024. A sample of 100 parents was collected using Convenient Sampling. Parents with infants between 1-6 months were included. A structured questionnaire consisting of two parts was used. 1st part was about demographics, and the second part was about the practices of sunlight exposure. Parents were asked about the frequency, timing, duration, reasons behind exposing their children to sunlight, and any reasons for avoiding it. Data was analyzed using SPSS version 21. For qualitative variables, frequencies and proportions were calculated while for quantitative ones, means and standard deviations were calculated.

RESULTS:

73% of parents expose their infants to sunlight, with 69% doing so daily. Mornings were the preferred time for sunlight exposure, chosen by 70% of parents due to the milder intensity of sunlight. 59% and 65% of the parents knew sunlight is important for bone health and vitamin D production. Skin darkening (31%) and busy schedules (21%) were significant reasons for not exposing infants to sunlight.

CONCLUSION:

Our study indicated a good practices of sunlight exposure. Parents have a good understanding of the medical benefits of sunlight. However, parents need to break cultural stereotypes associated with sunlight exposure.

KEYWORDS:

Sunlight, Vitamin D, Children, Morning

FREQUENCY OF HEADACHES AMONG MEDICAL STUDENTS OF WAH MEDICAL COLLEGE

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INTRODUCTION:

Headache is one of the most prevalent and frequent complaints regarding the nervous system. WHO ranked headaches as the third most common cause of disability worldwide. According to them, 90% of cases are Primary Headaches, and 10% are Secondary Headaches.

OBJECTIVE(S):

1. To assess the frequency of headaches and estimate the trigger factors that aggravate headaches in medical students.

METHODOLOGY:

A Cross-Sectional Study was done at Wah Medical College from December 2023 to June 2024. A Purposive Sampling technique was used. Data collection was done through a structured questionnaire, which was filled by the medical students of 1st year to 4th year. Data Analysis was done by calculating frequency and percentages through SPSS, 23.

RESULTS:

Our study revealed a gender distribution of 64% females and 36% males, with headaches being more frequent in females (29.85%) than males (25.71%). The age distribution was predominantly 18-20 years (56.5%), followed by 21-23 years (39.1%), and 24-26 years (3.6%). The duration of a headache was 30 minutes to 1 hour in 35% of students, with pressing-type headaches being the most common (51%). The most significant triggering factor was sleep disturbance 72.5% among the students of Wah Medical College.

CONCLUSION:

According to our study, out of 64% females and 36% males, the frequency of headache was found to be 29.85% in females and 25.71% in males, and the most significant triggering factors that contributed to the headache were disturbance of sleep and academic stress.

KEYWORDS:

Frequency, Headache, Medical Students, Triggering factor

EXPLORING ATYCHIPHOBIA AND ITS ASSOCIATED FACTORS AMONG MEDICAL STUDENTS

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INTRODUCTION:

Atychiphobia, commonly known as fear of failure (FoF), is a significant psychological concern among university students, impacting their academic performance and overall well-being.

OBJECTIVE(S):

1. To assess the level of atychiphobia among medical students
2. To examine how these levels vary according to sociodemographic factors

METHODOLOGY:

A Cross-sectional Study was conducted at Wah Medical College with a duration of Six months (January-June 2024). A sample of 264 medical students was selected via a convenient sampling technique. A structured questionnaire containing two sections: socio-demographic questions and the Performance Failure Appraisal Inventory (PFAI), was used for data collection. Statistical Analysis was done using SPSS version 23. T-tests were used to compare general FoF means across socio-demographic factors, with a significance level set at $p < 0.05$.

RESULTS:

56% of the students were female, majority of the participants belonged to 2nd year MBBS (28%), and 87.7% of the students chose the medical field voluntarily. The mean general FoF score among the participants was -0.69 ± 0.87 . The mean for fear of experiencing shame and embarrassment (FSE) was highest among the participants -0.54 ± 1.02 . No significant association was found between socio-demographics with atychiphobia.

CONCLUSION:

This study found that the overall fear of failure (FoF) among medical students at Wah Medical College is low. Among all the components, fear of experiencing shame and embarrassment was highest among the participants. Students who chose the medical field voluntarily reported lower FoF, indicating intrinsic motivation as a protective factor.

KEYWORDS:

Atychiphobia, Fear Of Failure, Medical Student

INFLUENCE OF AMPHETAMINES ON THE SOCIAL AND EMOTIONAL BEHAVIOR OF STUDENTS

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INTRODUCTION:

Amphetamines, known for their stimulant effects on the central nervous system, are increasingly misused by students. While their cognitive benefits are documented, their influence on social interactions and emotional stability remains unclear.

OBJECTIVE(S):

1. To investigate the effect of amphetamine use on social behavior and emotional behavior.

METHODOLOGY:

A cross-sectional descriptive study was conducted at the University of Peshawar using a structured questionnaire with a Likert scale. A sample of 200 participants was selected at a 95% confidence level. Students with amphetamine use in the past six months were included, while those with severe mental health disorders or recent trauma were excluded.

RESULTS:

Among participants, 77.7% exhibited moderate social behavior, 16.8% good, and 5.4% poor. Emotional behavior showed 62.9% moderate, 33.7% good, and 3.5% poor performance. The social impact appeared neutral, while the emotional effects leaned more positively.

CONCLUSION:

Contrary to existing literature, our findings suggest a moderate social impact and a more pronounced positive effect on emotional behavior, indicating a complex and context-dependent influence.

KEYWORDS:

Amphetamines, Mental Wellbeing, Emotional Behavior, Social Behavior.

ANXIETY AND DEPRESSION AMONG VARIOUS BLOOD GROUPS OF UNDERGRADUATE MEDICAL AND PHYSICAL THERAPY STUDENTS

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INTRODUCTION:

Stress Anxiety and depression are the most common health concerns among medical students. It can be categorized as good stress and bad stress. Good stress motivates a person to do his best and if not managed properly it evolves into anxiety and depression.

OBJECTIVE(S):

1. To assess the frequency of depression and anxiety among the various blood groups of medical and physiotherapy students.

METHODOLOGY:

A cross-sectional study on 215 MBBS and DPT students was conducted at Aziz Fatimah Medical and Dental College (AFMDC) from November 2022 to May 2023. Google Form containing HADS was administered among the MBBS and DPT students through social media. The data was analyzed using SPSS version 26. Frequency and percentage were calculated for categorical variables such as blood groups, anxiety and depression. ANOVA was used to compare HADS scores in blood groups

RESULTS:

Mild anxiety was found in A>O>B>AB, while severe anxiety was found in B>A>AB>O. Mild depression was found in A>B>O>AB, while severe depression was found in A>O>B>AB. ANOVA scores showed significantly higher anxiety and depression in blood Group-A. Rhesus factor positive blood groups have severe anxiety and mild depression while Rhesus factor negative blood groups have mild anxiety and severe depression.

CONCLUSION:

Severe anxiety was common in blood Group-B while severe depression was common blood Group-A. Sever anxiety was common in positive Rhesus factor blood types while severe depression was found in negative Rhesus factor blood types.

KEYWORDS:

Depression, Anxiety, Blood Group, Medical students.

IMMUNIZATION STATUS AND SOCIO-ECONOMIC CONDITION OF PATIENTS ADMITTED TO PEADS WARD, BACHA KHAN MEDICAL COMPLEX, SWABI

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INTRODUCTION:

Immunization is a public health measure to reduce childhood morbidity and mortality. Globally, 6.9 million children under five years die annually, many due to vaccine-preventable diseases such as measles, pertussis, and tetanus.

OBJECTIVE(S):

1. To ascertain the socioeconomic status and vaccination coverage of patients at BKMC, Swabi's pediatric ward.
2. To examine the relationship between hospital admissions, socioeconomic status, and immunization status.

METHODOLOGY:

A cross-sectional study of 375 sample size was conducted over four months. Data was collected by questionnaires from parents in the pediatric ward of BKMC, Swabi, and analyzed using SPSS version 25. Descriptive statistics were used for age and gender-wise analysis of socioeconomic conditions and immunization status in patients.

RESULTS:

Significant educational disparities exist, with 200 mothers uneducated and 150 fathers lacking formal education. Limited access to higher education affects 50 mothers and 75 fathers. Poverty is a key factor, with 200 families earning under 20K. Vaccination rates show progress, but 200 individuals are partially immunized, and 100 are unimmunized due to accessibility issues. Data gaps include educational quality, family structure, informal education, and regional disparities.

CONCLUSION:

Limited education impacts economic stability and healthcare access, fueling poverty cycles. Targeted interventions in education, healthcare, and socioeconomic support are essential, along with further research on family structure and public policy solutions.

KEYWORDS:

Immunization, Socioeconomics, Vaccination, Literacy, Finances

KNOWLEDGE, ATTITUDE, AND BEHAVIOUR OF MEDICAL STUDENTS TOWARDS SUN EXPOSURE AND USE OF SUN PROTECTIVE MEASURES

Mahnoor Rehman, Mariya Azam Khattak, Seema Shehzad, Hafsa Naseem, Mahnoor Zareen

Supervisor: Dr. Mariyah Azam

Peshawar Medical College

INTRODUCTION:

Sun exposure can have detrimental effects on our skin. Awareness and protection is essential to prevent these harms.

OBJECTIVE(S):

1. To assess the knowledge, attitude, and behavior of medical students towards sun exposure and sunscreen, ingredients, types, SPF value of sunscreen, and related diseases.
2. To inspect gender differences in sunscreen use.
3. To identify reasons for reluctance towards sunscreen use.

METHODOLOGY:

A Cross-sectional study was conducted among 312 students (equal males and females), selected by stratified sampling from July'24 to March'25 in Peshawar Medical College. The data was collected utilizing a self-administered questionnaire and analyzed through SPSS 25 (determining frequencies) and Chi-square test. A p -value (<0.05) was taken as significant.

RESULTS:

The majority (55%) considered sun exposure harmful, believing it can cause hyperpigmentation (81.4%), skin cancer (73.4%), and sunburns (90.4%) but not dry skin (42.6%) and moles (40.4%), regarded sunscreen as a key protection method (54.8%) for both genders and that SPF value holds significance (48.4%). They were not aware of the ingredients oxybenzone ($p=0.001$), types (54.8%), and SPF Value of sunscreen (25.3%). Daily users were 35.3% (predominantly females p -value= 0.000). Reluctance stemmed from discomfort (40.7%), lack of awareness (35.9%), believing it has no effect (14.1%) and that it's not required by men (9.3%).

CONCLUSION:

The majority were aware of the harms of sun exposure and the importance of sunscreen; however, their knowledge was superficial and didn't translate into daily practice. Gender significantly correlates with knowledge and behavior as females demonstrated more awareness and practice.

KEYWORDS:

Hyper-Pigmentation, Sunscreen, Skin Cancer.

ASSESSMENT OF PSYCHOSOCIAL AND PHYSICAL QUALITY OF LIFE IN THALASSEMIA PATIENTS ACROSS DIFFERENT HEALTHCARE SETTINGS IN KHYBER PAKHTUNKHWA

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INTRODUCTION:

Thalassemia, an inherited disorder leading to reduced hemoglobin, affects 5,000 children yearly with beta-thalassemia major, driven by consanguineous marriages and limited prenatal testing. This study explores the quality of life of thalassemia patients, focusing on four key domains Physical, Emotional, Social, and School functioning.

OBJECTIVE(S):

1. To assess the well-being of children by analyzing their physical activity, emotional health, social interactions, and academic performance.

METHODOLOGY:

A quantitative approach was employed and a cross-sectional study was conducted. A non-probability convenience sampling technique was used. By using a validated questionnaire data was collected from a sample size of 128 Thalassemia patients of two different age categories 2-12 years and 13-18 years from both public and private healthcare settings in Khyber Pakhtunkhwa, Pakistan, and data was analyzed using SPSS Version 27 by calculating frequency and percentages. The duration of the study was from 21 June to 25 September 2024.

RESULTS:

This study examines the QOL of thalassemia patients. Among children aged 2-12 years findings revealed that most children demonstrated physical independence however 95.9% experienced fear and 97.3% reported Academically 50.7% had attention deficit and 49.3% missed Scholl due to illness. Among children's age group 13-18 the results indicate 30% faced social difficulties and 25% have struggled academically. Physical health was moderately impacted with only 10% reporting severe mobility issues, suggesting that treatment is helping but not completely curing the disease.

CONCLUSION:

The findings indicate that children have generally better participation in physical activities and interaction but at the same time many experienced emotional distress and academic challenges.

KEYWORDS:

Thalassemia, Health-Related Quality Of Life (Hrql), Academic Performance

PREVALENCE OF ANXIETY AND DEPRESSION AMONG TEACHING FACULTY OF PRIVATE SECONDARY SCHOOL AT WARSAK ROAD, PESHAWAR (A DESCRIPTIVE STUDY)

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INTRODUCTION:

The World Health Organization (WHO) defines health as "a complete physical, mental, and social well-being and not merely the absence of disease or infirmity."

OBJECTIVE(S):

1. To determine the level of awareness about anxiety and depression among the faculty of a private secondary school in Warsak Road, Peshawar.
2. To find the frequency of common symptoms of anxiety and depression among the faculty of private secondary school Warsak Road, Peshawar.

METHODOLOGY:

A cross-sectional study of teaching faculty at schools on Warsak Road, Peshawar, used non-probability convenience sampling. A sample size of 200 was calculated based on Morgan's (2004) recommendations a validated questionnaire assessed awareness and symptoms of anxiety and depression. Data were entered and coded in SPSS. Descriptive statistics summarized the data. Chi-square tests examined associations, while logistic regression identified anxiety and depression predictors.

RESULTS:

The study assessed anxiety and depression literacy among 200 faculty members. While 25% had "Very Good Knowledge," 35% had "Good Knowledge," 30% had "Fair Knowledge" and 10% had "Poor Knowledge." Anxiety prevalence was high, with 40% in the mild range and 10% reporting severe anxiety. Depression prevalence was also high, with 35% in the mild range and 5% reporting severe depression.

CONCLUSION:

The results show that most faculty have fair to good awareness of anxiety and depression, but some lack knowledge. Common symptoms like depressed mood, tension, and insomnia are widespread.

KEYWORDS:

Anxiety, Depression, Faculty

THE IMPACT OF POOR HOSPITAL NAVIGATION ON PATIENT STRESS AND DELAYS

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INTRODUCTION:

Hospitals are complex spaces with multiple departments and unclear signage, often causing confusion, stress, and delays in day-to-day patient care. Most healthcare facilities lack adequate guidance mechanisms following traditional hospital signage.

OBJECTIVE(S):

1. Determine the patient stress due to poor navigation systems and their impact on patients, visitors, and hospital staff.

METHODOLOGY:

Our mixed methods study included a structured questionnaire and interviews of patients, visitors, and staff, conducted in a healthcare setup over a duration of 6 days. Response from 70 participants focusing on the effectiveness of hospital signage in way-finding, and the impact of navigation difficulties on stress and well-being was gathered.

RESULTS:

The preliminary results suggested that 14.2% of participants from the public sector rated their navigation system as very difficult in contrast to the private sector which is 2.6%. In the same way, 60.7% felt frustrated with way-finding in public hospitals than private which is 40%. Patients in public hospitals relied more on asking other patients for the way, while private hospitals provided better signage and staff assistance.

CONCLUSION:

This article provides insights into why improvement is necessary in this often-overlooked issue. Commonly suggested enhancements across both settings include better signage and digital screens with hospital maps. However, further investigation and research are required to determine the most effective approach to tackle this problem.

KEYWORDS:

Healthcare Sector, Unclear Hospital Signages, Poor Hospitals Navigation, Anxiety.

MATERNAL PERCEPTION OF NEONATAL ILLNESS: KEY INDICATORS, ENABLING FACTORS AND BARRIERS REGARDING HEALTH CARE SEEKING BEHAVIOR - A QUALITATIVE STUDY

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INTRODUCTION:

Neonatal age carries the highest risk of mortality in a child. Maternal knowledge about the neonate's health is the most critical factor for reducing neonatal mortality and morbidity.

OBJECTIVE(S):

1. Explore mothers' perceptions and interpretations of neonatal illness and symptoms.
2. Identify the most common symptoms mothers perceive as an indicator of neonatal illness warranting prompt health care advice.
3. Explore factors shaping mothers' perceptions and decisions about neonatal illness, including enablers, influential people, and healthcare barriers.

METHODOLOGY:

A qualitative phenomenological study was conducted among mothers of neonates in Peshawar in tertiary healthcare hospitals from July 2024 to January 2025. In-depth interviews were taken from 20 mothers. Thematic analysis was done using Braun and Clarke's approach.

RESULTS:

20 mothers with a mean age of 27 ± 7.8 years participated in the study. 65% of the neonates were male having a mean age of 16 ± 10.7 days. Thematic analysis generated 6 main themes and 3 sub-themes i.e. Mother's reliance on observable physical and behavioral cues to assess neonatal health, Barriers encountered in seeking neonatal healthcare, Primary healthcare advisors of the mother and her attitude towards them, Experience with children influencing the quality of neonatal care, Trust in healthcare providers, and Role of Digital Media and Public Awareness Campaigns in Improving Neonatal Healthcare Seeking

CONCLUSION:

Mothers are key decision-makers in neonatal health, influenced by trust, family, experiences, and access to care. Educating them to recognize illness signs is crucial for reducing neonatal mortality.

KEYWORDS:

Neonate, Maternal Perception, Barriers.

STUDY OF FREQUENCY, PATTERNS, AND AGGRAVATING FACTORS OF MIGRAINE HEADACHE IN HEALTHCARE STUDENTS AND PROFESSIONALS

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INTRODUCTION:

Migraine affects over a billion people worldwide, with medical students and professionals at higher risk due to stress and sleep disturbances. This study examines the impact of professional status on migraine headaches.

OBJECTIVE(S):

1. To determine and compare the frequency, patterns, and aggravating factors of migraine headaches among undergraduate healthcare students and professionals.

METHODOLOGY:

A cross-sectional study at Prime Foundation's institutes and hospitals (Nov 2024–Feb 2025) enrolled 328 medical, dental, and nursing participants (164 students, 164 professionals) via convenience sampling. Data was collected through a pretested questionnaire and analyzed using SPSS V.25 with descriptive statistics and chi-square tests.

RESULTS:

Migraine was reported in 96 (29.3%), more in students (34.3%) than professionals (23.7%) ($P=0.035$). Common symptoms included noise sensitivity (50.8% vs. 62%) and nausea (37.2% vs. 45.9%). Aggravating factors in students and healthcare Professionals were stress (79.6% vs. 91.8%), noise (69.4% vs. 81%), sleep changes (67.7% vs. 89.1%), and fatigue (64.4% vs. 70.2%). Migraine aggravation was linked to sleep changes ($P=0.011$), chocolate ($P=0.002$), cheese ($P=0.004$), and caffeine ($P=0.015$), with professionals more affected by dietary triggers. No significant differences were found in headache location, frequency, onset, pain type, or symptoms.

CONCLUSION:

Migraine prevalence was higher in students than in healthcare professionals, with stress and sleep disturbances being the most common triggers in both groups. Future research should explore targeted interventions to mitigate migraine triggers among healthcare students and professionals.

KEYWORDS:

Migraine, Students, Healthcare Professionals

IMPACT OF SLEEP QUALITY ON ATTENTION SPAN OF UNDERGRADUATE STUDENTS: A CROSS-SECTIONAL STUDY IN A PUBLIC SECTOR MEDICAL COLLEGE OF PAKISTAN

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INTRODUCTION:

Insufficient sleep is often associated with poor attention span and concentration levels, along with the academic performance of students. Medical students are more prone to be affected by this dilemma; therefore, this study emphasizes whether the attention span is affected by sleep quality.

OBJECTIVE(S):

1. To assess the impact of sleep quality on the attention span of undergraduate medical students from a public sector medical college in Pakistan

METHODOLOGY:

This cross-sectional study was conducted among medical undergraduates of Khyber Medical College from May 2024 to June 2024 via convenient sampling. A total sample of 300 was calculated using OpenEpi software. Sleep quality was assessed using the Sleep Quality Index (PSQI) and attention span was assessed using the Digit Span Test. The collected data was analyzed by Chi-square test using SPSS.

RESULTS:

Data from 213 participants were assessed, of whom 41.3% were males and 58.7% were females. Among the 223 participants, 21.5% had good sleep quality with a PSQI score ≤ 4 , and 78.5% had poor sleep quality. A chi-square test was performed which did not reveal any significant association between sleep quality and attention span ($p=0.889$).

CONCLUSION:

The study revealed a poor trend in the sleep quality of medical undergraduates, which was not significantly associated with the attention span. Poor sleep patterns need to be addressed, as they are crucial for the physical and mental well-being of individuals and their academic outcomes.

KEYWORDS:

Sleep quality, Sleep deprivation, Attention span, Medical students, Academic progress, Daytime drowsiness, Pittsburgh Sleep Quality Index

IMPACT OF ADVERSE CHILDHOOD EXPERIENCES ON OBESITY IN ADOLESCENTS: A CASE-CONTROL STUDY.

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INTRODUCTION:

Adolescent obesity is a global, long-standing problem of multi-factorial origin and a major contributor to preventable mortality and morbidity. Adverse childhood experiences (ACEs) are distressing events that occur in childhood.

OBJECTIVE(S):

1. To outline the association between adverse childhood experiences (ACEs) and obesity among adolescents in Pakistan.

METHODOLOGY:

This case-control study was conducted from May 2024 to June 2024 based on a sample of 460 adolescents recruited from different schools in Peshawar, Nowshera, and Mardan using a convenience sampling method. The participants were categorized according to their Body Mass Index (BMI) and ACE exposure level. Data was collected using a validated interview-based questionnaire and analyzed by multinomial logistic regression test using SPSS-28.

RESULTS:

Amongst the population, 11.6% were underweight, 33.1% were normal weight, 32.9% overweight, and 22.4% were obese. Elevated ACE scores were correlated with increased BMI; the obese group reported an average ACE score of 7.5, compared to 5.8 in the underweight group. Logistic regression analysis revealed that adolescents with high ACE exposure exhibited significantly higher odds of being classified as obese (adjusted odds ratio [aOR] = 3.157, $p = 0.003$) and overweight (aOR = 2.419, $p = 0.013$).

CONCLUSION:

The study's findings support the substantial link between ACEs and teenage obesity, indicating that early trauma may influence unhealthy eating behaviors and contribute to weight gain through maladaptive coping mechanisms.

KEYWORDS:

Adverse Childhood Experiences (Aces), Obesity, Adolescents, Body Mass Index (BMI)

KANGAROO MOTHER CARE VS. INCUBATOR CARE: A COMPARATIVE STUDY ON NEONATAL OUTCOMES

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INTRODUCTION:

Kangaroo Mother Care (KMC) and incubator care are key strategies for managing preterm and low birth weight infants. KMC, involving skin-to-skin contact, has been associated with improved neonatal stability and early discharge. This study compares KMC and incubator care regarding physiological outcomes and hospital stay duration.

OBJECTIVE(S):

1. To compare the effects of KMC and incubator care on neonatal temperature, respiratory rate, and oxygen saturation.
2. To assess the difference in hospital, stay duration between the two groups.

METHODOLOGY:

This cross-sectional study used secondary data from Hayatabad Medical Complex and Molvi Jee Hospital, Peshawar- We included those infants whose weight was less than 2500 grams or born before normal 37 weeks' gestation period. It included 288 preterm or low-birth-weight infants, with 144 in each group. Data was analyzed using IBM SPSS (27.0), employing Mann-Whitney and Chi-square tests.

RESULTS:

KMC significantly reduced hospital stay duration($p<0.05$). Incubator care had more hyperthermia cases, while KMC had more cases of hypothermia. From day 2 onward, KMC showed better temperature stability ($p<0.05$). KMC resulted in more normal respiratory rates, whereas incubator care had more cases of tachypnea ($p<0.05$). No significant difference in oxygen saturation was observed ($p>0.05$) so no relation could be drawn between Care type and Oxygen Saturation, although hypoxemia was more frequent in incubator care.

CONCLUSION:

KMC is more effective in reducing hospital stay, ensuring physiological stability, and is cost-efficient compared to incubator care. KMC should be widely implemented in resource-limited settings to reduce financial burdens and NICU overcrowding.

KEYWORDS:

Preterm Babies, Conventional Care, Kangaroo Mother Care, Skin-To-Skin Care, NICU

SOCIOCULTURAL PRACTICES AND THE HEALTHCARE-SEEKING BEHAVIOR OF MOTHERS REGARDING THE HEALTH OF THEIR NEWBORN: A QUALITATIVE STUDY

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INTRODUCTION:

Mothers' healthcare decisions for their newborns are deeply rooted in sociocultural practices. These influences shape their perceptions, choices, and access to medical care.

OBJECTIVE(S):

1. To identify the common sociocultural practices of mothers concerning newborn healthcare.
2. To explore the factors that shape maternal perceptions of these practices and investigate the community's contribution to their development.
3. To explore the impact of sociocultural practices and perceptions on maternal decision-making regarding healthcare-seeking for their newborns.

METHODOLOGY:

A qualitative phenomenological study was conducted among mothers of neonates in Peshawar's tertiary healthcare hospitals from July 2024 to January 2025. In-depth interviews were taken from 20 mothers. Thematic analysis was done using Braun and Clarke's approach.

RESULTS:

The study included 20 mothers (mean age 25 ± 4.7 years) and 65% male neonates (mean age 17 ± 9.6 days). Thematic analysis generated 7 main themes and 5 sub-themes i.e. 1. Traditional healthcare practices and beliefs about their perceived benefits, 2. Influence of social factors on traditional practices, healthcare-seeking behavior, and decision-making, 3. Decision-Making and Health-Seeking Strategies, 4. Influence of digital media on traditional practices and Self-Education, 5. Maternal Characteristics, attributes, and Economic Factors, 6. Impact of spiritual healing and religious practices on healthcare, 7. Trust in Healthcare Systems.

CONCLUSION:

This study underscores the significance of sociocultural practices, revealing a combination of modern healthcare and traditional approaches in maternal decision-making. Key factors influencing mothers' healthcare-seeking behavior include external and familial influences, religious beliefs, personal experiences, and accessibility to healthcare services.

KEYWORDS:

Sociocultural Practices, Healthcare-Seeking

COMPARATIVE ADHERENCE TO MEDICATION REGIMENS AMONG TYPE 1 AND TYPE 2 DIABETIC PATIENTS IN TERTIARY CARE HOSPITALS IN PESHAWAR

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INTRODUCTION:

Diabetes Mellitus, a growing global health crisis affects millions. In Pakistan, high prevalence necessitates effective management to prevent complications and improve outcomes.

OBJECTIVE(S):

1. To compare medication adherence between Type 1 and Type 2 diabetics.
2. To examine the influence of gender and socioeconomic factors.
3. To identify reasons for non-adherence across demographic groups.

METHODOLOGY:

A descriptive cross-sectional study was conducted from July 2024 to February 2025 in tertiary care hospitals in Peshawar. 200 Diabetes Mellitus patients were selected through non-probability sampling, and verbal consent was obtained. Data collected using an interview-based questionnaire was analyzed using SPSS version 25.

RESULTS:

The study analyzed medication adherence among diabetic patients (mean age: 52.76 years; 74% female, 26% male). Type 1 patients had significantly higher adherence than Type 2 ($p < 0.05$). Higher-income patients (>100,000 PKR) showed better adherence (59% "Always adhere"); lower-income patients (10,000-30,000 PKR) had poorer adherence (50% "Never adhere"). Forgetfulness was the most common reason for non-adherence among Type 2 patients (26%); 36% of Type 1 patients cited lack of support. Women were more likely to forget medication while 47% of men cited cost.

CONCLUSION:

The study reveals adherence disparities by diabetes type, socioeconomic status, and age. Forgetfulness and lack of support were key barriers, highlighting the need for reminders, financial aid, and education.

KEYWORDS:

Type 1 Diabetes Mellitus, Type 2 Diabetes Mellitus, Insulin

REDUCING PRESSURE ULCERS IN HIGH-RISK ADMITTED PATIENTS AT NORTHWEST GENERAL HOSPITAL PESHAWAR, A QUALITY IMPROVEMENT PROJECT

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Northwest School Of Medicine

INTRODUCTION:

Pressure ulcers (PUs) are a significant healthcare challenge, contributing to increased morbidity, prolonged hospital stays, and rising healthcare costs.

OBJECTIVE(S):

1. This quality improvement project aimed to reduce PU incidence by 50% among high-risk patients at Northwest General Hospital, Peshawar, through the implementation of the Turning Clock Tool.

METHODOLOGY:

The study was conducted from November 2023 to May 2024 and involved a three-phase approach; a pre-intervention phase (54 PU cases), intervention implementation, and a post-intervention phase (12 PU cases). The Turning Clock Tool, a visual aid prompting bi-hourly patient repositioning, was introduced across hospital wards to enhance pressure redistribution and minimize PU risk. High-risk patients were identified based on NICE guidelines. Data on demographics, PU incidence, ulcer staging, and compliance were collected from electronic health records.

RESULTS:

The intervention led to a 77.36% reduction in PU incidence. Stage I ulcers decreased by 73.91%, Stage II by 77.77%, Stage III by 100%, and Stage IV by 50%. Gluteal ulcers were reduced by 82.92%, while scapular, malleolar, and heel ulcers were eliminated. Additionally, hospital stays became shorter and more consistent, indicating improved patient management.

CONCLUSION:

The Turning Clock Tool proved to be an effective, cost-efficient strategy in significantly reducing PU incidence. The study highlights the importance of structured, evidence-based tools and consistent caregiver engagement in PU prevention, offering a replicable model for broader clinical settings.

KEYWORDS:

Pressure Ulcers, Turning Clock Tool, Quality Improvement, Hospital-Acquired Ulcers

MENTAL HEALTH DISPARITIES AMONG ORPHANED AND NON-ORPHANED ADOLESCENTS: A COMPARATIVE CROSS-SECTIONAL STUDY

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INTRODUCTION:

Approximately 153 million children worldwide are orphaned, with 17.8 Million of them losing both parents (1). Lack of parental supervision raises the risk of stress, anxiety, and depression and can cause serious psychological suffering (2). Other difficulties that orphans frequently encounter include mental health problems, societal discrimination, and restricted access to healthcare and education (3,4). Research comparing the psychological effects on orphans and non-orphans is still few, despite increased awareness of mental health issues.

OBJECTIVE(S):

1. To compare stress, anxiety, and depression levels between orphans and non-orphans in Swabi and Peshawar.

METHODS:

A comparative cross-sectional study with 326 participants (8-16 years) from Swabi and Peshawar, including 163 orphans and 163 non-orphans, used the DASS-21 scale for data collection, SPSS for analysis, and the Mann-Whitney U test for group differences.

RESULTS:

Mann-Whitney U tests revealed that orphans had significantly higher levels of anxiety ($U = 8416.000$, $Z = -6.058$, $p = 0.001$) and depression ($U = 7314.000$, $Z = -7.159$, $p < 0.001$) compared to non-orphans. Non-orphans had lower anxiety ($U = 11503.500$, $Z = -2.272$, $p = 0.23$) and depression ($U = 11503.500$, $Z = -2.272$, $p = 0.23$). However, no significant difference was found in stress levels between the two groups ($U = 11503.500$, $Z = -2.272$, $p = 0.23$), indicating similar stress levels in both groups.

CONCLUSIONS:

Orphans face greater mental health challenges, underscoring the need for targeted psychological support.

KEYWORDS:

Orphanhood, Depression, Anxiety, Stress

TRENDS IN PNEUMONIA-ASSOCIATED MORTALITY IN PATIENTS WITH ALZHEIMER'S DISEASE IN THE UNITED STATES: A 21-YEAR RETROSPECTIVE ANALYSIS

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INTRODUCTION:

Pneumonia is one of the most common infections of the respiratory tract that can potentially be life-threatening, especially in patients with dementia. However, the burden of this disease and its reported frequency as a cause of death in patients with Alzheimer's Disease (AD) has not been fully explored across different times, particularly the COVID-19 era.

OBJECTIVE(S):

1. To analyze the temporal trends and disparities in pneumonia-associated deaths among patients with AD, aged 25 or older in the United States from 1999-2020.

METHODOLOGY:

Data from the CDC WONDER database was used to identify deaths attributed to pneumonia in individuals diagnosed with AD over the course of 21 years, from 1999 to 2020. Age-adjusted mortality rates (AAMRs) per 100,000 people were calculated and stratified by year, sex, race/ethnicity, urbanization level, and geographic region.

RESULTS:

From 1999 to 2020, a total of 191,215 deaths were recorded due to pneumonia in AD patients aged 25 and older. Mortality rates declined from 1999 to 2019 but sharply increased by 141.68% in 2020 during the pandemic outbreak. Men had higher AAMRs than women throughout the study period, with significant decreases until 2019 followed by a marked increase during the peak of the pandemic (APC: 27.60% in men; 29.26% in women). Racial disparities were evident, with non-Hispanic White individuals having the highest AAMRs, followed by Hispanic or Latino, non-Hispanic Black, and non-Hispanic Asian or Pacific Islander populations. Regional disparities were also observed, with higher mortality in non-metropolitan areas.

CONCLUSION:

Our findings suggest that pneumonia-related deaths in AD patients declined from 1999-2019 but surged by 141.68% in 2020, likely due to COVID-19. Higher mortality rates persisted among older adults, men, Black individuals, and those in non-metro areas throughout the overall study period. Targeted prevention strategies and further research are crucial to improving outcomes and reducing preventable deaths.

KEYWORDS:

Alzheimer's Disease, Pneumonia, Mortality Trends, Covid-19, Epidemiology, Healthcare Disparities.

INVESTIGATING THE RELATION BETWEEN INSOMNIA, NEUROTICISM, AND THEIR EFFECTS ON ACADEMIC PERFORMANCE AMONG UNDERGRADUATE MEDICAL AND DENTAL STUDENTS IN PESHAWAR.

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INTRODUCTION:

Insomnia is a common sleep disorder characterized by difficulty in falling asleep or staying asleep for the desired duration despite having the opportunity for sleep. It may be acute-recurring within days or a week, or chronic lasting for one month or more.

OBJECTIVE(S):

1. To determine the frequency of insomnia and neuroticism among undergraduate medical and dental students.
2. To compare the differences between Day scholars and Hostellite students in terms of insomnia and neuroticism.

METHODOLOGY:

A Descriptive cross-sectional study was conducted from 10th June 2024 to 5th October 2024. The sample size was 364. A convenient sampling technique was used in this study among the Medical and Dental Colleges of Peshawar. Data was collected through a self-administered Questionnaire, NEO-FFI. SPSS-25 was used for data analysis by the chi-square test and Pearson correlation for the relation between variables.

RESULTS:

Around 28% of the students (n=102) experienced mild insomnia, while 25% of students (n=91) reported moderate insomnia. Notably, 47% of the participants (n=171) suffered from severe insomnia. Many hostelites, (40.7%, n=148) were insomniacs as compared to (31.3%, n=114) of day scholars. The majority of the participants, 59.8% (n = 217), displayed a high level of neuroticism. A significant strong positive correlation was found between insomnia and neuroticism ($r = 0.351$, $p = 0.000$).

CONCLUSION:

Study shows that nearly half (47%) of the students surveyed suffer from severe insomnia. A large proportion of students (59.8%) exhibit high levels of neuroticism, which correlates moderately and significantly with insomnia. We also found that hostelite students exhibit a higher incidence of insomnia compared to day scholars.

KEYWORDS:

Insomnia, Neuroticism, Academic Performance, Medical Students.

COMPARATIVE ANALYSIS OF THE PSYCHOLOGICAL IMPACT OF ANDROGENETIC ALOPECIA ACROSS DIFFERENT AGE GROUPS OF MALES AMONG THE GENERAL POPULATION OF PESHAWAR

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INTRODUCTION:

Androgenetic alopecia (AGA), a common form of hair loss, affects individuals worldwide, influencing not only their physical appearance but also their psychological well-being. While the genetic and hormonal factors contributing to AGA are well-documented, its psychological impact remains underexplored, particularly in Peshawar.

OBJECTIVE(S):

1. To assess the psychosocial impact of Androgenetic alopecia on males across three age groups (18-30, 31-50, and 51+ years) in terms of self-esteem, anxiety, and depression
2. To Compare and contrast the psychosocial impact of AGA across the three age groups, focusing on emotional distress and self-esteem

METHODOLOGY:

A cross-sectional descriptive study was conducted among three age groups (18-30, 31-50, 51+ years) among the general population of Peshawar. Data were collected using a structured and pre-validated questionnaire with psychosocial impact using a hair-skin-specific index scale. A sample size of 101 participants was determined using a 95% confidence level.

RESULTS:

Our findings show a high prevalence of hair loss, particularly in the front and crown areas. Most participants had a family history of hair loss, with 86.1% affected. Significant hair loss was common, with 35.6% in Grade 4 and 23.8% in Grade 5. Younger participants experienced a greater psychosocial impact, and longer hair loss duration correlated with a more significant psychosocial impact, leading to poorer quality of life. Older participants and those with longer hair loss duration showed poorer outcomes.

CONCLUSION:

The study reveals a high prevalence of androgenetic alopecia among males in Peshawar, with significant hair loss affecting both the front and crown areas. Younger individuals experienced a greater psychosocial impact, while longer hair loss duration and higher grades of alopecia were linked to poorer quality of life and increased distress.

Keywords:

Androgenetic Alopecia (Aga), Psychosocial Impact, Hair loss

SEHAT SAHULAT PROGRAM: TRANSFORMING SURGICAL PRACTICES IN PESHAWAR - A PRE AND POST-IMPLEMENTATION ANALYSIS

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INTRODUCTION:

Access to quality healthcare is a fundamental right, yet financial barriers often stand in the way. To address this, the KP government launched the Sehat Insaaf Card in 2016, later expanding it into the Sehat Sahulat Program. This free initiative improved service delivery, optimized resources, and achieved 98.77% patient satisfaction.

OBJECTIVE(S):

1. To compare the intra-op and post-op practices of surgeons in cholecystectomy, hernioplasty and haemorrhoidectomy before and after the implementation of Sehat Sahulat Program.

METHODOLOGY:

A comparative cross-sectional study was conducted at Kuwait Teaching Hospital from June to August 2024. Patient records of cholecystectomy, hernioplasty, and hemorrhoidectomy before and after SSP implementation were collected via random sampling (sample size: 264). Descriptive statistics were applied and the data was analyzed using Chi Square test (SPSS version 26.)

RESULTS:

The data of 264 surgeries (cholecystectomy, hernioplasty, hemorrhoidectomy) was analyzed, including 140 before SSP, and 124 under SSP. Before SSP, 70% of cholecystectomy cases had only essential investigations, but supplementary tests increased to 50% under SSP ($p = 0.004$). In hernioplasty, they rose by 15% ($p = 0.014$), while in hemorrhoidectomy, non-essential tests decreased by 20% ($p = 0.004$). Postoperatively, IV antibiotics and PPIs were used in 70% of cases before SSP, shifting to oral antibiotics (85%) and PPIs (11%) under SSP, with IV combinations in only 6% ($p < 0.0001$). Hospital stays were mostly ≤ 5 days, but before SSP, 20% exceeded 10 days. Under SSP, stays remained ≤ 5 days, except in 2% of cases ($p = 0.000025$).

CONCLUSION:

The results confirm that the observed differences before and after SSP implementation are strongly significant across all analyzed categories.

KEYWORDS:

Cholecystectomy, Hernioplasty, Haemorrhoidectomy

IMPACT OF FREQUENT EXPOSURE TO VIOLENT MEDIA CONTENT ON EMOTIONAL DESENSITIZATION IN UNDERGRADUATE STUDENTS OF PESHAWAR: A CROSS-SECTIONAL STUDY

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Peshawar Medical College

INTRODUCTION:

The advancement of media in the digital era has increased access and exposure to violent and distressing content. This study aims to revolve around the potential relationship between prolonged exposure to such media content and emotional desensitization. Emotional desensitization is defined as a reduction in emotional responsiveness to a stimulus after repeated exposure.

OBJECTIVE(S):

1. To correlate frequent exposure to violent or distressing media content with emotional desensitization.
2. To determine the influence of gender differences on the extent of emotional desensitization due to media violence.
3. To determine the impact of media violence on the psychological health and social behavior of the individuals.

METHODOLOGY:

A cross-sectional study was done among undergraduate students of Peshawar, from PMC, KGMC, RMC, PIMS and NWSM. Perspective regarding media violence was assessed. Non probability convenient sampling technique was used with sample size of 384 with confidence interval 95% and margin error 5%.

RESULTS:

Initial findings indicate a positive correlation between frequent exposure to violent media content and emotional desensitization. Participants with higher exposure levels reported reduced emotional responsiveness and lower empathy scores. Gender differences were observed, with males exhibiting higher desensitization levels compared to females. Additionally, prolonged exposure was associated with a decline in prosocial behavior and increased tolerance for violence.

CONCLUSION:

The study suggests that frequent exposure to violent media contributes to emotional desensitization, affecting empathy and social behavior. These findings highlight the need for awareness regarding media consumption and its psychological impact, emphasizing the importance of responsible media engagement.

KEYWORDS:

Emotional Desensitization, Violent Content, Psychological Health

FACTORS THAT LEAD TO PATIENT MISTRUST OF THE HEALTHCARE SYSTEM IN HARGEISA, SOMALILAND: A QUALITATIVE EXPLORATION

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INTRODUCTION:

The population of Somaliland report that they mistrust doctors and the healthcare system in Somaliland.

OBJECTIVE(S):

1. To identify the factors that lead to patients having mistrust towards the healthcare system in Somaliland and use the findings as a foundation for future policies.

METHODOLOGY:

A descriptive study was conducted to understand the factors contributing to the population's mistrust of the healthcare system in Hargeisa. Data was collected through interviews with 49 participants using a survey questionnaire administered by interviewers, and convenience sampling was used to select participants based on availability and accessibility.

RESULTS:

Through our analysis, we identified 11 themes that investigate issues influencing healthcare quality, cost, and accessibility, such as financial barriers, diagnostic accuracy, drug use, equipment quality, laboratory role, doctor knowledge and skills, medical ethics, governance, local doctor reputation, foreign healthcare, and the quality of available healthcare services.

CONCLUSION:

Patient-physician mistrust in Somaliland can be addressed by implementing laws, examining doctors' knowledge, and examining hospital facilities. Improving public health sectors and limiting patient payments can reduce healthcare costs. Regulations on drugs can reduce medication errors and restore trust in the healthcare system.

KEYWORDS:

Mistrust, Health Care System, Qualitative Exploration

DENTAL SCIENCES

STUDY OF FREQUENCY OF GINGIVITIS AND FACTORS ASSOCIATED WITH GINGIVITIS IN PATIENTS UNDERGOING ORTHODONTIC TREATMENT

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INTRODUCTION:

Orthodontic treatment is a widely utilized approach for correcting dental malocclusions and improving the aesthetics of oral health. However, orthodontic treatment can present challenges to gingival health. Common periodontal issues associated with orthodontic treatment encompass gingivitis and other inflammatory conditions.

OBJECTIVE(S):

1. To determine the frequency of gingivitis in orthodontic patients.
2. To identify risk factors influencing gingivitis such as age, gender, oral hygiene, and type of orthodontic appliance.

METHODOLOGY:

A cross-sectional study was conducted on 100 patients in the orthodontic department of Peshawar Dental College and Hospital from September 2024 to December 2024. A sample of 100 patients (male & female) was selected via a nonprobability convenience type sampling technique. Patients with complete dental orthodontic appliances were included. Data was analyzed by calculating percentages and frequency and presenting it into bar graphs using SPSS v26.

RESULTS:

The study found that 57% of participants were between 18 and 24 years old, with higher gingivitis occurrence in those receiving orthodontic care exceeding 18 months (54%). Key risk factors included infrequent dental visits (15% never visited), failure to use additional cleaning tools (27%), and perception of gum changes (63%). Swollen gums (27%) and bleeding gums (23%) were the most common symptoms. A significant association was observed between metallic braces and gingival inflammation ($p < 0.05$).

CONCLUSION:

The examination revealed that metallic braces were strongly linked to gingivitis and discomfort, causing increased stress among orthodontic patients.

KEYWORDS:

Gingivitis, Orthodontic Treatment, Periodontal Health, Oral Hygiene, Metal Braces

THE EFFECT OF DEPRESSION ON ORAL HYGIENE STATUS

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Peshawar Dental College

INTRODUCTION:

Depression is a mental health disease, and oral hygiene is a critical component of general health which can be influenced by mental health, so taking care of your mental health may improve your oral hygiene status.

OBJECTIVE(S):

1. To determine the effect of depression on the oral hygiene status of patients visiting the outpatient department of Peshawar Dental College
2. To determine the association between depression and oral hygiene status.

METHODOLOGY:

A Cross-sectional study was done to assess the oral hygiene of 200 patients with depression of aged 18-65 years attending the outpatient department of Peshawar Dental College. Data was collected through a self-reported Beck's depression questionnaire and simplified oral hygiene Index (OHI-S). Descriptive statistics (chi-square) was used to compare the oral hygiene status with the level of depression.

RESULTS:

Among 200 samples, 33 patients exhibited mild depression. Out of these 26 (78%) had good oral hygiene while 7 (21%) had fair oral hygiene. Among 25 mildly depressed samples, 13 (52%) had good oral hygiene and 12 (48%) had fair oral hygiene. 13 patients fell into borderline clinical depression and 13 fell into severe depression categories. 8 (61.5%) borderline clinical depression and 11 (84.6%) severe depression samples had fair oral hygiene, respectively. The Pearson chi-square value of 0.000 showed a high statistically significant association between depression and oral hygiene

CONCLUSION:

It was concluded that the severely depressed patients had unsatisfactory oral hygiene status.

KEYWORDS:

Depression, Oral Hygiene, Beck's Depression Index, Simplified Oral Hygiene Index.

INCIDENTAL CAROTID ARTERY CALCIFICATION DETECTION ON ROUTINE DENTAL RADIOGRAPHS: A NOVEL CARDIOVASCULAR SCREENING TOOL FOR RESOURCE-LIMITED SETTINGS

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INTRODUCTION:

Carotid artery calcification (CAC) is a strong marker of atherosclerosis, predictive of future cardiovascular events. While advanced imaging like CT angiography is the gold standard, routine dental panoramic radiographs are low-cost and widely accessible, presenting a novel screening opportunity, especially in resource-limited settings.

OBJECTIVE(S):

1. To evaluate the prevalence of incidental CAC detection on dental panoramic radiographs.

METHODOLOGY:

This retrospective observational study reviewed panoramic radiographs from public and private dental facilities in Peshawar, Pakistan (2019-2021). Radiographs of patients aged 25 and older, clearly visualizing the carotid artery bifurcation, were independently analyzed by three blinded oral radiologists. Descriptive statistics determined prevalence, demographic trends, and age-specific patterns.

RESULTS:

Of 1,195 radiographs, 332 met inclusion criteria, with 25 patients (7.5%) showing incidental CAC. The prevalence was 7.8% in females and 7.1% in males, with an increasing trend in older age groups. The mean age of CAC-positive patients was 42.3 years (range 25–70).

CONCLUSION:

Panoramic radiographs are a cost-effective and low-radiation alternative for incidental CAC detection, especially in regions with limited access to advanced imaging. Early detection through routine dental evaluations can facilitate timely cardiovascular interventions, potentially reducing cardiovascular morbidity and mortality.

KEYWORDS:

Carotid Artery Calcification; Panoramic Radiography; Cardiovascular Risk Assessment; Dental Imaging; Resource-Limited Settings

THIRD MOLARS: MAPPING IMPACTION PATTERNS, PREVALENCE, AND THEIR ASSOCIATED PATHOLOGIES

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INTRODUCTION:

Third molars, commonly known as wisdom teeth, are a prevalent dental issue that, when left untreated, can lead to various complications such as pericoronitis, periodontitis, caries, root resorption of adjacent teeth, and cyst formation. These conditions can affect not only oral health but also overall well-being, often requiring antibiotics and rest due to recurrent infections. In more severe cases, impacted third molars can lead to facial space infections, which may cause significant morbidity and mortality.

OBJECTIVE(S):

1. To determine the prevalence of third molar impactions and associated pathologies in Peshawar, Khyber Pakhtunkhwa (KPK), and to evaluate the demographic distribution of patients.

METHODOLOGY:

A retrospective observational study was conducted in dental colleges of Peshawar, KPK, using convenience sampling. Patients with orthopantomograms (OPGs) from Rehman College Dentistry's radiology department were included, analyzing third molar pathologies and impaction patterns. Incomplete data or substandard OPGs were excluded. Data was analysed by calculating frequencies and percentages.

RESULTS:

A total of 104 OPGs were reviewed. The study found that 52.5% of participants had impacted third molars, with 15% of females and 10% of males presenting with carious teeth. Horizontal impactions were more common in males (17.5%) than females (7.5%), while mesioangular impactions were more frequent in females (17.5%) compared to males (7.5%).

CONCLUSION:

This study highlights the high prevalence of third molar impactions and associated pathologies in the region, underscoring the importance of early diagnosis and timely intervention to prevent complications.

KEYWORDS:

Third Molars, Wisdom Teeth, Impactions, Pathology, Pericoronitis Periodontitis, Cysts, Root Resorption, Orthopantomogram, Impaction Pattern

AWARENESS OF BRUXISM AMONGST UNDERGRADUATE STUDENTS

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Braikhna Fatima, Muskan Rehman
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INTRODUCTION:

Bruxism is a behavior characterized by clenching or grinding of teeth and/or by thrusting of jaw muscles. Bruxism has 2 circadian manifestations i.e. sleep bruxism and awake bruxism. Bruxism can have numerous adverse effects on oral health and overall well-being. Early detection and intervention are crucial to mitigate these adverse effects.

OBJECTIVES(S):

1. This study aims to assess awareness and prevalence of bruxism among undergraduates

METHODOLOGY:

A descriptive cross-sectional study was conducted on 110 students from June to November 2024 on 3rd-year students of Peshawar Medical and Dental College. Participants completed a structured questionnaire assessing their knowledge, self-reported symptoms, and awareness of bruxism. Data was analyzed through frequency and percentages using SPSS version 26.

RESULTS:

The result shows that 22.4% of undergraduate students had daytime bruxism, while 12.9% had sleep bruxism. Additionally, 8.6% of students reported symptoms such as tooth wear and pain in the temple region. Despite these findings, only 25.9% of students were aware of their habit of grinding teeth over the last six months, highlighting a gap between symptom prevalence and self-awareness.

CONCLUSION:

The study indicates that bruxism is relatively prevalent among undergraduate students, but their awareness of the condition remains limited. Incorporating bruxism education into medical and dental curricula could enhance early detection and preventive care. Further research is recommended to explore the relationship between bruxism, stress, and lifestyle habits in the student population.

KEYWORDS:

Oral health, Bruxism, Students, Frequency, Awareness

PREVALENCE OF DENTAL CARIES AMONG 11-13 YEARS OLD SCHOOL CHILDREN OF PRIVATE SCHOOLS IN HAYATABAD PESHAWAR

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INTRODUCTION:

Dental caries is a highly prevalent oral health condition that has the potential to impact people of every age, the highest priority risk group is school children. *Streptococcus sobrinus* and *Streptococcus mutans* are the primary microorganisms responsible for caries.

OBJECTIVE(S):

1. To determine the prevalence of dental caries in 11 to 13-year-old school children of Hayatabad, Peshawar.

METHODOLOGY:

A cross-sectional study was conducted on children aged between 11 and 13 years who were studying in various schools in Peshawar city (Hayatabad). The sample size was 310 students selected through the consecutive sampling technique. The data was collected through a questionnaire that was filled out by an examiner. It included demographic information followed by oral hygiene practices, past dental experiences, periodontal status, and the Decayed, Missing, and Filled Teeth (DMFT) Index chart. The data collected were analyzed and tested for significance using one-way ANOVA and SPSS (version 27).

RESULTS:

A high prevalence (75%) of dental caries among school-going children aged 11-13 years was found. The mean DMFT score was 1.18 (1.20 for males and 1.17 for females). This high score was attributed to brushing frequency, which was found to be inadequate. Most children brush their teeth only once a day or less, with a significantly lower proportion following the recommended twice-daily brushing routine.

CONCLUSION:

The study showed a high prevalence of dental caries according to the DMFT score in school-going children of Hayatabad, Peshawar, whose mean age was 12.

KEYWORDS:

Caries, DMFT, Prevalence

ORAL HEALTH LITERACY AND ITS ASSOCIATION WITH CARIES EXPERIENCE AND PERIODONTITIS: A CROSS-SECTIONAL STUDY AMONG GENERATION Z AND MILLENNIALS IN PESHAWAR, PAKISTAN

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INTRODUCTION:

Oral health is a key determinant of overall health, quality of life, and well-being. Oral Health Literacy (OHL) significantly influences oral health behaviors and outcomes. While extensive research has examined OHL and oral health status, generational comparisons remain unexplored.

OBJECTIVE(S):

1. To assess Oral Health Literacy, caries experience, and periodontitis in Generation Z and Millennials and examine the differences in their associations.

METHODOLOGY:

A convenient sample of 296 participants was taken from the General OPD, Department of Oral Medicine, Khyber College of Dentistry. Demographic details, income, education, and oral hygiene habits were recorded. Cary's experience was assessed using the DMFT index, and periodontal severity was categorized using CDC criteria. OHL was measured using the CMOHK questionnaire and classified into poor, adequate, and good based on tertile cutoffs.

RESULTS:

The study included 296 participants (52.7% males, 47.3% females), equally split into Generation Z and Millennials. Gen Z had significantly higher OHL (13.78 ± 3.36) than Millennials (11.60 ± 3.41 ; $p < 0.001$). Millennials had higher DMFT scores (5.47 ± 4.14 vs. 2.41 ± 2.42 ; $p < 0.001$) and periodontitis prevalence ($p < 0.001$). OHL correlated with lower DMFT in Gen Z ($p = 0.014$) but not in Millennials ($p = 0.87$). OHL was significantly associated with education ($p < 0.001$), income ($p = 0.007$), brushing ($p = 0.018$), and dental visits ($p = 0.013$).

CONCLUSION:

Generation Z had higher OHL and better oral health than Millennials. Enhancing OHL may reduce disparities and improve oral health through targeted interventions.

KEYWORDS:

Dental Caries, Oral Health Literacy, Generational Comparison, Periodontitis

ORAL HEALTH AND FRAILTY IN ELDERLY PEOPLE OF WAH CANTT

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INTRODUCTION:

The interplay between oral health and frailty has gained significant attention in the healthcare community, particularly concerning the well-being of the elderly population. With the rising concerns over health issues and fragility in old age, ensuring optimal oral health has become a crucial aspect of promoting a healthier lifestyle for senior citizens.

OBJECTIVE(S):

1. To find out the association between oral health and frailty in elderly people.

METHODOLOGY:

A Cross-sectional Study was done at POF Hospital, Wah Cantt, from July 2023 to June 2024. The Sample size of 382 was selected by Convenient Sampling. The data collection tool, Groningen Frailty Index (GFI), consisting of 15 items, was used to assess Frailty, and Oral Health was assessed by the Oral Health Assessment Tool (OHAT), consisting of 8 items. Data was analyzed using SPSS version 23. Frequencies (%) were calculated for descriptive variables. The chi-square test was used to find out the association of variables at $p < 0.05$.

RESULTS:

Out of 382 elderly individuals 200 were males and 182 were females with an average of 65 years. The prevalence of Frailty was 68.19% and pre-frailty was 31.9%. 35.6% of people had good oral health, 50.8% required monitoring, and 13.6% had poor oral health. Poor oral health was found significantly worse among frail people (p-value 0.000).

CONCLUSION:

The study conclusively demonstrates a significant relationship between oral health and Frailty among the elderly, emphasizing the need for specialized interventions.

KEYWORDS:

Groningen Frailty Index (GFI), Oral Health Assessment Tool (OHAT), Frailty, Oral Health, Elderly

PREVALENCE OF BRUXISM, STRESS, AND SLEEP QUALITY ACROSS AGE GROUPS IN A DISTRICT: A CROSS-SECTIONAL STUDY

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INTRODUCTION:

Bruxism is a common but often overlooked condition that can lead to serious oral health issues and diminished quality of life. It has been linked with stress and insomnia.

OBJECTIVE(S):

1. To determine the prevalence of bruxism among various age groups and its correlation with stress and sleep disturbance.

METHODOLOGY:

Cross-sectional research was carried out in a District in KPK, encompassing schools, work settings, and homes. 410 participants were recruited using stratified random sampling. Data were gathered via the Perceived Stress Scale, the Pittsburgh Sleep Quality Index, and a standardized questionnaire. IBM SPSS Version 30 was utilized for the analysis of data to calculate frequency.

RESULTS:

Prevalence of bruxism was 11.95% (49/410), most common in the 20–34 years age group (9.43%), followed by 35–44 years (2.92%). Stress was indicated by 25.85% (106/410) of respondents, mainly in the 20–34 years age group (31.13%). Poor quality of sleep was recorded in 19.02% (78/410) of cases, most common in 20–34 years (21.69%). A strong association was identified between bruxism and stress and between bruxism and low sleep quality.

CONCLUSION:

Bruxism is widespread in young adults and is very correlated with stress and sleep quality. These results indicate the importance of stress management and sleep quality improvement targeted interventions focusing on reducing the incidence of bruxism.

KEYWORDS:

Bruxism, Sleep Quality, Prevalence, Stress, Age Groups, Cross-Sectional Study.

KNOWLEDGE AND ATTITUDE OF DENTIST OF PESHAWAR REGARDING DENTAL CARIES VACCINE

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INTRODUCTION

Dental caries, commonly known as tooth decay, remains one of the infectious diseases affecting all age groups. Despite precautionary measures, the increasing rate of dental caries leads researchers to look for new ideas to stop it before happening. One of the ideas is to make a vaccine that could stop the bacteria, especially streptococcus mutans causing caries.

OBJECTIVE(S):

1. To assess the level of knowledge among dentists about dental caries vaccine.
2. To evaluate the attitude of dentists towards the dental caries vaccine.

METHODOLOGY:

A cross-sectional survey at Peshawar Dental College and Hospitals included 150 dentists selected via Raosoft software using non-probability convenience sampling. Data from a self-structured questionnaire was analyzed in SPSS, with descriptive statistics summarizing demographics, knowledge, and attitudes, and inferential statistics assessing associations.

RESULTS:

A survey on dental professionals' perceptions of a dental caries vaccine revealed that 72.7% of respondents were female, with 78.7% having 1–10 years of practice. General dentistry was the primary specialty (51.3%), and 89.3% practiced in urban areas. Awareness of the vaccine was reported by 51.3%, but only 12% considered themselves very knowledgeable. The primary target, *Streptococcus mutans*, was correctly identified by 84%. Safety (52.7%) and efficacy (14.7%) were the main concerns.

CONCLUSION:

The findings indicate moderate awareness but limited in-depth knowledge among dental professionals regarding the dental caries vaccine. While concerns about safety and efficacy exist, overall perception remains positive, with a strong willingness to recommend its use.

KEYWORDS:

Dentists, Dental Caries Vaccine, Knowledge, Attitude

EXPLORING THE RELATIONSHIP BETWEEN GINGIVITIS AND ANXIETY DISORDER

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INTRODUCTION:

Anxiety disorders are among the most common mental health conditions globally leading to significant impairments in daily functioning. Concurrently, gingivitis is marked by inflammation of the gums and is influenced by various factors including poor oral hygiene, smoking, and systemic health conditions. Emerging evidence suggests a potential link between mental health disorders and oral health outcomes.

OBJECTIVE(S):

1. To investigate the relationship between anxiety disorders and gingivitis.

METHODOLOGY:

It's a cross-sectional study conducted on the patients of 3 dental hospitals (PDC, KCD, RCD). The sample size was 200 calculated by the WHO calculator and the study duration was 9 weeks. A structured questionnaire, Hamilton scale and gingivitis scale were used to measure oral hygiene, anxiety, and gingivitis respectively. Data was analyzed with a chi-square test by using PSS.

RESULTS:

The results show that out of 35.5% of healthy patients, 30.5% had healthy gingiva. Among the 32% of patients, there were 20% had very mild gingivitis, 33% had mild gingivitis, and 16.5% had moderate gingivitis. Applying the chi-square test between anxiety and gingivitis revealed a significance level of 0.001.

CONCLUSION:

We concluded that there is a statistically significant relationship between anxiety and gingivitis. Higher anxiety levels correlate with increased gingivitis.

KEYWORDS:

Gingivitis, Anxiety, Patient

AWARENESS REGARDING DIGITAL DENTISTRY AMONG DENTAL STUDENTS AND HOUSE OFFICERS IN PESHAWAR

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INTRODUCTION:

Technology has changed dentistry in today's dynamic world increasing precision, effectiveness, and patient comfort. Modern technologies i-e CAD/CAM, scanners and CBCT have cut down the number of visits and lowered the workload on dentists and technicians.

OBJECTIVE(S):

1. To assess the awareness of digital dentistry among dental students and house officers.

METHODOLOGY:

A cross-sectional study on 255 dental students was conducted from May 2024 to January 2025 in Peshawar through a non-probability convenience sampling. A closed-ended questionnaire with a 2-point Likert scale was used. SPSS 25 was used for descriptive statistics and chi-square tests.

RESULTS:

This study includes 255 dental students from different institutions. Out of them, 70% knew about digital dentistry, and 21% attended workshops on it. 93% of respondents agreed that it increases efficiency of work and 87% said it will produce better results than traditional techniques. However, 78% reported inadequate hands-on training, and 82% were concerned about the lack of digital dentistry courses. 87% of respondents believed that digital dentistry would shorten treatment times and improve patient satisfaction. Chi-square results show a significant difference in knowledge of digital dentistry but no significant difference in perception of its precision. Additionally, there was no significant difference in participants' awareness of CAD/CAM technology (p-values: 0.013, 0.92, and 0.2, respectively with a significance level CI 95% and the level of significance set at 0.05).

CONCLUSION:

The study suggests that students have a good understanding of digital dentistry and are motivated to integrate it into future practices.

KEYWORDS:

Dentistry, Digital Technologies, CAD/CAM.

FREQUENCY OF PERIAPICAL ABSCESS IN PATIENTS WITH 2 DIABETES MELLITUS VISITING PESHAWAR DENTAL COLLEGE

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INTRODUCTION:

A periapical abscess is a severe dental infection that occurs when bacteria infect pulp of tooth, leading to a painful abscess at tip of the root. It affects significant portion of population and leads to life threatening complications. Patients having Type 2 Diabetes are more prone to Periapical abscess.

OBJECTIVE(S):

1. To determine the frequency of Periapical abscesses in Type 2 Diabetic Patients.

METHODOLOGY:

A descriptive cross-sectional study was conducted on Type 2 Diabetic patients visiting PDC. 50 patients participated in a duration of 2 months. Patient Proformas were filled assessing their clinical plus radiographic features of Periapical abscess. A non-probability convenience sampling and SPSS version 26 were used to analyze the data using percentages.

RESULTS:

In the current study, 26% of participants were male and 74% were female. Periapical abscesses in Diabetic patients were found 60% radiographically. Among the symptoms, pain was noted in 96.7% of cases. In swelling among patients with abscesses, 13 were mild, 13 moderate, and 4 severe. Tooth numbers 16 and 46 were found to have more abscesses. Diabetic patients have more chances of Periapical abscess.

CONCLUSION:

A higher prevalence of Periapical abscesses was reported in Diabetic patients. Comprehensive dental treatment should be administered in such patients for good glycemic control.

KEYWORDS:

Periapical Abscess, Radiolucency, Patients

KNOWLEDGE AND AWARENESS OF FORENSIC ODONTOLOGY AMONG DENTAL STUDENTS AND HOUSE OFFICERS IN PESHAWAR

Sundas Ijaz Khattak, Fatima Tahsin

Supervisor: Dr. Sana Arbab

Peshawar Dental College

INTRODUCTION:

Forensic odontology is crucial in determining gender, race, and age through careful analysis of teeth and skull features. This study aims to assess the knowledge and awareness of forensic odontology among dental students and house officers in Peshawar, identifying gaps and opportunities for further education.

OBJECTIVE(S):

- To assess the level of knowledge and awareness of forensic odontology among undergraduate dental students and house officers.
- To evaluate their interest in studying forensic odontology.

METHODOLOGY:

A cross-sectional study was conducted from July 2024 to March 2025. A total of 227 participants were recruited using a non-probability consecutive sampling technique, including students from PDC, SBDC, RCD, and KCD. Data were collected through a pre-tested, structured questionnaire and analyzed using SPSS version 26.

RESULTS:

Only 38.8% of participants had some awareness of forensic odontology, and 19.4% had received formal education on the subject. Just 8.9% were aware of the use of dental records for human identification. However, 65.2% showed interest in studying forensic odontology, and 54.2% believed it should be a separate subject in the undergraduate curriculum. Additionally, 60.4% considered it important for medico-legal cases.

CONCLUSION:

The study revealed low levels of formal education and understanding of forensic odontology. Despite this, a majority expressed interest in learning more about the field. The study recommends incorporating forensic odontology into the dental curriculum.

KEYWORDS:

Forensic Odontology, Dental Records, Tooth DNA.

FREQUENCY AND ASSOCIATED FACTORS OF DENTAL CARRIES AMONG TYPE II DIABETIC AND NONDIABETIC ADULTS OF PESHAWAR.

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Peshawar Dental College

INTRODUCTION:

Diabetes is an endocrine disorder causing high blood glucose levels. Poor metabolic control can reduce salivary flow, promoting acid-producing bacteria and plaque buildup.

OBJECTIVE(S):

1. To assess and compare the oral hygiene of diabetics to non-diabetic individuals
2. To assess factors that aggravate dental caries in diabetic and non-diabetic individuals

METHODOLOGY:

A cross-sectional study was conducted from July to March 2025 on 350 adults aged 31–40 in Peshawar, including both diabetic and non-diabetic patients visiting PDC, KCD, SBDC, RCD, and dental clinics. Data was collected through interviewer-administered questionnaires and oral examinations and analyzed using SPSS v26.

RESULTS:

Out of 350 participants, 39.7% were diabetic, and 60.3% were non-diabetic. Poor oral hygiene was common (52.3%). Brushing habits were irregular in 39.4%, with only 24.3% brushing twice daily. Most participants (79.7%) used fluoridated toothpaste. Xerostomia affected both groups, with a higher prevalence among non-diabetics (58.6%). Awareness of oral hygiene was low (45.4%). Dental decay was widespread, with 56.6% having more than two decayed teeth. Significant associations were found between diabetes and tooth decay ($p = 0.002$), dry mouth ($p = 0.001$), and irregular brushing habits ($p = 0.03$).

CONCLUSION:

The study found diabetes to be a key risk factor for dental caries. It also revealed poor oral hygiene and low awareness, emphasizing the need for improved oral health education.

KEYWORDS:

Oral Hygiene, Xerostomia, Dental Carries

ASSOCIATION BETWEEN SOCIAL MEDIA ADDICTION AND AGGRESSION AND SELF-CENTEREDNESS AMONG CHILDREN IN PESHAWAR

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Supervisor: Dr. Hafsa Habib

Peshawar Medical College and Peshawar Dental College

INTRODUCTION:

Social media has become an integral part of children's lives in the digital age, raising significant concerns about its psychological and behavioral impact.

OBJECTIVE(S):

1. To examine the association between social media addiction and two specific behavioral outcomes—aggression and self-centeredness—among school children in Peshawar.

METHODOLOGY:

This cross-sectional mixed-methods design was conducted on children among 11 to 15 years from June 2024- March 2025. The study utilizes validated tools including the Social Media Addiction Scale (SMAS), the Buss-Perry Aggression Questionnaire (BPAQ), and the Narcissistic Personality Inventory for Children (NPIC). A sample of 370 children is selected using purposive random sampling from both public and private schools. Quantitative data are analyzed using SPSS, applying Pearson correlation, chi-square tests, and regression analysis.

RESULTS:

The results show a significant positive correlation between social media addiction and both aggression ($r = 0.46$, $p < 0.01$) and self-centeredness ($r = 0.41$, $p < 0.01$). Children aged 11 to 14 showed a high level of aggression as compared to children aged 14 to 15. The aggression level was 71 %, the level of SMAS was 80 % and the Narcissistic personality traits were high among children with 74% Social Media Addiction.

CONCLUSION:

The frequency of Social media addiction and aggression levels is quite high among school children in Peshawar. These findings highlight the behavioral risks associated with excessive social media use in children and emphasize the need for parental, educational, and policy-level interventions.

KEYWORDS:

Social Media Addiction, Aggression, Self-Centeredness, Children, Behavioral Psychology, Narcissism, Digital Media, Mental Health

DEPARTMENT OF UNDERGRADUATE MEDICAL RESEARCH



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