
TABLE OF SPECIFICATION

S.NO	CONTENT	PAGE NO.
1	Message From Patron In Chief	02
2	Message from Patron	03
3	Message from Chairperson	04
4	Postgraduates Oral Presentations Abstracts	05
5	Undergraduates Oral Presentations Abstracts	25
6	Postgraduates Poster Abstracts	58
7	Undergraduates Poster Abstracts	69
8	Conference organizing committee	96

MESSAGE FROM PATRON IN CHIEF

**Air Marshal
Abdul Moeed Khan, HI(M)Retd.
Vice Chancellor
Air University, Islamabad.**



It is a profound pleasure, for me, to welcome you warmly to the International Research Conference 2025 at Fazaia Medical College, Air University.

The theme, "**Transforming Health Care through Innovation and Integration**," captures the commitment to intellectual growth and global engagement. Education is a journey of discovery and in today's medical landscape, the pursuit of knowledge must be relentless and innovative. We stand at a pivotal moment where AI, biomedical innovation, and integrated care models are reshaping healthcare. This conference is a call to action: a challenge to question the status quo, collaborate across borders, and solve real-world problems. The true impact of our work lies not just in publications, but in saving lives and improving community well-being.

We are privileged to be guided by exceptional leadership and an outstanding organizing team. The presence of International and National Keynote speakers from diverse disciplines will ensure the sight of world class research in the domain of clinical, Public Health, basic sciences, dental, Nursing Artificial Intelligence and biotechnology

Let this conference be a catalyst—not just for academic discussion, but for transformational action. Let it inspire us to reimagine what is possible, to bridge the gap between research and implementation, and to forge a future where healthcare is smarter, more equitable, and deeply humane.

To all our delegates: I encourage them to engage deeply, think critically, and connect meaningfully. May this conference spark new collaborations, ignite lifelong passions, and contribute to a healthier, more innovative world.

Your voice has the power to shape policy and inspire the future.

Welcome, and may this conference ignite lifelong passions

MESSAGE FROM PATRON

**Maj. Gen.
Muhammad Tahir Khadim Hi (M) Retd.
Dean Faculty of Health Sciences Air University
Principal Fazaia Medical College**



It is a great pleasure to welcome you to the International Research Conference 2025, proudly hosted by Fazaia Medical College – Air University

Our theme, “**Transforming Health Care through Innovation and Integration,**” directly addresses the global imperative to merge technological advancements with evidence-based medical practice. We are honored to have esteemed National and International speakers joining us. Their insights will be crucial in enriching the academic knowledge and nurturing the critical thinking of our students, faculty, and researchers.

Research, particularly is the cornerstone of societal progress. We must cultivate a strong research-oriented mindset in our students from the undergraduate level to enhance career prospects by fostering scientific communication, improving career stability, and increasing the likelihood of becoming a research-active physician who provides better patient care.

This conference is designed as a comprehensive platform for dialogue and discovery, featuring forums for undergraduates and postgraduates, various presentation sessions, and keynotes on current and future trends. In the rapidly evolving landscape of medicine, continuous learning and research engagement are essential for anticipating challenges and implementing effective solutions.

I extend my heartfelt wishes that this conference inspires and challenges you for contributing meaningfully to your growth as future leaders in medicine.

Best Wishes

MESSAGE FROM CHAIRPERSON

Prof. Dr. Rukhsana Khan
HOD Community Medicine,
Fazaia Medical College
Air University, Islamabad



It is with great pleasure and a deep sense of pride that I welcome you all to the International Research Conference 2025, organized by Fazaia Medical College – Air University. As Chairperson of the conference and Head of the Department of Community Medicine, I am honored to organize a multidisciplinary research conference which aims to foster the next generation of community-oriented healthcare professionals. We are committed to building a culture of innovation, believing that critical thinking and research engagement must begin at the undergraduate level to prepare future leaders in medicine.

This year's conference, themed "Transforming Health Care through Innovation and Integration" is a natural progression of our efforts. It provides a vibrant platform for students, faculty, researchers, and professionals to present their work, engage in meaningful discussion and to build collaborations that extend well beyond institutional walls.

We are proud to offer a dynamic program featuring:

- Insightful sessions led by internationally recognized keynote speakers
- Research forums for undergraduates and postgraduates
- Oral and poster presentations
- Pre-conference workshops

Participants have found several sub-themes to choose from, catering to diverse academic interests. All accepted abstracts have been published in the official conference abstract book, which will also be made available online through our website.

We are honored to welcome distinguished faculty, guests, and institutions from across Pakistan and Internationally. Their presence and participation enrich the academic value of this conference and reflect the collective commitment to advancing medical knowledge and evidence-based practice.

More than just an event, this conference is a celebration of curiosity, collaboration, and the relentless pursuit of better health outcomes. I am especially encouraged to see the active involvement of our students, whose enthusiasm and passion for research continue to inspire us all.

I hope that this experience serves as a powerful event for future innovations in healthcare.

**POSTGRADUATE
ORAL PRESENTATION
ABSTRACTS**

Mechanisms of Polystyrene Microplastics-Induced Reproductive Damage in Male Mice via Ferroptosis

Name of Author: Qi Yan

Affiliation: School of Public Health, Xinjiang Medical University

ABSTRACT

Introduction Polystyrene (PS), a polymer synthesized through free radical polymerization of styrene, is widely used in food packaging, insulation, and construction materials. Environmental weathering causes PS to degrade into microplastics (MPs), which are of growing concern due to their ecological and health risks. Reproductive toxicity has been identified as one of the significant health hazards associated with microplastic exposure. This study investigates the mechanism by which PS-MPs induce reproductive damage in male mice, with a focus on ferroptosis, an iron-dependent cell death pathway.

Methodology Thirty 5-week-old male specific pathogen-free (SPF) BALB/c mice were randomly divided into five groups and administered PS-MPs via oral gavage daily for 35 days. Reproductive health was assessed by monitoring body weight, organ coefficients, sperm quality, sex hormone levels, testicular histopathology, and oxidative stress biomarkers (iron content, malondialdehyde [MDA], glutathione [GSH], and superoxide dismutase [SOD]). Western blot and immunohistochemistry were used to evaluate the expression of ferroptosis-related proteins (GPX4, SLC7A11, ALOX15, p53, SAT1, LPCAT3).

Results Material analysis confirmed that PS-MPs used were of uniform particle size and spherical morphology. PS-MP exposure caused a dose-dependent reduction in sperm quality ($P < 0.05$). Histopathological findings included disordered seminiferous epithelium, loose spermatogenic cell arrangement, tubular vacuolization, and azoospermia at higher doses. Hormonal assays revealed decreased testosterone, follicle-stimulating hormone (FSH), and luteinizing hormone (LH) levels ($P < 0.05$). Oxidative stress markers showed increased MDA and decreased GSH and SOD levels in testicular tissue. Western blot demonstrated downregulation of GPX4 and SLC7A11 and upregulation of ALOX15, ACSL4, SAT1, LPCAT3, and p53 ($P < 0.05$). These results indicate activation of the p53-SAT1-SLC7A11-ALOX15 signaling pathway in PS-MP-induced reproductive toxicity.

Conclusion Polystyrene microplastic exposure induces significant reproductive toxicity in male mice through ferroptosis. The p53-SAT1-SLC7A11-ALOX15 signaling axis plays a central role in mediating testicular injury. These findings highlight the potential reproductive risks of microplastic exposure and emphasize the need for further mechanistic studies to develop preventive strategies.

Keywords Microplastics, Polystyrene, Reproductive toxicity, Ferroptosis, Oxidative stress, Male fertility

Management of Traumatic Brain Injury: A Two-Year Institutional Experience

Name of Authors: Muhammad Usman, Taimoor Ali, Abdul Wassay, Umer Farooq Khawaja
Affiliation: Department of Neurosurgery, PAF Hospital, Fazaia Medical College, Islamabad - Pakistan

ABSTRACT

Objective To study the different aspects and management of traumatic brain injury (TBI) patients in a tertiary care hospital.

Methodology This descriptive cross-sectional study was conducted in department of Neurosurgery, PAF Hospital, Fazaia Medical College, Islamabad from September 2022 to August 2024. Patients of all ages with either sex were included in this study, while those patients of TBI having associated co-morbid conditions were excluded. All the data was collected by using a Performa. Data was analyzed by descriptive statistics using SPSS software.

Results Out of total 216 patients, 114 (52.7%) sustained TBI due to Road traffic accident. Male were 160 (74.04%) and female were 56 (25.92%). Most of the patients, 149 (68.98.2%) were in the first 4 decades of their life. Majority of the patients (71.75%) were treated conservatively, while 61 patients (28.25%) required surgical intervention and were treated accordingly. Regarding type of TBI about 79.62% of the patients sustained mild to moderate TBI. Major radiological findings were brain contusions, extradural hematoma, and brain edema. At the time of discharge almost 76% of the patients were having good recovery on Glasgow Outcome Scale (GOS). There was 4.16% mortality in this study.

Conclusion The major cause of TBI is road traffic accident with male and adult patients mainly affected. Most of the patients needed conservative treatment. Mild to moderate head injury is common. The proper and timely management of TBI resulted in good GOS.

Key Words Traumatic Brain Injury, Extradural Hematoma, Road Traffic Accident, Glasgow Outcome Scale.

Trends and Mortality Patterns of Chronic Ischemic Heart Disease and Type 2 Diabetes Mellitus in the United States from 1999-2023: An Analysis Using CDC WONDER Database

Name of Author: Hafiz Muhammad Kamran Ahmad
Affiliation: Wah Medical College

ABSTRACT

Introduction Chronic ischemic heart diseases (CIHD) and type 2 diabetes mellitus (T2DM) are among leading causes of mortality in the United States (US).^[1]

Objectives The aim of this retrospective study focuses on analysing temporal trends of mortality due to CIHD in older adults with T2DM in the US from 1999-2023.

Methodology We extracted mortality trends due to CIHD in T2DM adults from the CDC Wonder database as age adjusted mortality rates (AAMR) per 100,000 population from 1999-2023. Joinpoint Regression program was used to calculate Annual Percent Change (APC) and Average Annual Percent Change (AAPC).

Results A total of 573347 death occurred due to CIHD in T2DM adults from 1999-2023 with an AAPC 2.23 (95% CI: 1.85,2.69). The overall AAMR increased from 38.8 (95% CI: 38.1,39.4) in 1999 to 50.1 (95% CI: 49.4, 50.8) in 2005 followed by a decline to 44.5 (95% CI: 43.9,45.2) in 2014. This was followed by a rise in AAMR to 56.1 (95% CI: 55.5,56.8) in 2018 followed by significant increase to 76.5 (95% CI: 55.5,56.8) in 2021 and then a decline to 68.3 (95% CI: 67.6,69.0) observed in 2023. Among genders, higher mortality was observed males (72.7; 95% CI: 71.4,73.9). Across race/ethnicity, the American Alaskan (81.7; 95% CI: 69.0,94.9) people had the highest mortality rate. According to urban-rural classification, the people living in rural metropolitan areas (63.2; 95% CI: 61.4,65.0) were affected more. Among regional differences, the population residing in Midwest (63.1; 95% CI: 61.5,64.7) of US had highest mortality with most deaths occurred in medical facilities (36.14%).

Conclusion American Alaskan males living in rural metropolitan areas of Midwest region were affected the most due to chronic ischemic heart diseases and type 2 diabetes mellitus. Further research is needed to understand the root cause of these disparities to minimize the loss of healthcare resources.

Keywords Chronic Ischemic Heart Disease, Type 2 Diabetes Mellitus, Age Adjusted Mortality Trends, Mortality, Temporal Trends, CDC Wonder.

Effect of College-Based Educational Intervention on Awareness of Hepatitis B and C among Higher Secondary Students in Southern Punjab, Pakistan

Name of Author: Saima Ashiq
Affiliation: College of Nursing NUMS

ABSTRACT

Introduction Hepatitis B (HBV) and Hepatitis C (HCV) are major causes of chronic liver disease, with Pakistan reporting nearly 15 million cases ⁽¹⁾. Limited awareness and unsafe practices contribute to high prevalence, particularly in rural areas ⁽²⁾

Objective This study aimed to assess the effect of a college-based educational intervention on students' awareness in Southern Punjab

Methodology: A quasi-experimental single group pretest-posttest study was conducted with 162 students from two government colleges in Lodhran. A validated 26-item questionnaire, adapted from Otchere et al. (2022), assessed knowledge, attitudes, and practices (KAP) ⁽³⁾. Descriptive statistics and paired-sample t-tests were applied to compare pre- and post-intervention scores.

Results Among 162 students, most were aged 17-18, with more girls (58.9%) and pre-medical enrollment (72.4%). Parental education and family income were generally low, and only 11% reported a history of hepatitis. Baseline awareness was poor; just 32.5% had heard of Hepatitis B or C, and misconceptions such as transmission by handshakes (57.7%) were common. Post-intervention, awareness rose to 95.1%, with sharp gains in knowledge of transmission (blood transfusion 95.1%, syringes 96.3%) and vaccination (92.6%). Attitudes improved, with stigma reduced (isolation support 44.2% to 14.7%) and acceptance of contact >87%. Preventive practices also increased, and mean KAP scores improved significantly ($p < 0.000$).

Conclusion & Recommendations The intervention significantly enhanced KAP regarding HBV and HCV. Expansion of school- and college-based programs coupled with vaccination and screening, is recommended to reduce Pakistan's hepatitis burden.

Keywords Hepatitis B, Hepatitis C, Health Education, Students, Pakistan.

Analysis of Iodine Concentration in Drinking Water and Its Accumulation in the Serum of the Local Population of Wah Cantt

Name of Authors: Shahroom, Tooba Yasir
Affiliation: Wah Medical College

ABSTRACT

Introduction Iodine is an essential micronutrient that plays a vital role in thyroid hormone synthesis and metabolic regulation. Both iodine deficiency and excess can cause thyroid-related disorders, including hypothyroidism and hyperthyroidism. Evaluating iodine levels in community water sources and their relationship with human iodine status is crucial for public health.

Objective To investigate the concentration of iodine in drinking water sources of Wah Cantt and assess its accumulation in the serum of the local population, with emphasis on thyroid function outcomes

Methodology Water samples were collected from municipal supplies, hand pumps, and groundwater sources in Wah Cantt. Iodine concentrations were determined using spectrophotometric techniques. Serum samples from residents were analyzed for iodine levels and thyroid function tests, including triiodothyronine (T3), thyroxine (T4), and thyroid-stimulating hormone (TSH). Data were assessed to explore associations between water iodine content and serum thyroid markers.

Results Iodine concentrations varied considerably across different water sources, with some exceeding recommended thresholds and others falling below optimal levels. Serum iodine analysis demonstrated a significant correlation with water iodine levels. Elevated T3 values were observed compared to normal ranges, while T4 and TSH largely remained within normal limits. Gender-based differences were noted, with greater deviations in T4 and TSH among females than males.

Conclusion Iodine concentrations in drinking water directly influenced individual iodine status and thyroid function, with women showing higher vulnerability to imbalance. Continuous monitoring of community water supplies and targeted public health interventions are necessary to maintain optimal iodine intake and reduce the risk of iodine-related disorders.

Keywords Iodine, Drinking water, Thyroid function, T3, T4, TSH, Wah Cantt, Public health.

Enhanced polycystic ovary syndrome screening, incorporating population and symptoms specific scales into a validated questionnaire and assessment of syndromes associated factors and an analytical cross-sectional study

Name of Authors: Dr. Shireen Haider & DR. M. Ibrahim Khan

Affiliation: Fazaia medical college Islamabad

ABSTRACT

Introduction Polycystic Ovary Syndrome (PCOS) is a common endocrine disorder affecting females, characterized by hyperandrogenism and a broad spectrum of clinical manifestations, including menstrual irregularities, acne, hirsutism, obesity, metabolic syndrome, and an increased risk of endometrial carcinoma ⁽¹⁾

Objective This cross-sectional study aimed to screen female high school students in Islamabad for PCOS and explore relevant epidemiological associations

Methodology This study employed a simple random sampling method with a self-developed questionnaire at a high school in Islamabad, Pakistan. Screening criteria for PCOS were adapted from a previously validated tool ⁽²⁾. Hirsutism was assessed using the Modified Ferriman-Gallwey (m FG) scale ⁽³⁾, with a population-specific cut-off score determined through receiver operating characteristic (ROC) curve analysis. The study was conducted over a six-month period, from April to September 2024.

Results Of the 147 participants, eight (5.44%) screened positive for PCOS, while eight individuals with a prior PCOS diagnosis were excluded from the screening. Including these cases, the population proportion of PCOS in the sample was 10.3%. Significant associations in the positively screened group included irregular menstrual cycles, oligomenorrhea/amenorrhea, midline hirsutism, higher BMI, thinning scalp hair, jawline acne, and lower fruit intake compared to the control group. These associations are consistent with known clinical features of PCOS.

Conclusion & Recommendations Given the high prevalence and serious health impacts of PCOS, the adoption of an efficient and practical screening tool is vital. Our modified tool provides a valuable method for early PCOS detection, particularly in resource-limited settings like South Asia. By prioritizing costly diagnostic tests for positive cases, it helps avoid unnecessary expenditures for those not affected. The proposed mFG scale cut-off also serves as a valuable benchmark for future research on hirsutism in the Pakistani population.

Keywords Acne, Hirsutism, Amenorrhea.

Evaluation of Cognitive Deficits Associated with Bisphenol – A induced Anxiety Linked Behavior in Rat Offspring

Name of Authors : Samreen Memon¹ ; Syna Pervaiz Singha² *; Fouzia Memon³ Umbreen Bano⁴, Amir Derick Isaac⁵ and Fatima Siddiqui

Affiliation: Isra University Hyderabad

ABSTRACT

Introduction Endocrine disruption is a hallmark of many diseases that causes both cognitive and neurodevelopmental impairments. Bisphenol A (BPA), a ubiquitous environmental endocrine disrupter, has been comprehensively evaluated for producing developmental toxicity in rodents.

Objective This study was conducted to explore the possible association of cognitive deficits in anxiety-linked behavior in rat offspring due to pre and postnatal BPA exposure.

Methodology BPA (5mg/kg) was administered intraperitoneally throughout pregnancy and lactation till 3 PND to Wistar albino dams. On 28 PND, pups were assessed for anxiety-linked behavior using Marble burying test. Blood samples were collected for serum Gamma aminobutyric acid levels and pups were sacrificed. Right frontal cortices were removed and processed for immunohistochemical analysis for glial fibrillar acidic protein + astrocytes.

Results Both pre and postnatal BPA exposure led to anxiety-linked behavior in Wistar rat offspring. This exposure also decreased serum GABA levels. Immunohistochemical analysis showcased a reduction in the number and dendritic spines of Astrocytes. Marble burying test showcased a behavior suggestive of anxiety and cognition decline.

Conclusion BPA exposure in critical neurodevelopmental periods leads to anxiety-linked behavior associated with disturbances in GABA signaling and Astrocytic dysmorphia.

Keywords Astrocytes, Bisphenol A, GABA, rat offspring.

Exploring Cardiovascular Outcomes of SGLT-2 Inhibitors in Hypertensive Patients with or Without Diabetes

Name Of Authors: Dr. Tayyab, Maheen
Affiliation: UST school of health sciences, NUST

ABSTRACT

Introduction Cardiovascular disease remains the leading cause of morbidity and mortality in hypertensive patients, particularly those with coexisting type 2 diabetes mellitus. Sodium-glucose cotransporter-2 (SGLT-2) inhibitors have shown promising cardioprotective effects, but data in hypertensive populations with and without diabetes remain limited.

Objective This study aimed to evaluate the cardiovascular outcomes associated with SGLT-2 inhibitor use in hypertensive patients with or without type 2 diabetes.

Methodology A prospective observational study was conducted at a tertiary care hospital in Lahore from January 2024 to June 2025. A total of 180 hypertensive patients (90 with type 2 diabetes and 90 without) receiving SGLT-2 inhibitors were enrolled using consecutive sampling. Baseline and follow-up data were collected on blood pressure, left ventricular ejection fraction (LVEF), NT-pro BNP levels, and incidence of major adverse cardiovascular events (MACE), including heart failure hospitalization, myocardial infarction, and cardiovascular death, over a 12-month period.

Result The use of SGLT-2 inhibitors led to significant reductions in systolic and diastolic blood pressure ($p < 0.01$) and improvements in LVEF ($p < 0.05$) in both diabetic and non-diabetic groups. MACE incidence was lower in both cohorts, with a greater reduction observed in patients with diabetes (18% vs. 11%). No significant difference in adverse effects was noted between groups.

Conclusion SGLT-2 inhibitors demonstrated beneficial cardiovascular outcomes in hypertensive patients irrespective of diabetic status, supporting their use as a valuable adjunct in hypertension management. Further multicenter studies are recommended to validate these findings.

Keywords Cardiovascular outcomes, Diabetes mellitus, Hypertension, SGLT-2 inhibitors, Tertiary care.

Comparing AI-generated Rhinoplasty Predictions with Actual Surgical Outcomes: A Case Series

Name of Author: Khadija Laghari
Affiliation: Fazaia Medical College Islamabad

ABSTRACT

Introduction Artificial Intelligence (AI) has rapidly dominated modern life, from conversational platforms like Chat GPT to beauty filters that instantly alter facial aesthetics. The popularity of AI-generated beauty filters has increased the demand for cosmetic procedures, particularly among teenagers and young adults. Rhinoplasty is the third most common cosmetic surgery in the USA and is gaining popularity in Pakistan.

Objective This case series explored whether AI-generated pre-operative rhinoplasty predictions can guide surgical planning, improve patient-doctor communication, and predict surgical outcome.

Methodology Four patients who underwent cosmetic rhinoplasty at PAF Hospital Islamabad were included. Standardized pre-operative facial photographs in established angles (front-view, side-view, worm-eye view, bird's-eye view) were uploaded into AI-based mobile applications. The nose shape was modified according to the patient's demands and the predicted outcomes were used to guide discussions and manage expectations of patients. Post-rhinoplasty photographs were taken from the same angles and compared with AI-generated predictions.

Results **Case 1:** A 31-year-old female with dorsal hump, bulbous, deviated, and droopy tip, and off-centered nose. AI predicted a straight dorsum and elevated tip. Surgical outcome was similar though tip refinement was less exaggerated.

Case 2: A 29-year-old male with post-traumatic left sided deviated nose. AI predicted a centered, narrow but pinched bridge. Surgical outcome after improving both function and aesthetics, differed from AI's narrow and pinched projection.

Case 3: An 18-year-old male, markedly crooked and disproportionate bridge with a droopy tip. AI showed a straighter, narrower contour. Post-operative outcome achieved a natural correction with straightened bridge and tip elevation, closely resembling AI.

Case 4: A 17-year-old female with dorsal hump and droopy tip. AI predicted hump removal and a pointy, elevated tip. Post operative results matched the AI prediction in hump removal but differed in the look of the tip which was more naturally rounded.

Conclusion The AI-generated rhinoplasty predictions are a valuable tool to help in patient counseling, expectation management, and preoperative planning. However, they cannot yet account for the 3D anatomy of the nose and functional concerns of patients. At present, AI should be considered a guiding tool rather than a definitive predictor of surgical outcomes.

Keywords Rhinoplasty, Artificial intelligence, AI generated.

Comparing AI-generated Rhinoplasty Predictions with Actual Surgical Outcomes: A Case Series

Name of Author: Khadija Laghari
Affiliation: Fazaia Medical College Islamabad

ABSTRACT

Introduction Artificial Intelligence (AI) has rapidly dominated modern life, from conversational platforms like Chat GPT to beauty filters that instantly alter facial aesthetics. The popularity of AI-generated beauty filters has increased the demand for cosmetic procedures, particularly among teenagers and young adults. Rhinoplasty is the third most common cosmetic surgery in the USA and is gaining popularity in Pakistan.

Objective This case series explored whether AI-generated pre-operative rhinoplasty predictions can guide surgical planning, improve patient-doctor communication, and predict surgical outcome.

Methodology Four patients who underwent cosmetic rhinoplasty at PAF Hospital Islamabad were included. Standardized pre-operative facial photographs in established angles (front-view, side-view, worm-eye view, bird's-eye view) were uploaded into AI-based mobile applications. The nose shape was modified according to the patient's demands and the predicted outcomes were used to guide discussions and manage expectations of patients. Post-rhinoplasty photographs were taken from the same angles and compared with AI-generated predictions.

Results *Case 1:* A 31-year-old female with dorsal hump, bulbous, deviated, and droopy tip, and off-centered nose. AI predicted a straight dorsum and elevated tip. Surgical outcome was similar though tip refinement was less exaggerated.
Case 2: A 29-year-old male with post-traumatic left sided deviated nose. AI predicted a centered, narrow but pinched bridge. Surgical outcome after improving both function and aesthetics, differed from AI's narrow and pinched projection.
Case 3: An 18-year-old male, markedly crooked and disproportionate bridge with a droopy tip. AI showed a straighter, narrower contour. Post-operative outcome achieved a natural correction with straightened bridge and tip elevation, closely resembling AI.
Case 4: A 17-year-old female with dorsal hump and droopy tip. AI predicted hump removal and a pointy, elevated tip. Post operative results matched the AI prediction in hump removal but differed in the look of the tip which was more naturally rounded.

Conclusion The AI-generated rhinoplasty predictions are a valuable tool to help in patient counseling, expectation management, and preoperative planning. However, they cannot yet account for the 3D anatomy of the nose and functional concerns of patients. At present, AI should be considered a guiding tool rather than a definitive predictor of surgical outcomes.

Keywords Rhinoplasty, Artificial intelligence, AI generated.

Trauma-Informed Nursing for Transgender Survivors of Violence: A Mixed-Methods Study in Hyderabad, Pakistan

Name Of Author: Sonia Imdad
Affiliation: Aga Khan University Karachi

ABSTRACT

Introduction Transgender individuals in Pakistan face disproportionately high rates of gender-based violence and often experience discrimination when accessing healthcare. Nurses, who are frequently the first point of contact, are rarely trained in trauma-informed or gender-sensitive care, creating barriers to recovery and trust. Despite the 2012 legal recognition of transgender persons as the 'third gender,' healthcare systems remain poorly equipped to respond to their needs.

Objectives This study aims to assess nurses' knowledge, confidence, and preparedness to provide trauma-informed care to transgender survivors of gender-based violence and explore the lived experiences of transgender survivors in hospital settings.

Methodology A convergent mixed-methods design will be used. Quantitative data will be collected from registered nurses at LUMHS Hospital, Hyderabad, through an adapted Trauma-Informed Care Provider Survey. Qualitative data will be obtained from 12-15 transgender survivors through semi-structured interviews using snowball sampling. The analysis will include descriptive and inferential statistics (SPSS) for nurses' responses, and thematic analysis for survivor narratives.

Results Findings will highlight gaps in nursing education, practice, and institutional support for trauma-informed, gender-sensitive care. The study will also provide insight into survivors' perspectives, guiding evidence-based recommendations for improving nursing curricula and practice in Pakistan.

Conclusion By integrating Jean Watson's Theory of Human Caring and Patricia Benner's Novice to Expert Theory, this research seeks to inform trauma-informed nursing models that strengthen equitable and compassionate care for transgender survivors of violence.

Keywords Trauma-informed care, transgender health, nursing education, gender-based violence, Pakistan

Filling The Void: Peer Assisted Learning's Effects & Acceptability In Basic Medical Subjects Using Randomized Control Study In Islamabad

Name of authors: Dr Arshia Bilal, Dr Iffat Noreen, Dr Asifa Afzal, Dr Bushra Anwar, Dr Ayesha Tayyab
Affiliation: Fazaia Medical College

ABSTRACT

Objectives

To assess the effectiveness and acceptability of Peer Assisted Learning in Basic science subjects by undergraduate medical students studying through an Integrated curriculum at Fazaia Medical College Islamabad Pakistan.

Methodology

This randomized control study was conducted at Fazaia medical college, Air University Islamabad from January 2023 to August 2023. Students of 2nd year MBBS were recruited using stratified sampling technique. One third of the study participants were included in the intervention group whereas the remaining two third In the control group. Total five groups were formulated, with four tutees led by one Tutor in each group. Informed consent was taken from all study participants. For five weeks, a two hours weekly session was carried out as part of the intervention by the tutors in GIT & Nutrition module. The post module exam scores of the two groups were compared to assess the effectiveness of peer assisted learning. Post intervention feedback questionnaire was distributed to study group to assess its acceptability in Basic sciences. Data was analysed using SPSS version 23.0.

Results

Mean age of study participants was 20 ± 1 years with mostly (70%) females. Mean score in GIT& Nutrition module of interventional group was higher (58.9 ± 25.4) Than controls (45.6 ± 29.9) but the result was insignificant ($p\text{-value} = 0.14$) statistically. Feedback indicated that more than two third of the participants recognized it as effective and easy learning strategy. Acceptability of peer assisted learning by Students was significant ($p < 0.001$).

Conclusions

Peer assisted learning found to be an effective learning strategy by majority of the students despite showing no significant improvement in score of 2 Interventional group. For better outcome of peer assisted learning, it should be Incorporated in academic schedule with full administrative support.

Key Words: Peer groups, adult learning, academic performance, active learning, curriculum.

Prevalence of Color Vision Deficiency Among School-Going Children Aged 7-12 Years in Rawalpindi/ Islamabad

Name of Authors: Saleha Jadoon, Moiza Shahzad.
Affiliation: Watim medical & Dental college

ABSTRACT

Introduction Color Vision Deficiency (CVD), commonly referred to as color blindness, is a visual impairment characterized by the inability to perceive colors accurately. This condition, often congenital and linked to X-chromosome inheritance, affects more males compared to females ^[1]. Studies estimate that approximately 8% of males and 0.5% of females are affected due to the genetic basis of the condition ^[2]. CVD can significantly impact academic performance and career choices; early detection of CVD is crucial for tailoring educational support and career counseling for affected individuals.

Objective This cross-sectional study aims to evaluate the prevalence of CVD among school-going children aged 7-12 years in Rawalpindi/ Islamabad. By identifying demographic trends and associated factors, the research seeks to inform policy recommendations for routine vision screening programs in schools.

Methodology Cross sectional study was conducted on school going children in Islamabad/Rawalpindi aged 7-12 years for 6 months. Sample size of 149 was calculated using Open Epi calculator with 95% confidence interval, 5% margin of error and an anticipated frequency of 10.8% ^[2]. Data was collected through a structured questionnaire assessing demographics and awareness and Ishihara's PIPs (pseudo isochromatic plates).

Results A total of 149 children were screened for CVD out of which 79 were males (53%) and 70 were females (47%) with most of them aged 12 years (24%). 140 (93.95) children were reported to have no color vision deficiency whereas 9 (6.04%) children had color vision deficiency. Out of these 9 children 4 (44.4%) were reported as color blind while 5(55.6%) had red-green color deficiency.

Conclusion This study highlights the presence of color vision deficiency among school-going children in Rawalpindi/Islamabad, with males more frequently affected. Although the prevalence was relatively low, CVD can impact learning and limit future career options. Early detection through routine school-based screening is therefore essential to provide timely support and guidance, helping affected children adapt both academically and professionally.

Keywords Color vision, Ishihara

Development and Validation of a Low-Cost Portable Electrocardiography Device

Name of Authors: Muhammad Omar Cheema, Zia Mohiuddin Bilal Siddique Anum Rashid
Affiliation: Dept. of Biomedical Engineering Air University Islamabad, Pakistan

ABSTRACT

Introduction Cardiovascular diseases are the leading cause of mortality worldwide, accounting for nearly 18 million deaths annually. Early diagnosis and continuous monitoring of cardiac electrical activity are essential for timely intervention. However, conventional electrocardiogram (ECG) systems are often expensive and inaccessible in low-resource settings. This study aimed to design and validate a low-cost, portable ECG device for reliable cardiac signal acquisition.

Methodology A custom analog filtration and amplification circuit was developed to enhance signal quality and minimize noise. The device was validated against an industry-standard ECG system using quantitative (correlation, SNR, PSNR) and qualitative waveform analyses. Data acquisition performance was tested under varied conditions to assess robustness and reliability.

Results The developed ECG system demonstrated 97-99% correlation with reference signals. High SNR and PSNR values confirmed strong noise suppression and waveform fidelity. Morphological comparisons of acquired signals revealed consistency with clinical standards, ensuring accurate detection of characteristic P-QRS-T waveforms.

Conclusion The proposed ECG device provides a cost-efficient and portable solution for reliable cardiac monitoring. Its validated accuracy highlights its potential as an accessible diagnostic tool, particularly for resource-limited healthcare environments.

Keywords Electrocardiography, Cardiac monitoring, Low-cost medical devices

A Cross-Sectional Study for the Spectrum of Clinical Diagnosis in Patients Presenting With Macrocytosis

Name of Authors: Syeda Samia Shafaat, Fuaad Ahmad Siddiqi, Laila Yaseen, Kanaz Ahmad Siddiqi, Nidda Yaseen
Affiliation: Hematology, Armed Forces Institute of Pathology, Rawalpindi, PAK Medicine, Combined Military Hospital, Rawalpindi, PAK Obstetrics and Gynecology, Combined Military Hospital, Rawalpindi, PAK

ABSTRACT

Introduction This was a cross-sectional study that took place at the Department of Medicine in Combined Military Hospital, Rawalpindi, Pakistan, from January to June 2023.

Objective The objectives of this study were to determine the frequency of the clinical spectrum of diseases in patients with macrocytosis and to summarize the diagnostic evaluation of patients found to have macrocytosis on laboratory testing.

Methodology One hundred and five patients with macrocytosis with mean corpuscular volume (MCV) values > 100 fL (80 to 100 f) were inducted as per inclusion and exclusion criteria. Informed consent was obtained from all patients. Complete blood counts (CBC), peripheral blood film, serum vitamin B12 levels, serum folate levels, renal function tests (RFTs), liver function tests (LFTs), and thyroid function tests (TFTs) were performed during the assessment.

Results The commonest cause of macrocytosis was vitamin B12 deficiency followed by folate deficiency, combined vitamin B12 and folate deficiency, and other causes were also found in a few cases.

Conclusion Serum vitamin B12 and folate deficiency are the most common preventable causes of macrocytosis.

Keywords: folate deficiency, serum vitamin b12, non-megaloblastic, megaloblastic anemia, macrocytosis.

A Resilience-focused Education Inquiry among Undergraduate Nursing Students: An Exploratory Descriptive Qualitative Study

Name Of Author: Hira Ejaz
Affiliation: Islamabad nursing college

ABSTRACT

Introduction Nursing students experience significant academic and psychosocial struggles during the undergraduate program and remain at risk of stress, anxiety, and depression. In this situation, a lack of appropriate coping skills and resilience to withstand these challenges influences their academic success and well-being, which ultimately compromises their professional readiness as graduate nurses. The challenging nature of nursing education necessitates resilience building among undergraduate nursing students to help them overcome adversities, achieve desired educational outcomes, and improve their overall well-being. Therefore, this study aimed to explore resilience strengthening and building among nursing students in the Bachelor of Science in Nursing (BSN) program.

Methodology An Exploratory Descriptive Qualitative Design (EDQ) was employed to collect data from first-year and second-year BSN students enrolled in a nursing college in Islamabad, Pakistan. Semi-structured face-to-face interviews were conducted with eleven students recruited through purposive sampling. All interviews were audiotaped and transcribed in English, and qualitative analysis was performed using a five-step approach recommended by Creswell and Creswell.

Results The study findings revealed five main categories, and each category consisted of sub-categories explaining the prospects of resilience strengthening and building during the forming years of undergraduate nursing education. It was elicited that BSN students experience various educational, personal, and emotional hardships and utilize coping mechanisms to achieve academic success. The study findings also unfolded students' need for learning effective coping mechanisms and developing life skills to build and strengthen resilience and improve their mental well-being.

Conclusion This study revealed the need for strengthening and building resilience among nursing students to enhance their academic success and well-being. Study findings can be conceptualized into a resilience-focused nursing education conceptual framework for undergraduate nursing students and can further serve as a guide for nurse educators to design an educational intervention to engender resilience education in the BSN program in Pakistan.

Keywords: resilience; undergraduate nursing students; nursing education, academic success, well-being.

ENSURING COMPREHENSIVE SAFETY IN LASER HAIR REMOVAL: PAKISTAN'S FIRST CLINICAL AUDIT OF HYGIENE PRACTICES, EYE PROTECTION, INFORMED CONSENT, AND POST-PROCEDURE CARE PROTOCOLS

Name of Authors: Dr Hajira Butt, Dr Muneeza Rizwan
Affiliation: Department of Dermatology PAF Hospital Islamabad, Fazaia Postgraduate Medical Institute

ABSTRACT

Objectives: To assess compliance with departmental and international laser safety protocols specifically hygiene practices, eye protection, informed consent documentation, and post-procedure care at the Department of Dermatology, PAF Hospital Islamabad.

Methodology: A prospective observational audit was conducted over two months, reviewing 40 diode laser (810 nm) hair removal procedures. Inclusion criteria were patients undergoing laser hair removal with this device during the audit period. Eight safety and quality indicators were evaluated using a custom audit form based on departmental SOPs adopted from British Medical Laser Association guidelines. Compliance for each indicator was assessed against a 100% target standard.

Results: Full compliance (100%) was achieved in six of eight criteria: treatment area cleaning, device disinfection, physician hand hygiene, patient eye protection, procedural documentation, and provision of written post procedure care instructions. Written informed consent was obtained in only 10% of cases, while physician eye protection compliance was 0%.

Conclusions: Overall adherence to hygiene and patient safety measures was excellent, reflecting strong institutional standards. However, critical deficiencies in informed consent documentation and physician eye protection pose medico-legal and occupational safety risks.

Recommendations:

Key quality improvement measures include:

1. Regular staff and physician training on documentation standards and laser safety.
2. Ensuring availability and mandatory use of physician protective eyewear.
3. Introducing simplified or digital consent documentation tools.

A re-audit is planned soon after presentation of these findings at the departmental meeting to assess the impact of the implemented interventions and ensure sustained improvement.

Keywords: Laser hair removal, clinical audit, patient safety, hygiene protocols, informed consent, eye protection.

Youth Perspective On Climate Change And Mitigating Activities

Name of Authors: Mir Adeel, Aleena Lehri

Affiliation: National University of Medical Sciences NUMS

Abstract

Introduction: Climate change is an ongoing global issue with effects increasingly evident in daily life. Despite awareness campaigns, the extent of medical student's knowledge and perspectives on climate change remains variable. As future healthcare providers, their understanding and opinions are crucial for shaping effective responses.

Objectives: To assess gaps in medical student's knowledge regarding climate change and its health impacts To evaluate youth's knowledge about climate change. To assess their perceived role in climate change mitigation

Methodology: A cross-sectional study was conducted among medical students aged 18-30 years from different medical institutes in Balochistan. A structured online questionnaire covered demographics, knowledge of climate change, and perceptions of personal and external roles in mitigation. Data was analyzed using SPSS 25, with results presented in frequencies and percentages.

Results: Out of 384 participants, 186 were female and 198 males. A total of 126 students reported being confident in their knowledge of climate change. Human activities were identified as the major cause by 171 (44.5%) respondents. Most students (319) believed lifestyle choices could help mitigate climate change, while 65 disagreed. Among the latter, 127 (33%) felt that government and institutional efforts had greater impact than individual actions.

Conclusion: Medical youth demonstrated good awareness of climate change and willingness to adopt mitigating practices. While supportive of awareness campaigns through social media, they expressed skepticism toward government initiatives and emphasized the need for stronger leadership in climate action.

Keywords: Climate change, Medical students, Knowledge gaps, Mitigation, Awareness, Health impacts, Youth perception

Comparison of body adiposity index and body mass index for assessment of body fat percentage among office workers: A validation study

Name of Author: Ramsha Habib M.Phil. Community Medicine and public health

Affiliation: Army Medical College, NUMS

ABSTRACT

Introduction Worldwide, obesity prevalence is sharply increasing, and it is currently considered the sixth most important risk factor for death. India and Pakistan are expected to have the highest rates of adult obesity by 2030. The body mass index (BMI) is the most used anthropometric test to assess obesity. However, it cannot distinguish between fat and lean body mass, its application may misclassify the weight status. Body Adiposity Index (BAI) was introduced as a surrogate measure of adiposity and can be calculated as $BAI = [Hip\ circumference\ (cm)/Height\ (m)^{1.5}] - 18$. Both indices show different predictive capacities in different populations. Many comparison studies of BMI and BAI have been conducted in Pakistan but there is paucity of data about both indices being compared to a reference standard method. Also, there is a significant shortage of data on these indices within the office worker population.

Objective To determine the diagnostic accuracy of BMI and BAI as a screening tool in assessing body fat percentage among office workers in comparison with Bioimpedance Analysis as a reference standard method.

Methodology This validation study was carried out among office workers in WAPDA center offices of three districts (Abbottabad, Haripur and Mansehra) in Hazara division of Khyber Pakhtunkhwa province. Two stage probability sampling was used to select the sample. Data were collected regarding sociodemographic, anthropometric measures, behavioral factors and body fat percentage was obtained through bioimpedance analysis (using Omron Handheld Body Fat Analyzer HBF 306 C). Physical activity and healthy eating habits were assessed using International Physical Activity questionnaire (IPAQ) scored as MET-min/week and Healthy Eating Assessment questionnaire (HEAQ) scored from 10-50 based on identification of eating patterns over the past few weeks. BMI and BAI were calculated and compared to body fat percentage derived from bioimpedance analysis (reference method). Data was analyzed using SPSS 27. Qualitative data was presented as percentage and frequencies. Quantitative data was presented as mean and standard deviation. Sensitivity, specificity, positive predictive value, and negative predictive value were derived. Receiver operator curves (ROC) were plotted and area under curves (AUC) determined to identify the discriminatory capacity of BMI and BAI for body fat percent (95% CI). Multiple regression models were used to assess the effect of different socio demographic variables and potential confounders on percent body fat. A p-value of < 0.05 was considered significant.

Results Overall BAI showed better sensitivity of 81% (95%CI =70.6% - 88.9%) than BMI. ROC analysis showed greater AUC value of 0.85 (95% CI=0.79-0.91) in males and 0.97 (95% CI=0.95-0.99) in females as compared to BMI ($p < 0.05$). Multiple linear regression showed age, weight, and hip circumference to be positively associated with body fat percent (B values being 0.19, 0.28 and 0.33 respectively) while height, gender and physical activity were negatively associated with body fat percentage (B values -0.38, -0.43 and -0.26 respectively) ($p < 0.05$).

Conclusion BAI is a better predictor of body fat as compared to BMI among office workers and can replace BMI as a screening tool to measure body fat in community settings.

Keywords: Body fat percentage, Body mass index, Body adiposity index, Bioimpedance analysis, Obesity, Office Workers

Tracheo broncho pathia Osteochondroplastica: A Rare Airway Pathology with Clinical and Radiological Correlates

Name of Author: Dr. Rida Imam
Affiliation: Shifa International Hospital

Abstract

Introduction A rare benign tracheal condition known as Tracheobronchopathia Osteochondroplastica (TPO). Initially recognized by Rokitansky in 1855, and later Wilks presented the first microscopic depiction of the illness in 1857.¹ TPO is characterized by the formation of bony and cartilaginous nodules in the trachea. Patients over the age of 50 are usually affected, and no overt sex prejudice has been identified. Its overall prevalence is estimated to be 0.1%.

Objective To report a rare case of Tracheobronchopathia Osteochondroplastica (TPO) in Pakistan and emphasize the importance of considering this condition in the differential diagnosis of persistent respiratory symptoms.

Methodology 43-year-old male, presented with complaints of cough for the last 2 months. Patient reported frequent bouts of persistent cough throughout the day. Cough was gradual in onset but had worsened since then. It was productive in nature with a moderate amount of thin whitish foul-smelling sputum, without any tinge of blood. Contrast Enhanced CT neck and chest was done which revealed increased wall thickness of trachea in its lower 2/3rds and proximal parts of bilateral main bronchi with multiple small discrete calcified endophytic nodules along the anterior wall without definitive evidence of significant luminal narrowing, confirming tracheobronchopathia osteochondroplastica. Bronchoscopy also confirmed this finding. TPO is an infrequent condition of laryngo tracheo bronchial tree. Although the exact etiology of TPO is still unknown, there have been theories linking it to silicosis, amyloidosis, inflammation, trauma, and persistent infections. There isn't any connection to systemic problems like smoking. Chronic cough, wheezing, hemoptysis and dyspnea are the main symptoms. The increased frequency of recurring respiratory infections is one of the side effects. In a retrospective evaluation by Nienhuis et al, cough (66%), hemoptysis (60%), dyspnea with exertion (53%), and wheezing (30%) were the most prevalent symptoms. Asymptomatic patients made up 13% of the patient population.

Results Reporting the second case from Pakistan, our report raises awareness about this rarely reported disease and highlights that physician must keep it in the differential diagnosis list when a patient presents with non-conclusive respiratory symptoms.

Conclusion and Recommendation In summary, the true prevalence of TPO needs to be ascertained as it was previously believed to be less common. These days, more cases are being diagnosed because bronchoscopy facilities and skilled CT scanners are more accessible. Reduced occurrences of misdiagnosed cases and better patient care can result from radiologists and pulmonologists being acquainted with this entity's imaging appearance.

Keywords: Tracheal pathology, Tracheobronchopathia Osteochondroplastica, Airway disease, Diagnostic Radiology

Enhancing Oral Hygiene in Children with Hearing Impairment: The Impact of Skit Video Interventions - A Randomized Controlled Trial

Name of Author: Dr. Maria Moin.
Affiliation: Bahria university dental college

Abstract

Introduction Due to communication obstacles, hearing-impaired children frequently struggle to comprehend and follow oral hygiene instructions.¹ Communication difficulties may create difficulties for children with hearing impairment to comprehend oral hygiene procedures, making them particularly susceptible to oral health issues.² Despite the existing literature on the effectiveness of educational Interventions to improve oral hygiene and prevent dental problems in children with hearing impairment, there is a lack of evidence to support which method is more effective.

Objective The present study aims to compare the effectiveness of 3 educational interventions: skit video, pictures, and sign language, to improve the oral hygiene status of children with hearing impairment.

Methodology A randomized controlled trial. Sixty children were randomly divided into 3 groups: Skit video, Pictorial, and Sign language. The mean gingival and Oral Hygiene Index scores were recorded before and after interventions. A one-way ANOVA was used to test for statistically significant differences between pre- and post-intervention scores.

Results A significant difference in mean oral hygiene and gingival index scores was found between Group A before and after interventions ($P < .005$). A statistically significant difference was also found between group A and B in intergroup comparison of OHI and GI scores post intervention ($P < .004$).

Conclusion Skit video and pictorial intervention effectively improve oral health, resulting in reduced mean oral hygiene and gingival scores.

Keywords hearing impairment, skit video, sign language, educational intervention

Prevalence of Multidrug-Resistant Tuberculosis and Its Association with Previous Treatment History in Adults

Name of Author: M. Ahmed Mughal.
Affiliation: Wah medical college

Abstract

Introduction Multidrug-resistant tuberculosis (MDR-TB) poses a growing threat to global tuberculosis (TB) control efforts, particularly in high-burden countries like Pakistan.^[1] This study aimed to determine the prevalence of MDR-TB among adult pulmonary TB patients and evaluate its association with previous treatment history and other potential risk factors.

Methodology A cross-sectional analytical study was conducted at a tertiary care hospital in Lahore, Pakistan, from January to June 2024. A total of 250 adult patients with microbiologically confirmed pulmonary TB were enrolled using a non-probability consecutive sampling technique. Sociodemographic and clinical data were collected using a structured questionnaire. Sputum samples were tested using the GeneXpert MTB/RIF assay, and rifampicin-resistant samples were further analyzed by culture-based drug susceptibility testing to confirm MDR-TB. Data were analyzed using SPSS Version 26. Logistic regression was used to identify independent predictors of MDR-TB.

Results The overall prevalence of MDR-TB was 18.8% (47/250). MDR-TB was significantly more prevalent in previously treated patients (40.0%) compared to newly diagnosed cases (6.9%) ($p < 0.001$). On multivariate analysis, previous TB treatment (adjusted odds ratio [AOR] = 7.85; 95% CI: 3.85-16.00), smoking history (AOR = 2.13; 95% CI: 1.02-4.45), and diabetes mellitus (AOR = 2.75; 95% CI: 1.33-5.68) were independently associated with MDR-TB. Age and gender were not significantly associated with MDR-TB.

Conclusion The study revealed a high prevalence of MDR-TB, especially among previously treated patients. Previous TB treatment, smoking, and diabetes mellitus were key risk factors. These findings emphasize the importance of comprehensive drug resistance screening and the integration of non-communicable disease management and tobacco control into TB care strategies.

Keywords diabetes mellitus; drug resistance; multidrug-resistant tuberculosis; previous treatment; smoking.

ASSOCIATION OF SUBCHORIONIC HEMATOMA WITH PRETERM LABOUR IN PATIENTS WITH THREATENED ABORTION

Name of Authors: Rukhshanda Inam Khan*, ²Alruba Taimoor**, ³Aamir Nazir**, ⁴Uzma Zaman*, Saania Azmat, Farhat Nawaz

Affiliation: Department of Gynecology and Obstetrics, Zanana Teaching Hospital, Dera Ismail Khan,
Department of Physiology, Ayub Medical College, Abbottabad-Pakistan

ABSTRACT

Introduction One of the frequent obstetric complications in first trimester is vaginal bleeding. It has an incidence of 16%-25%. Subchorionic hemorrhage is the most common cause of first trimester miscarriage associated with vaginal bleeding. The objective of the study was to determine the association of subchorionic hematoma (SCH) with preterm labor in pregnant females with threatened abortion.

Methodology A Cohort Study was designed and conducted in the Obstetrics and Gynecology Department, Zanana hospital, Dera Ismail Khan (D.I. Khan). A sample size of 418 subjects was equally divided into two equal groups. Non-probability consecutive sampling was used for collection of samples. Pregnant women presenting with sub chorionic hematoma were considered as cases while pregnant women without sub chorionic hematoma were considered as controls. The diagnosis of subchorionic hemorrhage was established by ultrasound. Data was analyzed by SPSS version 22.0 for description, i.e., frequencies and percentages were calculated for categorical variables and for continuous variables, mean \pm standard deviation (\pm SD) was calculated. To compare preterm labor in both groups Chi-square test was applied and $p \leq 0.05$ was taken as significant. Stratification was done about age, gestational age, parity, history of hypertension, and weight to see the effect of these variables on preterm labor. Chi-square test was used for post stratification for both groups and $p \leq 0.05$ was considered statistically significant and relative risk was calculated.

Results The age range was from 18-40 years in group A with a mean age of 29.08 ± 2.88 years while it was 28.41 ± 2.94 years in group B. Mean gestational age was 13.99 ± 3.15 weeks in group A and 11.42 ± 3.37 weeks in group B. Mean parity was 0.91 ± 1.14 in group A and 0.78 ± 1.09 in group B respectively. Mean weight of subjects in group A was 68.31 ± 10.27 and 67.55 ± 10.09 Kg in group B. Majority of the patients were of 18-30 years in both groups (group A; 78.5% and group B; 78.9%). History of hypertension was noted in 33% in group A and 12.9% in group B. In group A, preterm labor was seen in 40 (19.1%) patients as compared to 61 (29.2%) patients in group B, ($p=0.02$, R. R=0.65).

Conclusion Subchorionic hematoma in patients with threatened abortion during the first half of the pregnancy may not increase the risk of preterm labor.

Keywords Threatened abortion; Sub chorionic hematoma; Preterm labor

Expression of Growth Hormone Secretagogue Receptors (GHS-R1a) In Primary Brain Cancer Cells and Its Correlation with Cancer Cell Lines Proliferation

Name of Author: Dr. Sehar Farhat

Affiliation: Ayub medical college Abbottabad

ABSTRACT

Introduction Gliomas consist of 80% of malignant brain tumors having a high rate of morbidity and mortality in all age group patients, with a median survival rate of less than 15 months(1). Even after treatment the patients are left with considerable disability and dependency. This renders windows to do further research on gliomas. Ghrelin and growth hormone secretagogue receptors are present in many normal tissues as well as in many cancers including brain, breast, liver, gastrointestinal and prostate cancers(2). In some cells ghrelin helps in cellular proliferation while in others it causes apoptosis. The objective of our study was to find the expression of growth hormone secretagogue receptors in brain cancer cell lines and to correlate it with cancer progression based upon apoptotic analysis.

Methodology This was an experimental study conducted on male and female patients, of all age groups, undergoing craniotomy for brain tumor. The sample was processed in a laminar flow hood and grown in a carbon dioxide incubator. Tumor cell lines generated from IK-148 (glioma), IK-155 (glioma) and IK-186 (meningioma) were treated with low (20 nm.) concentration and high (50 nm.) concentration of ghrelin for 48 hours and incubated. Cellular apoptosis was studied with flowcytometry analysis. The growth hormone secretagogue receptors (GHSR) were analyzed through immunofluorescence.

Results We found that ghrelin at a concentration of 20 nm. showed enhanced proliferation and showed lowest apoptotic cells when applied on IK-148, IK-155 and IK-186 cell lines. The low dose of ghrelin enhanced cell proliferation by increasing the number of cells and decreasing GHSR receptors, as was observed with immunofluorescence studies, relative to control. Ghrelin at high concentration (50 nm.) yielded opposite results in IK-148, IK-155 and IK-186. GHSR expression was significantly increased in all the three cell lines resulting in increased apoptotic rate of these cells relative to control cells.

Conclusion The proliferation and apoptotic effect of brain cancer cells depended upon the concentration of ghrelin applied. In low concentration ghrelin caused decrease in the number of its receptors, resulting in greater proliferation while in high concentration the number of ghrelin receptors increases resulting in augmented apoptosis.

Key Words Glioma, Ghrelin, GHSR, Primary brain tumor.

Effect of Integrated Neuromuscular Inhibition Technique (INIT) versus Conventional Exercise on Muscular Strength, Shoulder ROM, and scapular deviation among Young Adults with Scapular Dyskinesia II. A Randomize Control Trial.

Name Of Authors: Ms. Syeda Sana Waheed. Amna Aamir Khan. Ahad Hasan.
Affiliation: Ziauddin University

Abstract

Introduction Scapular dyskinesia (SD), particularly Type II, is a frequently overlooked shoulder dysfunction characterized by medial scapular border prominence, often associated with serratus anterior weakness ^[1]. This condition can compromise scapular mechanics even in asymptomatic young adults. The Integrated Neuromuscular Inhibition Technique (INIT), which integrates ischemic compression, strain-counter strain, and muscle energy techniques, has shown promise in addressing scapular imbalances.^[2]

Methodology A single-blinded randomized controlled trial was conducted at Ziauddin College of Physical Therapy, Karachi, involving 82 participants aged 20-40 years. Subjects were randomly assigned to two groups (n=41 each): Group A received INIT, and Group B underwent conventional therapeutic exercises over six weeks. Outcome measures included scapular deviation by PALM meter, shoulder ROM by goniometer, and muscle strength by handheld dynamometer, assessed at baseline, 4 weeks, and 6 weeks. The data was skewed so that Mann-Whitney U for between-group analysis, Friedman ANOVA for within-group analysis, and for post hoc analysis, Wilcoxon Signed-Rank were used.

Results Both groups, INIT and conventional therapy, were evenly matched at baseline, with similar mean ages (22.7 ± 2.29 vs. 23.26 ± 2.53 years). The INIT group demonstrated significantly greater improvements than conventional exercise across all measured outcomes. At six weeks, participants demonstrated superior shoulder range of motion (flexion, abduction, internal and external rotation; $p < 0.05$), enhanced muscle strength (upper and lower trapezius, serratus anterior, and rhomboids; $p < 0.05$), and a marked correction in scapular deviation ($p = 0.000$). Progressive within-group improvements further affirmed INIT's effectiveness in enhancing mobility, strength, and postural symmetry.

Conclusion Integrated Neuromuscular Inhibition Technique (INIT) significantly enhanced shoulder mobility, muscle strength, and scapular alignment in individuals with Type II SD. The findings support its integration into early physiotherapy protocols for effective musculoskeletal rehabilitation.

Keywords Scapular dyskinesia, Integrated Neuromuscular Inhibition Technique, Conventional therapy, Muscle strength, Scapular Deviation, Range of motion.

Seeing Beyond the Scan: A Case of Missed Posterior Stroke with Atypical Presentation.

Name of Author: Dr. Arbaz Ahmed.
Affiliation: Northampton General Hospital

ABSTRACT

Introduction Posterior circulation strokes, particularly those involving the PCA, account for 10-15% of ischemic strokes. They are often under-recognized due to vague or non-focal symptoms such as headache, mild sensory changes, or visual disturbances. CT imaging, although commonly first-line, has limitations in detecting posterior fossa pathology, which may delay diagnosis.

Objective To highlight the importance of clinical suspicion and early MRI in diagnosing posterior cerebral artery (PCA) strokes that may be missed on initial CT imaging.

Methodology A male in his 40s presented with a 3-day history of right-sided headache and left facial numbness. His past medical history included aortic root dilatation, varicose veins, and supraventricular tachycardia managed with rivaroxaban. Neurological and systemic examinations were unremarkable. CT brain showed subtle hypodensity in the right temporal region, but without clear focal signs, stroke team input was initially deferred. Given the clinical suspicion, urgent MRI was pursued, which confirmed an acute infarct in the right temporal and occipital lobes within the PCA territory.

Results The patient was discharged in stable condition on aspirin, with preserved neurological function and scheduled for specialist follow-up. This case underscores the diagnostic value of MRI when CT findings are inconclusive in suspected posterior circulation strokes.

Conclusion Posterior circulation strokes may present atypically and can be missed on CT imaging. Clinical persistence, timely MRI, and interdisciplinary collaboration are essential for preventing missed diagnoses and improving outcomes.

Keywords Posterior circulation stroke, PCA infarct, MRI, CT brain, Clinical suspicion

COMMON RISK FACTORS INVOLVED IN THE DEVELOPMENT OF MYOCARDIAL INFARCTION IN ADULTS YOUNGER THAN 45 YEARS OF AGE

Name of Author: Shazia Tauqeer

Affiliation: Assistant Professor Physiology Department Ayub Medical College Abbottabad. KPK

ABSTRACT

Introduction Pakistan has got a very high prevalence of myocardial infarction (MI). MI presents at pretty young age in this country.

Objectives The objective of present study was to determine the frequency of common risk factors associated with early development of MI in middle aged adults of less than 45 years

Methodology It was a cross sectional study conducted in the Cardiology department of Ayub Teaching Hospital (ATH) Abbottabad. A total of 255 consecutive patients diagnosed with MI admitted to the Cardiology Unit of ATH, Abbottabad. A detailed medical history and general physical examination of the patients was carried out with an emphasis on recording the presence or absence of common risk factors of MI in these patients. All routine investigations (Blood Complete Picture, Urea, Creatinine, and Blood Sugar & Lipid Profile) were done.

Results Mean age of the subjects was 39.98 ± 4.61 SD. The frequency of risk factors in descending order was smoking in (38.8%), obesity in (29.4%) and essential hypertension in (21.6%) of the patients. Other risk factors of MI in this study were diabetes mellitus (19.2%), family history of ischemic heart disease (IHD) was (18.8%) and disproportionate dyslipidemias in (12.9%). Sex of patients (male predominance) was found to be significantly associated with diabetes, smoking and dyslipidemia ($p < 0.05$).

Conclusion Male sex, smoking, hypertension, and obesity confer an increased risk of myocardial infarction in patients younger than 45 years of age.

Keywords: Myocardial Infarction, Hypertension, Dyslipidemia

ASSESSING THE EFFECTIVENESS OF e-HEALTH EDUCATION ON MENTAL HEALTH LITERACY IN UNDERGRADUATE YOUNG ADULT STUDENTS AT RAWALPINDI A QUASI EXPERIMENTAL STUDY

Name of Authors: Dr. Muhammad Salman Shahid^a, Dr. Shamaila Mohsin, Dr. Salahuddin Masood, Dr. Nimbal Imtiaz, Dr. Imran Bukhari, Dr. Farrukh Sair

Affiliation: Trainee FCPS - II Community Medicine, Community Medicine & Public Health Department, Army Medical College, Rawalpindi.

ABSTRACT

Introduction Evidence indicates that mental health problems reduces productivity of young adults¹ as stigma and privacy are barriers in seeking help². WHO recommends e-Health as catalyst for improved health behaviors? E-Health uses electronic technology for delivering health services³. e-Health interventions using technological platforms offer a promising approach in improving Mental Health Literacy (MHL). The study aims to assess the effectiveness of e-Health education in improving MHL among undergraduate students in Rawalpindi, Pakistan.

Methodology This quasi-experimental study was conducted on undergraduate students at a campus of National University of Medical Sciences at Rawalpindi from Sep 2024 to Nov 2024. Seventy students of age 18 – 25 years having higher secondary education. Participants were recruited using universal sampling technique after getting their informed consent. MHLS questionnaire was used for collection of MHL score before introduction of validated e-Health educational material, taken from Mental Health Literacy website, through social media platform (WhatsApp). e-Health intervention span over a period of 12 weeks. Post intervention MHL Score was measured using the same questionnaire. Wilcoxon Signed Rank test was applied to check for statistical significance.

Results Median MHLS Score of participants was **108 (111 – 102)** in pre intervention group while post intervention score had median of **134 (137 – 125)** out of total 160 MHLS Score. Results showed that there was statistical significance among pre and post intervention scores (p -Value < 0.001) showing a significant improvement in MHLS Scores.

Conclusion The result of this study highlights that e-Health based interventions can be used as an easy and effective tool to raise awareness and understanding of mental health with decreased stigma and improved privacy.

Keywords: e-Health, Mental Health, Non-randomized controlled trials.

Family caregivers' perspectives on caring for mentally ill adult patients at a tertiary hospital in Khyber Pakhtunkhwa, Pakistan

Name of Authors: Somia Saghir, Anny Ashiq Ali, Jalal Khan, Farhana
Affiliation: Iqra University North campus

ABSTRACT

Objective: Mental health disorders affect approximately 450 million individuals globally, with a significant burden observed in Pakistan. The country faces a critical shortage of mental health professionals, leaving family caregivers (FCGs) as the primary source of care for individuals with psychiatric illnesses. This study aims to explore the experiences of family caregivers providing care for mentally ill adult patients admitted to a tertiary care hospital in Khyber Pakhtunkhwa (KPK), Pakistan.

Methodology: A qualitative exploratory descriptive study was conducted from October 2024 to January 2025 with family caregivers of mentally ill patients in KPK, Pakistan. Convenience sampling was used to recruit 18 participants from a private tertiary care hospital. In-depth interviews were conducted using semi-structured interview guide. Content analysis was conducted using Creswell and Creswell's five-step inductive approach to identify emerging themes and categories.

Results Findings revealed that caregivers experience a "silent struggle" characterized by internal and external factors. Internal factors include emotional and psychological burdens such as stress, anxiety, and burnout. External factors encompass financial strain, inadequate training and knowledge, healthcare system barriers, and social stigma. Caregivers reported feeling unprepared for their roles, struggling with financial instability due to reduced employment opportunities, and facing difficulties navigating the healthcare system. Additionally, societal stigma further isolates caregivers, limiting their access to social support and exacerbating their emotional distress.

Conclusion The study emphasizes the need for structured support for caregivers through training, financial aid, and better healthcare access. Policy reforms and community initiatives can enhance caregiver well-being and care quality. Future research should explore interventions to reduce caregiver burden, especially in resource-limited settings.

Keywords Experiences, Family caregivers, Informal caregivers, Mental health caregiving, Perspectives.

Effect of Knowledge on Practice of Antimicrobial Stewardship: Investigating the Mediating Role of Attitude Among Undergraduate Medical Students; A Cross-sectional Study

Name of Authors: Aiman Akhtar Abbasi, Amna Khan, Bisma Tahir
Affiliation: Rawalpindi Medical University

Abstract

Introduction Antimicrobial resistance is a global health problem. Antimicrobial stewardship (AMS) refers to using antimicrobials to conserve antimicrobial potency while ensuring their accessibility in need.

Objectives Assess Knowledge, Attitude and Practice of Medical Students towards AMS and find association of Gender, Year of Education with Practice of AMS

Determine the effect of knowledge on practice towards AMS mediated by students' attitudes

Methodology It is a cross-sectional study conducted at RMU from June to August 2024 using non-random convenient sampling. The sample size was 384 with a population proportion of 50%. Medical students from all five years of MBBS were included. A validated antimicrobial stewardship questionnaire was used. SPSS version 27 was used to apply descriptive statistics, and linear regression between AMS practice and predictors. Hayes process macro model 4 was used to apply mediation analysis between AMS knowledge, attitude, and practice scales.

Results Most of the respondents had good knowledge (92%), moderate practice (67.8%), and poor attitude (66.4%) towards antimicrobial stewardship. Age ($B = 0.850$, $p = 0.006$), having a family member working in healthcare ($B = 0.316$, $p = 0.004$), gender ($B = -0.545$, $p = 0.027$), and year of study ($B = -0.306$, $p = 0.021$) had a significant association with practice. Attitude ($B = 0.0476$) does not affect the relationship between knowledge and practice of antimicrobial stewardship when used as a mediator ($B = 0.2739$, CI: 0.1152, 0.4327).

Conclusion There is no mediating effect of poor attitude on the relationship between knowledge and practice of antimicrobial stewardship. Age, gender, year of study, and having a family member in healthcare were significant predictors of antimicrobial stewardship practice. Incorporating AMS practice in curriculum can overcome this gap.

Keywords: Antimicrobial resistance, antimicrobial stewardship, medical students, Knowledge attitude practice (KAP), Predictors, Curriculum

The Link Between Health Literacy and OPD Visit Recurrence: Insights from a Pakistan's Tertiary Care Setting in 2025

Name of Authors: Ayesha Basharat¹, Tahira Amjad², Easha Masood¹, Hira Fatima¹, Hamna Waseem¹, Khadija Raza¹ Medical Students

Affiliation: Final Year MBBS, Foundation University Medical College² Supervisor, Associate Professor, Community Medicine Department Foundation University Medical College, Foundation University Islamabad.

ABSTRACT

Introduction Health literacy (HL), the capacity to access and use health information, strongly influences healthcare utilization and outcomes¹. In Pakistan, inadequate HL leads to poor adherence, delayed care-seeking, and inefficient use of tertiary facilities². However, its relationship with outpatient department (OPD) visit recurrence is not well studied. This study aimed to assess HL levels, examine their association with OPD visit recurrence, and identify related sociodemographic factors among patients at a tertiary hospital in Rawalpindi.

Methodology A cross-sectional analytical study was conducted at a tertiary-care hospital in Rawalpindi from March to Sept 2025, including 422 OPD patients aged ≥ 18 years. Random stratified sampling was used for department-based grouping, followed by consecutive sampling. An online, translated, interviewer-administered questionnaire covered demographics, the validated BRIEF Health Literacy Screening Tool (categorized as limited, marginal, adequate³), and healthcare utilization. Data were analyzed using IBM SPSS version 26. Informed consent and ethical approval were obtained.

Results The mean age of 423 patients was 50.84 ± 15.97 years; 343 (81.1%) were females, and 160 (37.8%) had no formal education. More than half, 239 (56.5%), had limited health literacy. The mean OPD visits in three months were 2.66 ± 1.66 , with 355 (83.9%) visiting for the same reason and 202 (56.9%) for follow-ups. HL score was inversely correlated with OPD visits, while HL level was significantly associated with gender and education ($p < 0.001$). Linear regression showed a weak but significant association between HL and OPD visits ($p = 0.039$, $R^2 = 0.010$), while occupation was an independent predictor ($B = 0.210$, $p = 0.003$).

Conclusion & Recommendations The study highlights that health literacy and demographic factors influence recurrent hospital visits, underscoring need for system-wide and community-based educational reforms to enhance equity and patient-centered care. Routine HL screening in OPDs and patient-friendly communication strategies are recommended to reduce unnecessary revisits.

Keywords: Delivery of Health Care, Health Literacy, Outpatients, Recurrence, Tertiary Healthcare.

Pure-tone audiometry (PTA) and the social implications of hearing impairment in patients with Usher syndrome

Name of Author: Dr. Farhan Abbas

Affiliation: PAF Hospital

ABSTRACT

Introduction Usher syndrome is a rare inherited disorder characterized by hearing loss, visual impairment, and sometimes vestibular dysfunction. While hearing loss is a hallmark feature, systematic characterization using pure-tone audiometry (PTA) remains limited. In addition to its clinical burden, hearing impairment in Usher syndrome carries major social implications, including barriers to communication and risks of social isolation.

Methodology PTA was performed in 44 patients with Usher syndrome (10 type I, 12 type II, and 22 type III; median age 11.7 years, range 1-49). Hearing status was classified as normal, mixed hearing loss (HL), pure conductive HL (CHL), pure sensorineural HL (SNHL), or undefined HL type. Air conduction (AC) and bone conduction (BC) thresholds were analyzed in relation to age.

Results Hearing loss was present in 84% (37/44) of patients: 49% had pure SNHL, 22% mixed HL, 8% pure CHL, and 22% were undefined; 16% had normal hearing. The prevalence of SNHL increased with age, exceeding 65% in patients older than 21 years. Mean AC thresholds in the better ear were 66 dB, BC 57.2 dB, and the average air-bone gap 7.3 dB. Both AC and BC thresholds showed age-related deterioration, particularly in 2000 and 4000 Hz ($p < 0.05$).

Conclusions Hearing loss is highly prevalent in Usher syndrome, with progressive SNHL as the dominant pattern. Because auditory decline compounds the effects of visual impairment, early audiological evaluation, rehabilitative intervention, and social support are critical to maintaining communication, independence, and quality of life.

Keywords: Usher syndrome, Pure-tone audiometry (PTA), Sensorineural hearing loss (SNHL), Air and bone conduction thresholds, social implications

**Assessment of Malnutrition, a Sustainable Development Goal,
among School-going Adolescents in South Punjab, Pakistan**

Name of Authors: Rameesha Shaukat, Dr. Saira Maroof, Dr. Humaira Mahmood, Khursand Bint-e-Azam, Dr. Nimbal Imtiaz, Izzah Nawaz

Affiliation: AFGMI CMH

ABSTRACT

Introduction Poor nutritional status is a critical issue affecting school-based adolescents, particularly in compromised socio-demographic regions like Lodhran, South Punjab, Pakistan. Adolescents are in a key developmental stage, and inadequate nutrition can have long-term impacts on their health, cognitive development, and academic performance. Measurement of nutritional status is crucial to understand malnourishment status when teens are in growth spurt.

Objective In this study, the objective is to assess the prevalence of malnutrition in the adolescents of 15- to 18-year-old.

Methodology This study employed a descriptive cross-sectional design conducted in peri urban/ rural schools of Lodhran. The study population was school-going adolescents from 15-18 years old. It was adolescent reported study. Sample size for study population was calculated as 369. However, 384 adolescents' data was entered for final analysis. The data collection involved questionnaire containing socio-demographic questions, and anthropometric measurements (weight and height) to determine malnutrition status. Pilot study was also conducted to examine feasibility of study. The study was conducted after the approval of Institutional Review Board. Descriptive statistics are employed to assess the demographic characteristics and malnutrition. WHO Anthro Plus Software was used to measure Height for age and BMI for age z score. While SPSS version 27 was used to calculate frequency, percentages and mean scores.

Results The data analysis included 384 participants, with a mean age of 16.58 years and a majority of male (46.1%) and female (53.9%). The mean height for age Z score (HAZ) was -0.9992, indicating mild stunting, and the mean BMI were -1.2584, indicating moderate underweight. 131(34.1%) participants had thinness, while 35(9.1%) were overweight and 107 (27.9%) were stunted.

Conclusion Adolescents of far-flung rural areas would be better able to make balanced food choices and be more resilient to future acute and chronic malnutrition tendencies if targeted nutrition education programs were incorporated into the school curriculum. In order to build age-appropriate social protection plans that integrate food assistance programs with home income growth activities, vegetable gardens, small-scale cattle farming along with parental education and awareness programs, stunting and thinness among adolescents can be addressed. Public officials should put these findings into practice for targeted policy intervention strategies.

Keywords Malnutrition; Adolescents; Stunting; Thinness; Underweight; Overweight

Depression, a Hidden Co-Morbidity in Patients of Chronic Ailments; An Outpatient-Based Study

Name of Authors: Laila Yaseen, Fuad Ahmad Siddiqi, Wasif Anwar, Imran Khan, Kanaz Ahmad Siddiqi, 6Shahzad Ashraf

Affiliation: Fazaia medical college

ABSTRACT

Objective: To identify the rate of depression among patients with chronic diseases attending outpatient clinics.

Methodology: This cross-sectional study was conducted at the Department of Medicine in a Tertiary care Hospital, Rawalpindi, from December 2023 to May 2024. A total of two hundred and forty-six patients visiting the outpatient department (OPD) were chosen through consecutive sampling, adhering to specific exclusion and inclusion criteria. All participants provided informed written consent. Demographic data, information on comorbidities, and clinical and laboratory details were collected. The (CESD-10) scale "Center for Epidemiologic Studies Depression" was utilized to evaluate depression.

Results: Among the 246 patients with chronic ailments in the medical OPD, 115 were male, and 131 were female. Depression was prevalent in 57 (86.4%) cases of diabetes mellitus (p-value 0.014), 37 (61.7%) cases of hypertension (p-value 0.005), 40 (64.5%) cases of chronic kidney disease (p-value 0.024), and 51 (87.9%) cases of asthma (p-value 0.010).

Conclusion: Patients with chronic ailments are more susceptible to depression, highlighting the importance of considering this comorbidity in their treatment plans.

Keywords: Diabetes mellitus, hypertension, chronic kidney disease, asthma, depression.

Undergraduate Oral Presentations Abstracts

Knowledge, Attitude and Practice of Kangaroo Mother Care Among Postnatal Mothers of Low-Birth-Weight babies and Its Implementation in Healthcare Settings in Selected Districts of Pakistan

Name of Authors: Gohar Fatima, Nimbus Maheen, Shifa Airass Baig, Abdul Moghees Ahmad, Muhammad Adil

Supervisors Prof. Dr Rukhsana Khan, Dr Iffat Noreen

Affiliation: Fazaia Medical College Islamabad

ABSTRACT

Introduction Neonatal mortality and morbidity remain significant health concerns¹. Kangaroo Mother Care (KMC) which involves skin-to-skin contact and exclusive breastfeeding—has been shown to improve bonding, thermoregulation, breastfeeding rates, and survival among low-birthweight infants². In Pakistan, existing research has largely focused on clinical outcomes, with limited attention to maternal understanding and practice³. This study uses the Knowledge, Attitude, and Practice (KAP) framework to explore gaps between what mothers know and do regarding KMC, while also assessing implementation challenges within healthcare settings in selected districts.

Objectives To assess the knowledge, attitude and practice of mothers regarding kangaroo mother care and the implementation of SOPs related to KMC in hospitals and evaluate the role of health care providers in guiding parents on KMC. Moreover, to determine association of mother's knowledge with their attitude, practice and sociodemographic factors

Methodology An analytical cross-sectional study was carried out from February to September 2025. Our study population included 77 postnatal mothers of low-birth-weight babies admitted in KMC wards of DHQ hospital Layyah, Services Hospital Lahore and PAF hospital Islamabad. A self-developed semi-structured Questionnaire was used comprising of individual consent, sociodemographic variables and questions related to knowledge, attitude and practice regarding KMC and availability of SOPs in hospitals. Data was analyzed using SPSS version 23.

Results Among the 77 participants, 54.5% of mothers demonstrated outstanding knowledge of Kangaroo Mother Care (KMC), 97.4% showed a positive attitude, and 74.03% exhibited excellent KMC practices. Additionally, 93.51% reported adequate availability of KMC-related standard operating procedures (SOPs) at their healthcare facilities. A statistically significant association was found between knowledge, attitude, and practice of KMC ($p < 0.05$).

Conclusion Mothers at KMC centers demonstrated strong knowledge, positive attitudes, and effective practice of Kangaroo Mother Care. Their adherence to KMC was supported by clear standard operating procedures (SOPs) and continuous guidance from healthcare providers, who played a key role in monitoring and facilitating the process.

Keywords Low birth weight, Infant mortality, Kangaroo mother care, Premature

Sociodemographic, patient and health system related factors affecting the timing of presentation of breast cancer among the women of Punjab.

Name of Authors: Ayesha Maryam, Tayyaba Kanwal, Javeria, Hussain Khalid, Ahmed Raza

Supervisors: Dr Arshia Bilal, Dr M. Inzamam Khalil

Affiliation: Fazaia Medical College Islamabad

ABSTRACT

Introduction Breast cancer is a leading global health burden, with 2.3 million new cases and 685,000 deaths reported in 2020, ranking as the second most frequently diagnosed malignancy and a major cause of all cancer-related mortalities ^[1]. Pakistan has the highest incidence in Asia, with rates two and a half times greater than the neighboring countries and an estimated lifetime risk of one in every nine women ^[2]. Although early-stage disease offers the best prospects for cure, most women in Pakistan present with advanced-stage breast cancer, resulting in poor prognosis and survival. This research identified key factors contributing to delayed presentation in Pakistan, enabling targeted interventions that improve early detection, treatment outcomes, and ultimately reduce mortality ^[3].

Methodology A descriptive cross-sectional study was carried out on 65 breast cancer patients at Lahore. A self-structured questionnaire was used to interview patients and the collected data was analyzed using SPSS version 23.0 with alpha preset at 5%.

Result The study showed that 73.8% of women presented with late-stage breast cancer, most commonly those who were older($p=0.004$), unmarried($p=0.049$), and uneducated($p=0.003$). Low socioeconomic status($p=0.005$), poor awareness($p=0.007$), negligence of symptoms($p=0.007$), absence of family history($p=0.024$), and low spousal support($p=0.020$) were key predictors of late presentation. In addition, women living more than an hour away from oncology services($p=0.022$) were significantly more likely to be diagnosed at advanced stages.

Conclusion and Recommendations Vast number of women presented late with breast cancer. Late presentation was common among unmarried, uneducated women of more than 49 years of age. These findings highlight the need for targeted interventions such as awareness campaigns, better referral systems, and policies that improve access and affordability of specialized care. Tackling these barriers can enable earlier detection, timely treatment, and a reduction in breast cancer mortality in Pakistan

Keywords Breast Neoplasms; Delayed Diagnosis; Early Detection of Cancer; Socioeconomic Factors; Health Services Accessibility; Pakistan

Evaluating the Effectiveness of Digital rehabilitation in stroke patients, a Quasi-experimental study in Islamabad Rawalpindi

Name of Authors: Hassam Ahmed, Abdul Saboor Chishti, Laiba Imran, Khadija Tahir
Supervisors: Dr Juwayria Omar, Dr Zaryab Haider
Affiliation: Fazaia Medical College Islamabad

ABSTRACT

Introduction Stroke is leading cause of disability and death. Access to rehabilitation is limited in low-resource settings due to high costs, caregiver burden, and difficulties with travel. Digital rehabilitation tools, such as mobile applications, provide a promising alternative by offering home-based, accessible, and cost-effective therapy options which improve quality of life in patients and increase awareness among caregivers.

Methodology Quasi-experimental study was conducted from January-August 2025 in tertiary care hospitals of Islamabad and Rawalpindi. 30 stroke patients and caregivers were selected through purposive sampling. Apps were installed in mobiles of respondents and evaluated before and after two months of use. Five domains were assessed using 20-point scales: dysphagia, paralysis, quality of life, cost-effectiveness, and time saved. Data was analyzed using paired t-tests.

Results Statistically significant results were seen, cost-effectiveness mean scores increased from 9.48 to 14.88 ($p < 0.001$), dysphagia mean scores from 8.61 to 14.39 ($p < 0.001$), paralysis mean scores from 7.94 to 13.73 ($p < 0.001$), and quality of life mean scores from 6.88 to 13.00 ($p < 0.001$). Additionally, time saved improved from 6.03 to 10.64 ($p < 0.001$). These findings confirm that digitalization offer measurable clinical, functional, and economic benefits for rehabilitation of chronic diseases.

Conclusion Digital rehabilitation applications effectively enhance recovery, improve quality of life, and reduce costs and hospital visits for stroke patients. They represent a practical, accessible solution that should be integrated into stroke and chronic disease management strategies.

Keywords Stroke, digital rehabilitation, paralysis

Comparison of Gamified Escape Room and Traditional Assessment in Medical Education-Unraveling Perception, Motivation and Problem-Solving Skills: A Pilot Study

Name of Authors: Syeda Hijab Zahra, Muhammad Fakhir Nadeem Malik, Muaaz bin Asif, Muhammad Aaun Raza
Supervisors: Dr. Saleha Afridi, Dr. Armin Bilquis
Affiliation: Fazaia Medical College Islamabad

ABSTRACT

Introduction Traditional assessment methods in medical education often struggle to sustain student engagement and promote critical thinking. Active learning strategies such as case-based or problem-based learning exist but may not fully engage students or develop real-time problem-solving skills. Gamification, particularly escape room-based learning, is an innovative strategy to enhance motivation, engagement, and problem-solving skills.

Objective To compare the effectiveness of gamified escape room assessment with traditional methods in improving medical students' perception, engagement, motivation, and problem-solving skills.

Methodology A quasi-experimental pilot study was conducted at Fazaia Medical College, Islamabad, over eight months (February-September 2025). A total of 68 second- and third year MBBS students were stratified and randomly assigned to a gamified escape room group ($n=34$) or a traditional assessment group ($n=34$). Pre- and post-intervention self-structured questionnaires measured perceptions, prior gamification experience, engagement, motivation, and problem-solving skills. Data were analyzed using SPSS v2023. Paired t-tests compared within-group changes, while independent t-tests compared post-intervention scores between groups.

Results The gamified group showed significant improvements in problem-solving (3.30 ± 0.47 vs. 2.86 ± 0.41 , $p=0.001$) and engagement/motivation (3.44 ± 0.51 vs. 1.50 ± 0.56 , $p=0.001$), while perceptions remained unchanged ($p=0.899$). In contrast, the traditional group exhibits decline in perception (3.15 ± 0.32 to 1.87 ± 0.41 , $p=0.001$) and problem-solving (2.14 ± 0.53 to 1.80 ± 0.75 , $p=0.019$). Paired t-tests showed improvements within the gamified group and declines within the traditional group, while independent t-tests revealed that the gamified group had significantly higher post-intervention score across all domains ($p=0.001$).

Conclusion

Gamified escape room-based assessment is more effective than traditional methods in enhancing perception, engagement, motivation, and problem-solving. Incorporating gamification into medical curricula can create more interactive and effective learning experiences.

Keywords Gamification; Escape Room; Medical Education; Motivation; Engagement; Problem-Solving

Assessment Of Quality of Life and Self-Esteem In Individuals With Limb Amputation Using Prosthesis In Punjab: A Cross-Sectional Study.

Name of Authors: Mamoonah Siddiqui, Syeda Rida Fatima Qamar, Faarha Iqbal, Ayesha Amjad, Adil Nawab

Supervisors: Prof Dr Rukhsana Khan, Dr Iffat Noreen

Affiliation: Fazaia Medical College Islamabad

ABSTRACT

Introduction Limb amputation profoundly affects physical, psychological, and social well-being¹. While prosthetic devices restore mobility, amputees often continue to face challenges with self-esteem and quality of life². Limited evidence from Pakistan underscores the need to evaluate the overall well-being of amputees using prostheses. This study explores amputees' experiences and the impact of amputation on their physical, mental, and social health.

Objectives This study aims to assess the quality of life across social, physical, environmental, and psychological domains and self-esteem and evaluating the association of these factors with sociodemographic factors.

Methodology An analytical cross-sectional study was conducted at three rehabilitation centers in Punjab from Jan to Aug 2025. Study population comprised of 62 limb prosthesis users aged 15 and above that were included through purposive sampling. Data was collected using a demographic questionnaire, WHOQOL-BREF, and RSES³, and analyzed in SPSS v23 with results presented in tables and charts.

Results Most participants were male (72.6%) and unemployed (56.5%), with trauma being the leading cause of amputation (51.6%). Majority of participants (45.6%) had amputation below level of knee. 58.1% participants had been amputated for less than one year. Quality of life scores indicated that 54.8% had good QOL. 62.9% participants had normal self-esteem. We found an association between level of amputation and self-esteem. (**p-value 0.008**)

Conclusion Prosthesis use was found to significantly enhance mobility, quality of life, and self-esteem among amputees. Comprehensive rehabilitation should integrate psychological counselling, physiotherapy, vocational support, and sustained follow-up. Policymakers are urged to ensure affordable, accessible prosthetic and rehabilitation services, coupled with awareness initiatives to reduce stigma and promote overall well-being in Pakistan.

Keywords Limb amputation, Prosthesis, Quality of life, Self-esteem.

Beyond the Smoke: Understanding Vaping Behavior in Young Adults of Islamabad.

Name of Authors: Faaria Mushtaq, Huzaifa Ayaz, Anusha Zulfiqar, Hafsa Nasir

Supervisors: Dr Arshia Bilal, Dr M. Inzamam Khalil

Affiliation: Fazaia Medical College Islamabad

ABSTRACT

Introduction Vaping, marketed as a modern smoking alternative, was valued at \$22.45 billion globally in 2022 and is expected to grow 30.6% annually through 2030 (1). Since 2018, Pakistan's vaping market has grown by 15-20% annually, with a rise in vape shops and a surge in online sales, particularly after COVID-19 (2). Vaping is influenced by mental health factors like stress, anxiety, and depression, as well as personality traits such as curiosity and the Big Five personality traits (3). Vaping is increasing among young adults in Islamabad, driven by peer pressure, social media, affordability, and perceived safety.

Objectives To assess social, demographic, psychological, and economic influences that encourage vaping among young adults of Islamabad.

Methodology Study design: Descriptive cross-sectional Sample: 90, (**WHO** sample size calculator) Study tools: **Self-developed** Google form questionnaire in English.

Self-administered through WhatsApp. Comprised of: Consent, Social, demographic, psychological, and economic factors. Data Analysis: Using **SPSS version 23.0**. Descriptive statistics for categorical data like gender and residence through percentages, for quantitative data (Duration of vaping, age, household income, etc.). Mean and Standard deviation will be calculated.

Results A cross-sectional study involving 90 participants, mostly aged 19-24 (91.2%), found that 66.7% were male and 76.7% were college students. Over half (55.6%) vaped daily, and 56% also smoked. Key motivators included curiosity (80%), stress relief (75%), and peer influence (90%), while accessibility (95%) and affordability (90%) further reinforced use. Polysubstance use was high, with 77.8% reporting other drug use, mainly weed (50%) and hashish (35%). Although 64.4% expressed a desire to quit, only 42.4% had attempted to do so.

Conclusion Adolescent vaping in Islamabad is driven by curiosity, peer pressure, and stress, calling for peer-led education and mental health support. Gender disparities and low flavor influence highlight the need for targeted outreach and timely flavor regulation.

Keywords Behavior, vape, young adults, Islamabad

To what extent do couples participate in family planning decisions in urban Islamabad

Name of Authors: Waleed, Jazeela Ammar, Zahra Naqvi, Zohaib Israr

Supervisors: Dr Juwayria Omar, Dr Zaryab Haider

Affiliation: Fazaia Medical College

ABSTRACT

Introduction Family planning is essential aspect of reproductive health. In patriarchal societies, decision-making is often male dominated, yet male involvement in family planning remains limited due to cultural norms, religious beliefs and lack of awareness. Study evaluated the extent of couples' participation in family planning.

Methodology An analytical cross-sectional study was conducted among married couples aged 18-50 years in PAF Colony, Islamabad, after informed consent. Self-structured questionnaire was used to assess knowledge, attitudes, practices, and decision-making. Simple random sampling was used for data collection, validated using Cronbach's alpha, analyzed in SPSS version 24. Frequencies and percentages were calculated; chi-square tests were applied to assess associations between categorical variables.

Results Out of 97 participants, 77.3% couples were involved in joint decision-making, 21.4 % wife-led, 9.3% husband-led, and 1% elder influenced. Condoms were used by 52.6%, oral pills 21.6%, natural methods -15.5%, and IUDs -9.3%. Male awareness levels showed 70.8% "somewhat aware," 14.6%- "fully aware," 12.5% had "heard but unsure," 2.1% were "not aware at all." 49.1% of households had 1-2 children, while middle-income households had 3-4 children (51.9%). Significant associations were seen between higher income and fewer children ($p = 0.027$), awareness levels and contraceptive method choice ($p = 0.005$), spousal communication was related to joint decision-making ($p = 0.017$).

Conclusion Study highlights although joint decision-making in family planning is becoming more common, gaps remain in male awareness and participation. Cultural and social barriers continue to influence contraceptive choices and restrict equal involvement.

Key words Contraceptive, family planning, awareness

Neuropsychiatric Adverse effects (NPAEs) of Montelukast monotherapy and combination therapy in children and adolescents at PAF hospital Islamabad.

Name of Authors: Saiqa Batool, Syeda Aina, Eman, Mariyam Fatima, Usman Jamil

Supervisors: Dr. Saleha Afridi, Dr. Armin Bilquis

Affiliation: Fazaia Medical College Islamabad

ABSTRACT

Introduction Montelukast is widely prescribed for asthma and allergic rhinitis in children, yet concerns have emerged regarding neuropsychiatric adverse effects (NPAEs), including sleep disturbances, irritability, and hyperactivity. While international studies show mixed findings, local evidence from Pakistan is limited.

This study helps fill the gap in local research by examining the correlation between montelukast usage and neuropsychiatric symptoms, and by comparing the incidence of these effects in children taking montelukast as monotherapy versus in combination therapy. It provides important insights into the risks associated with montelukast and may contribute to safer prescribing practices in Pakistan

Objectives This study aimed to evaluate the frequency of NPAEs, particularly sleep disturbances and behavioral changes, in children and adolescents using montelukast as monotherapy or in combination therapy.

Methodology An analytical cross-sectional study was conducted on 62 pediatric patients aged 1-18 years at PAF Hospital Islamabad. Standardized questionnaires (CSHQ and modified PSC-17) were used to assess sleep and behavioral symptoms. Data were analyzed using SPSS version 23, with independent t-test and chi-square applied.

Results Independent t-test results showed no statistically significant differences in sleep habits or hyperactivity/irritability between therapy types. Chi-square analyses also revealed no significant associations with therapy type or comorbid illness. The null hypothesis could not be rejected, indicating no association between montelukast (monotherapy or combination therapy) and NPAEs

Conclusion& Recommendations Short-term use of montelukast was not associated with significant neuropsychiatric adverse effects in children and adolescents. Montelukast appears safe in both monotherapy and combination therapy for short durations, though the potential risks of long-term use require further investigation.

Future studies should include larger sample sizes, broader age groups, longer treatment durations (>2 months), and multi-center settings to better evaluate long-term safety.

Keywords Montelukast, Neuropsychiatric Adverse Effects, Sleep Disturbances, Behavioral Changes, Monotherapy, Combination Therapy, Children, Adolescents

Psychosocial Effect of Acne Vulgaris on the Quality of Life among the students at Air University, Islamabad.

Name of Authors: Huzaifa Khan, Rimsha Nasir, Due-e-Khurshid Abbasi, M. Khubaib Abdullah

Supervisor: Dr Mahwish Akhtar

Affiliation: Fazaia Medical College

ABSTRACT

Introduction Acne vulgaris is one of the most prevalent dermatological conditions among young adults, often associated with profound psychosocial consequences. Although not physically debilitating, it can significantly impair quality of life by affecting self-esteem, social functioning, and emotional well-being. In Pakistan, the rising prevalence among university students highlights the importance of assessing its psychosocial burden. The objective of this study is to evaluate the psychosocial impact of acne vulgaris on the quality of life among students at Air University, Islamabad, and to explore associations between lifestyle factors and acne severity.

Methodology An analytical cross-sectional study was conducted on 94 students aged 18-25 years, recruited through purposive sampling. Data were collected via a semi-structured questionnaire incorporating the Dermatology Life Quality Index (DLQI) and Cardiff Acne Disability Index (CADI). Descriptive statistics, chi-square tests, and Spearman correlation were applied using SPSS v25.

Results Significant associations were found between lifestyle factors and acne severity, particularly daily sugar intake ($p = 0.034$) and frequency of carbonated drink consumption ($p = 0.002$). Psychological effects were notable, with acne linked to aggression, frustration, and embarrassment ($p = 0.042$), as well as negative self-perceptions and social discomfort ($p = 0.022$). Sleep disturbances also showed a significant relationship with interference in social life ($p = 0.043$). Overall, higher DLQI and CADI scores reflected moderate-to-severe impacts on students' psychosocial functioning.

Conclusion& Recommendations Acne vulgaris significantly compromises the psychosocial well-being and quality of life of university students. Addressing lifestyle factors, promoting awareness, and providing psychosocial support are essential for holistic acne management. Universities should conduct awareness programs to educate students about the psychosocial effects of acne and available treatment options. Lifestyle modifications, such as reducing sugar and carbonated drink intake, should be promoted through health campaigns. Collaboration between dermatologists and mental health professionals can improve the overall management of acne and its psychosocial consequences.

Keyword Acne Vulgaris, Psychosocial Effect, Quality of Life, DLQI, CADI, Lifestyle Factors, University Students

Usability and Acceptance of a Digital Health App for Assessing Diet, Physical Activity and Muscle Strength in Middle-Aged and Geriatric Population with Type-2 Diabetes and Hypertension: A Feasibility Study

Name Of Authors: Iman Khan, Laiba Khan, Lamiha Basit, Hana Fatima Asad

Supervisors: Prof Dr Rukhsana Khan, Dr Iffat Noreen

Affiliation: Fazaia Medical College

ABSTRACT

Introduction Type 2 diabetes and hypertension are highly prevalent among middle-aged and older adults in Pakistan¹, contributing substantially to morbidity and reduced quality of life². Mobile health (m health) applications provide innovative tools for lifestyle management through monitoring of diet, physical activity, and muscle strength³. Despite their potential benefits, the feasibility and acceptability of m health interventions in Pakistan's middle-aged and geriatric populations remain underexplored.

Objectives To assess the dietary habits, lifestyle factors, and physical activity levels of middle-aged and geriatric adults having diabetes or/and hypertension at PAF Hospital. To develop a digital application that provides guidance for diet and exercise. To assess the feasibility, usability, and user acceptance of the application for real-world implementation.

Methodology This feasibility study recruited thirty-three participants aged ≥ 40 years with diabetes and/or hypertension through purposive sampling. A mobile application was used to collect data via structured questionnaires assessing dietary habits (Modified NIN Dietary Assessment Questionnaire), physical activity (Godin Leisure-Time Exercise Questionnaire), muscle strength (SARC-F), and usability (System Usability Scale-SUS), along with demographic information. Data were analyzed using descriptive statistics and independent t-tests to compare age groups and gender with system usability in SPSS version 26. The study protocol was approved by the IRB-FMC, and informed consent was obtained from all participants.

Results The application demonstrated high feasibility (75.8% participants). Usability was strong with 72.7% finding it easy to use and 93.9% feeling confident. Significant modifiable risk factors identified included unhealthy dietary habits (66.7%), sarcopenia risk (60.6%), and sedentary lifestyles (48.5%). Participants aged >65 years had significantly higher SUS scores (mean=44.50) than those aged 40-64 (mean=38.41, $p=0.039$). No significant gender difference was observed ($p=0.411$).

Conclusion The digital health application was found to be a feasible, usable and well-accepted tool for assessing key health parameters in middle-aged and geriatrics adults. Future work should focus on iterative design improvements based on user feedback and long-term studies to evaluate the app's impact on clinical outcomes.

Keywords Digital Health, Mobile Applications, Geriatrics, Middle-Aged, Diabetes, Hypertension, Usability

Urogenital Tract Diseases in Unmarried Females Using Disposable vs Non-Disposable Sanitary Products in Islamabad: A Cross-Sectional Study

Name of Authors: Minahil Chaudhary, Soha Khan, Maaz Iftikhar, Ayesha Chaudhary

Supervisors: Dr Juwayria Omar, Dr Zaryab Haider

Affiliation: Fazaia Medical College

ABSTRACT

Introduction Menstrual hygiene is often neglected in developing countries like Pakistan, where cultural taboos and limited awareness lead to unsafe practices. Inadequate knowledge, prolonged product use, and poor storage increase the risk of urinary tract infections (UTIs), bacterial vaginosis (BV), and candidiasis. This study assessed menstrual practices and their association with urogenital symptoms among unmarried young females.

Methodology An analytical cross-sectional study was conducted among 110 unmarried females aged 18-25 years in Islamabad. Data were collected through a standardized questionnaire after informed consent. Variables included product type, change frequency, storage practices, and awareness. Data were analyzed in SPSS v27 using descriptive statistics and Chi-square tests.

Results Most participants were aged 18-21 years. Prolonged use of sanitary products beyond recommended duration was significantly associated with urogenital symptoms ($p=0.031$). Improper storage of menstrual materials correlated with negative menstrual experiences, including concealing menstruation ($p=0.003$). Participants with symptoms often reported inadequate treatment ($p=0.001$).

Conclusion Poor menstrual hygiene practices, particularly prolonged use and unsafe storage of products are significantly linked with infection-related symptoms. Educational interventions and improved access to safe menstrual products are vital to reducing infection burden and improving reproductive health in young women.

Keywords Menstrual hygiene, Urogenital infections, Sanitary products, Adolescent health, Pakistan

POSTPARTUM DEPRESSION & SOCIAL SUPPORT AMONG WOMEN OF JOINT AND NUCLEAR FAMILIES IN ISLAMABAD; A COMPARATIVE CROSS -SECTIONAL STUDY

Name of Authors: Amna Ahmad, Salma Mushayyada, Nisha Manzoor, Arooj Sarfraz

Supervisors: Dr. Saleha Afridi, Dr. Armin Bilquis

Affiliation: Fazaia Medical College Islamabad

ABSTRACT

Introduction Postpartum depression (PPD) is a significant public health issue that adversely affects maternal well-being, child development, and family functioning. While previous studies focused on effect of social support and family relationships on postpartum depression, this study aims to explore the relationship of postpartum depression with the type of family structure. ²Postpartum depression is a prevalent maternal mental health disorder that disrupts mother-infant bonding and family functioning. While several biological and psychosocial factors contribute, social support has been identified as one of the most protective and modifiable determinants. In Pakistan, limited research has examined postpartum depression in relation to family structures using standardized measures. As joint and nuclear families offer differing levels of support, this study seeks to compare their impact on postpartum depression among women in Islamabad.

Objective To determine the prevalence of postpartum depression among women in Islamabad, compare levels of perceived social support between joint and nuclear family systems, and assess their association.

Methodology A comparative cross-sectional study was conducted at PAF Hospital Units I & II and PIMS Hospital, Islamabad. A total of 100 postpartum women (within 4 weeks to 1 year after delivery) were questioned through purposive sampling. Data was collected using a structured questionnaire, Edinburgh Postnatal Depression Scale (EPDS), and Multidimensional Scale of Perceived Social Support (MSPSS). Descriptive statistics, Chi-square tests, and Logistic regression were applied for analysis using SPSS v23.

Results Most participants were urban residents (69%), unemployed (80%), and from joint families (66%). EPDS results indicated a considerable proportion of women experienced depressive symptoms. A strong negative association was found between social support and postpartum depression—women reporting higher levels of support were less likely to experience PPD. However, no association with family structure was found.

Conclusion Postpartum depression is common among women in Islamabad with social support acting as protective factor with no association to family structure.

Keywords: Postpartum depression, social support, Family structure, Joint family, Nuclear family

KNOWLEDGE, ATTITUDE AND PRACTICES RELATED TO CERVICAL CANCER AND PERSPECTIVE TOWARDS HPV VACCINE AMONG THE MOTHERS OF YOUNG FEMALES IN ISLAMABAD

Name of Authors: Naba Taufique, Iman Amin, Maryam Abrar, Tasneem Fatima

Supervisors: Prof Dr Rukhsana Khan, Dr Iffat Noreen

Affiliation: Fazaia Medical College Islamabad

ABSTRACT

Introduction Cervical cancer is the fourth most common cancer among women globally and the third most frequent in Pakistan^{1,3}. Previous studies have shown poor knowledge, low screening rates, and attitude towards cervical cancer among Pakistani women². Barriers include lack of information, myths about fertility, fear of side effects, high cost, and limited screening facilities⁴. This study assessed mothers' knowledge, attitudes and practices regarding cervical cancer and their perspectives toward HPV vaccination in Islamabad.

Objective To evaluate knowledge, attitudes and practices related to cervical cancer and to explore perspectives toward HPV vaccination among mothers of young females.

Methodology An analytical cross-sectional study was conducted over 9 months among 100 mothers of girls aged 9-16 years from PAF Complex and Shah Allah Ditta community in Islamabad. Data were collected through a self-structured, interviewer-administered questionnaire and analyzed using SPSS version 23.

Results Awareness was limited: only 4% of participants had heard of HPV, and 12% could correctly identify cervical cancer. Screening practices were very low, with only 2% ever having a Pap smear, usually on medical advice. Despite this, 78% supported HPV vaccination and 89% expressed willingness to vaccinate their daughters. Higher education, income and urban residence were significantly associated with better knowledge and attitudes. Barriers included myths, fertility concerns, cost, and side effect fears. A large majority (85%) supported a national HPV vaccination program, favoring free vaccines and hospital-based delivery.

Conclusion The study found limited knowledge and poor screening practices regarding cervical cancer among mothers in Islamabad, though most expressed positive attitudes and strong willingness to vaccinate their daughters and support a national vaccination program. Persistent barriers included fertility concerns, misconceptions, cost, and fear of side effects. Targeted awareness campaigns, affordable or free vaccines, improved screening access, and training of frontline health workers are essential to build trust, enhance vaccine uptake, and strengthen cervical cancer prevention in Pakistan.

Keywords Cervical cancer, Human papilloma virus, HPV vaccination, Pap smear

Assessing The Effectiveness of Chatgpt In Delivering Cognitive Behavioral Therapy To Medical Students Of Islamabad And Rawalpindi Suffering From Anxiety

Name of Authors: Hafsa Masud, Aliha Arshad, Sara Abbasi, Syed Kashif Habib Bukhari

Supervisors: Dr Arshia Bilal, Dr M. Inzamam Khalil

Affiliation: Fazaia Medical College Islamabad

ABSTRACT

Introduction Anxiety is a common mental health concern among medical students, often impairing academic performance and overall well-being. Cognitive Behavioral Therapy (CBT) is an established treatment, and artificial intelligence (AI) chatbots such as Chat GPT may provide scalable delivery of CBT. This study aimed to assess the effectiveness of Chat GPT-delivered CBT in reducing anxiety among medical students in Islamabad and Rawalpindi.

Methodology A pre-post interventional study was conducted among medical students aged 18-25 years. Participants with Beck Anxiety Inventory (BAI) scores >7 was included. The intervention consisted of Chat GPT-based CBT sessions (four sessions per week, ≥10 minutes each) over four weeks, with orientation via Zoom/WhatsApp and screen-time monitoring. Data were analyzed using SPSS version 24. Frequencies and percentages were calculated, and the Mc Nemar-Bowker test was applied to compare pre- and post-intervention anxiety levels.

Results A total of 48 students were analyzed (mean age 21 years; 79.6% female; 95.9% from private medical colleges). Pre-intervention anxiety distribution was mild 33.3% (n=16), moderate 27.1% (n=13), and severe 39.6% (n=19). Post-intervention, anxiety decreased to mild 64.6% (n=31), moderate 14.6% (n=7), and severe 20.8% (n=10). The reduction in anxiety was statistically significant (Mc Nemar-Bowker $\chi^2 = 12.231$, $p = 0.007$).

Conclusion Chat GPT-delivered CBT significantly reduced anxiety levels among medical students. AI-based interventions hold promise as accessible, cost-effective tools for mental health support, though larger randomized trials are needed to validate long-term effectiveness.

Key words Anxiety, Cognitive Behavioral Therapy, Chat GPT, Medical Students, Artificial Intelligence.

Digitalization of Burn Management, a Quasi Experimental study conducted in Islamabad and Rawalpindi.

Name of Authors: Haseebullah Khan, Mamoona, Hina Adrees, Iqra
Supervisors: Dr Juwayria Omar, Dr Zaryab Haider
Affiliation: Fazaia Medical College

Introduction decision-making, patient care. However, their implementation, acceptance, integration in Pakistan's burn setting's remains unexplored. This study evaluated digital tool integration into routine healthcare by introducing a mobile application in burn units, assessing its impact on knowledge, digital comfort, decision support, patient care, and user acceptance/ perception, finding key factors for successful digital health adoption in routine practices, transitioning to technology-supported systems. Providing insight to whether digital tools can be standardized in Pakistan's healthcare system and highlight gaps for future integration.

Objectives Evaluate application's effectiveness in improving providers' knowledge, digital comfort, decision support and confidence; Assess perception and satisfaction with digital health; Explore adoption potential and limitations; Provide evidence for integrating digital technologies into hospital critical care units.

Methodology Conducted Quasi-experimental study (January to August 2025) in Burn Units of tertiary hospitals of Islamabad and Rawalpindi. N=35 healthcare professionals were purposively sampled, provided informed consent, received app (Burn Aid) on their devices. Conducted pre-and post-intervention assessments over two months, across five domains: Knowledge, Digital Comfort/Literacy, Decision support, Digital implementation and patient care, Perception/Acceptance. Analyzed data using SPSSv25 with descriptive statistics and paired t-tests.

Results Statistically significant improvements were observed in four domains: Knowledge increased (3.57 to 5.40, $p < .001$), Digital comfort/Literacy (3.91 to 9.66, $p < .001$), Decision Support (3.94 to 7.14, $p < .001$), Digital Implementation/ Patient care (1.66 to 6.43, $p < .001$). Perception and Acceptance of Digital Assistance, however, showed a significant inverse change (8.69 to 6.94, $p = .018$), indicating potential challenges in adaptation despite improved skills.

Conclusion Digital interventions significantly enhance knowledge, digital competencies, decision support and patient care in burn management. Yet, barriers to acceptance must be addressed to enable long-term digital integration in Pakistan's burn care units.

Keywords: Digital Health, Telemedicine, Clinical Decision support systems, eHealth, mHealth.

High-Fidelity Simulation versus Video-Based Learning for Medical Students in Cardiac Arrest Scenarios: A Quasi-Experimental Study

Name of Authors: M. Mueez Anjum, Rana Muhammad Moiz Naveed, Asra Azam, Maham Ajmal
Supervisors: Dr. Saleha Afridi, Dr. Armin Bilquis
Affiliation: Fazaia Medical College Islamabad

ABSTRACT

Introduction High-fidelity simulation (HFS) and video-based learning (VBL) are widely used in medical education. VBL is cost-effective and flexible, while HFS provides immersive, risk-free practice for emergency scenarios. This study compared the effectiveness of HFS and VBL in undergraduate training for cardiac arrest scenarios.

Methodology A quasi-experimental study was conducted at Fazaia Medical College and PAF Hospital Units I & II, Islamabad, involving 30 third year MBBS students divided into HFS and VBL groups. Baseline knowledge was assessed through questionnaires. Interventions included simulator-based CVS examination for HFS and standardized instructional video for VBL. Immediate post-tests measured knowledge, attitudes, confidence, satisfaction, and clinical skills. A second unannounced post-test after 2 weeks was conducted to assess knowledge retention and clinical performance by OSCE Checklist

Results Data was analyzed using SPSS version 23 with paired and independent t-tests ($p < 0.05$). Both groups improved knowledge significantly (HFS $p = 0.020$; VBL $p = 0.038$), with slightly higher scores in HFS ($p = 0.336$). Attitude ($p = 0.005$), confidence ($p = 0.031$), and clinical skills ($p = 0.005$) were significantly higher in HFS, while satisfaction showed no significant difference between groups ($p = 0.593$). At the 2-week follow-up, both groups retained knowledge; however, students in the HFS group sustained significantly higher confidence levels and superior bedside clinical performance compared to the VBL group.

Conclusion & recommendations

HFS demonstrated broader advantages than VBL, significantly enhancing knowledge, attitudes, confidence, and clinical skills. Undergraduate students cannot ethically practice directly on patients in emergencies; therefore, HFS should be adopted as a core teaching strategy, supplemented by VBL for reinforcement.

Keywords High-fidelity simulation (HFS); Video-based learning (VBL); Medical education; Cardiac arrest; Clinical skills; Knowledge retention.

Social Media Exposure and Its Relationship with Social Inequality Among Gen Alpha.

Name of Authors: Minahil Syed, Saba Humayun, M. Anas Tariq, Shaheer Haroon

Supervisor: Dr Mahwish Akhtar

Affiliation: Fazaia Medical College Islamabad

ABSTRACT

Introduction This study explores the relationship between internet usage, socioeconomic inequality, and their combined influence on mental health and overall well-being. The research is especially important in Pakistan due to the sharp socioeconomic divide between public and private schools, along with the growing availability of digital devices and internet exposure among youth. Understanding these differences allows parents, educators, and policymakers to recognize the emotional and mental effects of digital media use and emphasizes the importance of digital literacy for Generation Alpha.

Methodology This was a comparative cross-sectional study conducted at Islamabad Model School for Girls E-9 and Fazaia Inter College Islamabad. Data were collected through printed questionnaires administered at the respective sites. The questionnaire included four sections: sociodemographic details, the Short Mood and Feelings Questionnaire (SMFQ), the WHO-5 Well-Being Index, and the Bergen Social Media Addiction Scale. A non-probability convenient sampling method was used. Descriptive statistics were reported as frequencies and percentages, and analysis was conducted using SPSS version 25.

Results A significant association was found between socioeconomic status (SES) and time spent on social media per day ($p < 0.001$), as well as with the number of social media accounts owned ($p = 0.006$). Upper SES students demonstrated the highest proportion of excessive use (>3 hours/day, 42.9%). School type was also significantly associated with WHO-5 well-being scores ($p = 0.009$), with private school students showing poorer well-being compared to government school students. Cross-tabulation revealed that greater daily screen time correlated with lower WHO-5 scores and higher SMFQ depressive symptoms.

Conclusion & Recommendations This study concludes that socioeconomic status influences social media exposure and usage patterns among Generation Alpha in Pakistan. Excessive exposure negatively impacts emotional well-being and contributes to depressive symptoms. Key recommendations include implementing digital literacy programs in schools, establishing mental health screening and support systems, raising parental awareness regarding the psychological impact of prolonged use and to encourage healthy social media practices.

Keywords Generation Alpha; social media; Mental Health; Socioeconomic Status; Adolescents

Impact of Mentorship Program on Medical Students at Fazaia Medical College: An Analytical Cross-Sectional Study

Name of Authors: Jannat Tahir Awan, Muhammad Sharjeel, Mehsum Shahzad, Saqlain Yaseen

Supervisors: Prof Dr Rukhsana Khan, Dr Iffat Noreen

Affiliation: Fazaia Medical College Islamabad

ABSTRACT

Introduction Mentorship plays a vital role in medical education by supporting students' academic performance, personal growth, and psychosocial wellbeing. At Fazaia Medical College, a structured mentorship program was introduced in which senior students (primarily 4th-year MBBS students and interns) guided junior students (1st to 3rd year). This system aimed to provide academic support, career advice, and emotional guidance, though evidence from Pakistan remains limited.

Methodology A cross-sectional survey was conducted with 97 participants (49 mentors and 51 mentees). Structured questionnaires collected data on socio-demographics, academic performance, and psychosocial wellbeing. Data was analyzed using SPSS version 23, applying descriptive statistics and chi-square tests to assess associations.

Results Most mentors were 4th-year students (93.9%), while most mentees were in their 3rd year (45.1%). Overall, 88.2% of mentees reported improved academic performance and 72.5% noted better wellbeing. Most mentors (89.8%) expressed confidence in their role. However, chi-square tests showed no significant associations between mentor demographics and mentee outcomes, suggesting that perceived benefits were not statistically supported.

Conclusion & Recommendations The mentorship program was positively received, with students reporting academic and psychosocial gains. Despite the lack of statistically significant associations, the program demonstrates value in fostering student satisfaction and confidence. To enhance measurable outcomes, structured mentor training, institutional support, and dedicated mentorship time are recommended.

Keywords: Mentorship, Medical education, Academic performance, Psychosocial wellbeing, medical students, Pakistan

Comparative Study Of Burnout Among The Medical Students Of Twin Cities Following Traditional Vs Integrated Education Model

Name of Authors: Muhammad Inam Rabbani Awan, Muhammad Ammar Arshad, Alishba Ali, Hira Tariq

Supervisors: Dr Arshia Bilal, Dr M. Inzamam Khalil

Affiliation: Fazaia Medical College Islamabad

ABSTRACT

Introduction Burnout refers to depleted energy, exhaustion, mental fatigue, aversion to academic tasks, cognitive impairment, lack of interest in one's job, feelings of negativism or cynicism and reduced professional efficacy (WHO). Studies conducted in Italy, Brazil, Kazakhstan, Kathmandu and China have evaluated burnout among undergraduate students finding a high level of exhaustion and in Brazil prevalence is 65.1%. Present study was carried out to find out the type of education model with lower burnout levels and to inform the medical education providers and policy makers, to promote healthier educational models. Through this study, we wanted to determine the proportions of burnout in medical students of clinical years attending traditional curriculum or integrated curriculum and to assess the association of different education model with burnout.

Methodology An analytical cross-sectional study was conducted over 9 months (Jan-Sept 2025) with purposive sampling of 111 clinical-year students from medical colleges in Islamabad and Rawalpindi. Data were collected using a semi-structured questionnaire incorporating the Maslach Burnout Inventory-Student Survey (MBI-SS). Burnout was categorized into exhaustion, depersonalization, and personal achievement. Chi-square test was applied to assess associations, with significance set at $p < 0.05$.

Results The sample comprised 56 (50.5%) males and 55 (49.5%) females, mean age 23 ± 1.2 years. Moderate burnout was most frequent (45%), followed by high burnout. Comparison between curricula showed low burnout in 32.2% of integrated vs 26.9% of traditional students, and high burnout in 18.6% vs 32.7% respectively. Overall burnout differences were statistically insignificant ($p = 0.235$). However, depersonalization was significantly lower in students following integrated curriculum ($p = 0.029$). Personal achievement levels were comparable across groups ($p = 0.753$). Assessment type (subject-wise vs block-wise) showed no significant association with burnout ($p > 0.05$).

Conclusion & Recommendations Burnout remains a significant issue among clinical-year medical students, with moderate burnout being most prevalent. While overall burnout did not differ significantly, integrated curricula demonstrated a protective effect by reducing depersonalization. These findings highlight the importance of curriculum design in promoting student well-being. Future interventions should focus on integrated models coupled with psychosocial support and resilience-building strategies to mitigate burnout.

Keywords Burnout, Medical students, Curriculum, Depersonalization, Pakistan

EFFECT OF MENOPAUSE ON QUALITY OF LIFE OF WOMEN OF ISLAMABAD.

Name of Authors: Muhammad Ahmad Raza, Shafi Chishti, Anzela Aziz, Maham Riaz

Supervisors: Dr Juwayria Omar, Dr Zaryab Haider

Affiliation: Fazaia Medical College Islamabad

ABSTRACT

Introduction Menopause is associated with vasomotor, psychological, and musculoskeletal symptoms that impair daily functioning, social interaction, and overall quality of life. Despite its prevalence, menopause remains a taboo subject in many societies. Addressing its effects helps reduce stigma and encourage women to seek help.

Objectives Study aimed to identify common symptoms affecting quality of life, and coping mechanisms, evaluated hospital support, while comparing awareness regarding menopause management between working women and housewives.

Methodology Analytical cross-sectional study was conducted among 96 women with menopausal symptoms at the gynecology OPD/IPD of PAF Hospitals, Islamabad after consent. Sample was calculated using Survey Monkey system through purposive sampling. Data was collected using a structured questionnaire and Menopause-Specific Quality of Life (MENQOL) scale. Statistical analysis was carried out using SPSS version 23, descriptive statistics was done, and Chi-square test was used for inferential analysis.

Results Among 96 women (mean age 51.1 years), mostly married housewives commonly reported hot flushes, night sweats, mood swings, sleep problems, and weight gain. 70% experienced moderate to severe effects on daily and social life, with working women reporting added difficulties at work. Hospital support and counseling were rated poor, coping strategies included walking, diet changes, supplements, and family support. Notably, exercise ($p = 0.005$) family support ($p = 0.05$) and counseling ($p = 0.042$) were found to be statistically significant in improving coping.

Conclusion Menopause significantly affect physical, emotional, and social well-being, reducing quality of life. Awareness and supportive counseling are urgently needed.

Keywords Menopause; Vasomotor Symptoms; Coping Strategies

Development and evaluation of an AI-powered Cardiovascular System (CVS) learning chat bot for medical students of Fazaia medical college (FMC), Islamabad: a feasibility study

Name of Authors: Hajra Rizwan, Ishwa Zainab, Hafiz Mahad Noor, Mehrab Zara

Supervisors: Prof Dr Rukhsana Khan, Dr Iffat Noreen

Affiliation: Fazaia Medical College Islamabad

ABSTRACT

Introduction Artificial Intelligence (AI) has evolved into a transformative tool in medical education, particularly using chatbots that provide instant academic support¹. Despite global interest, limited research exists on integrating AI assisted platforms in undergraduate training in Pakistan².

Research shows that chatbots can enhance comprehension, retention, and application of medical knowledge in real time. To address this gap, a targeted CVS chatbot was **developed and introduced** to FMC students, assessing its academic impact.³ In future, we intend to scale up to overall medical education.

The primary objectives were to design, develop and introduce an AI powered CVS chatbot as a supplementary learning resource and evaluate its effectiveness against conventional learning methods. Specific goals included measuring information recall, conceptual understanding, assessment performance, and time efficiency. The study also assessed satisfaction and challenges.

Methodology This feasibility study was a non-randomized trial among FMC students. **110 participants** were recruited through stratified sampling across five years. Data were collected using a structured, pretested questionnaire and analytical analysis was done using chi square test via SPSS v23.

Results Outcomes revealed that 81% of participants actively used the chatbot, with over half reporting improvement in CVS knowledge. Significant associations existed between learning method and enhanced time efficiency ($p < 0.001$), recall ($p = 0.025$), and performance ($p = 0.021$). 67% were satisfied, with satisfaction positively linked to learning method ($p < 0.001$), conceptual understanding ($p = 0.002$), accuracy (0.002) and fewer technical issues (0.027). Overall, 78% reported increased confidence 74% found it easy to use, 62% easy to understand, 65% accurate, and 69% called it valuable complement to conventional study. Notably, 82% were willing to recommend it to fellow medical students.

Conclusion Our study concludes that AI-powered chatbots can enhance education by improving performance and efficiency. While well received, concerns regarding ethics, reduced interaction, and critical thinking remain. Structured integration with traditional methods is recommended. Future studies should involve diverse groups, expand beyond CVS, and assess long term effects on retention, critical thinking, and clinical skills.

Keywords Artificial Intelligence, AI Chatbot, Healthcare professionals, Large Language Models, Medical education, Training

The Correlation of Emotional Quotient (EQ) and Intelligence Quotient (IQ) on Psychological Well-Being among Undergraduate Medical Students

Name of Authors: Hania Jamshed, Ayesha Mehmood, Laiba Farooq, Areeba Yasin

Supervisors: Dr. Saleha Afridi, Dr. Armin Bilquis

Affiliation: Fazaia Medical College Islamabad

ABSTRACT

Introduction Emotional intelligence (EQ) and intelligence quotient (IQ) are important determinants of academic performance and psychological outcomes. However, limited research in the local context has examined their combined influence on the psychological well-being (PWB) of medical students. This study aimed to assess the relationship of EQ and IQ with PWB among students of Fazaia Medical College, Islamabad. Understanding these factors is crucial to develop interventions that support student well-being and academic success

Methodology An analytical cross-sectional study was conducted from February to September 2025. A total of 100 MBBS students (1st to final year) were selected through stratified random sampling. Data were collected using the Schutte Self-Report Emotional Intelligence Test (EQ), International Cognitive Ability Resource (ICAR) test (IQ), and Ryff's Psychological Well-Being Scale (PWB). Data were analyzed using SPSS v23 with descriptive statistics, Pearson's correlation, and multiple linear regression.

Results The mean EQ score was 117.66 (SD = 13.23), IQ score 3.6 (SD = 2.02), and PWB score 56.29 (SD = 7.96). Multiple linear regression showed that EQ had a significant positive effect on psychological well-being ($\beta = 0.302$, $p = 0.003$), whereas IQ had no significant impact ($p = 0.503$). A weak, non-significant positive correlation was observed between EQ and IQ ($r = 0.087$, $p = 0.382$). These findings indicate that emotional intelligence is a stronger predictor of psychological well-being than cognitive ability among medical students.

Conclusion & Recommendation Emotional intelligence plays a stronger role than cognitive ability in predicting psychological well-being among medical students, highlighting the need to integrate emotional intelligence development into medical education to enhance students' mental health, academic performance, and personal adjustment. Medical colleges should implement workshops and counseling programs to develop emotional skills such as self-awareness, empathy, and stress management, supporting students' psychological well-being and academic success.

Keywords Emotional Quotient, Intelligence Quotient, Psychological Well-being, Medical students, Emotional intelligence

Anxiety, Depression, And Quality Of Life In Women With Polycystic Ovarian Syndrome (PCOs) In Islamabad

Name of Authors: Abeeha Qamar, Ayesha Abid, Sadaf Naz, Umair Ramzan

Supervisors: Prof Dr Rukhsana Khan, Dr Iffat Noreen

Affiliation: Fazaia Medical College Islamabad

ABSTRACT

Introduction Polycystic ovary syndrome is one of the most common endocrine disorders among women of reproductive age, affecting 8-13% globally⁽¹⁾ and about 52% in Pakistan.⁽²⁾ Beyond menstrual irregularities, acne, infertility, and hirsutism, PCOS is strongly associated with anxiety, depression, and impaired quality of life (QoL)⁽³⁾. Despite its high prevalence, limited research in Pakistan has assessed the psychological and social implications of PCOS. This study aimed to evaluate anxiety, depression, and quality of life in women with PCOS in Islamabad.

Objectives The study also aimed to assess their overall quality of life using the HADS, WHO QoL, and a self-structured socio-demographic questionnaire, and to determine the association of socio-demographic variables with anxiety, depression, and QoL to identify significant psychological and clinical factors.

Methodology An analytical cross-sectional study was carried out from April to June 2025 at tertiary care hospitals in Islamabad. A purposive sample of 110 women aged 18-45 years, diagnosed with PCOS according to Rotterdam criteria, was included. Data were collected using the HADS, WHOQOL-BREF, and a self-structured sociodemographic questionnaire. Data were analyzed using SPSS version 27 with descriptive and inferential statistics, including Chi-square tests.

Results Among 110 participants, 39.1% had clinically significant anxiety, 21.8% were borderline abnormal, and 39.1% were normal. Depression levels showed 26.4% abnormal, 20.9% borderline, and 52.7% normal. QoL analysis revealed 46.4% rated their QoL as good/very good, 37.3% as moderate, and 16.4% as poor/very poor. No significant associations were found between psychological outcomes and demographic factors.

Conclusion PCOS significantly affects psychological well-being and quality of life. High rates of anxiety and depression highlight the need for early screening, lifestyle modification, counselling, and multidisciplinary care to improve outcomes and patient well-being.

Keywords Polycystic ovarian syndrome, anxiety, depression, quality of life, Islamabad, women.

Mapping Brain Rot Due To Cyber-Addiction Among Girls Of Govt. Graduate College Mohanpura.

Name of Authors: Sassi Khan, Aalia Batool, Aiman Zahra, Shahzadi Manayal Bakhtiyar

Supervisor: Dr Mahwish Akhtar

Affiliation: Fazaia Medical College

ABSTRACT

Introduction "Brain rot," a term describing the cognitive and psychological decline due to excessive digital consumption, is increasingly linked with cyber-addiction among young adults. In Pakistan, the prevalence of social media addiction is rising, posing risks to students' academic and emotional well-being. The objective is to map the cognitive and psychological effects of cyber-addiction ("brain rot") among female students of Government Graduate College for Women, Mohanpura, Rawalpindi.

Methodology An analytical cross-sectional study was conducted on 80 participants selected through convenience sampling. Data was collected using a semi-structured questionnaire incorporating the Social Media Addiction Scale (SMAS), Social Media Cognitive Fatigue Scale (CFS), Depression Anxiety Stress Scale (DASS-21), and Rosenberg Self-Esteem Scale (RSES). Data were analyzed using SPSS v25 through descriptive statistics, chi-square tests, cross-tabulations, and Pearson correlations.

Results The study found significant associations between compulsive social media use and negative outcomes, including sleep problems, cognitive fatigue, anxiety, stress, and low self-esteem ($p < 0.05$). Pearson correlation indicated a strong positive relationship between cyber-addiction and both anxiety and stress levels. Escapism, emotional exhaustion, and concentration difficulties were frequently reported, reflecting core symptoms of brain rot.

Conclusion & Recommendations Excessive social media engagement adversely impacts students' mental health, self-esteem, and academic productivity. Targeted awareness programs, digital literacy training, and preventive strategies are recommended to reduce the psychological risks of cyber-addiction. Future studies should include larger and more diverse samples from multiple institutions to improve generalizability. Longitudinal designs are recommended to establish. Comparative research including both male and female students can also highlight gender-specific patterns.

Keywords: Brain Rot, Cyber-Addiction, Cognitive Fatigue, Anxiety, Depression, Stress, Self-Esteem, Female Students, Digital Well-being.

Health Impacts of Floods in Pakistan – A Meta Analysis

Name of Authors: Maryam Abrar, Naiha, Reeba Younus, Laraib Nasir

Affiliation: Fazaia Ruth Pfau Medical College Karachi

ABSTRACT

Introduction Floods are the most frequent natural disasters in Pakistan, with catastrophic events in 2010 and 2022 displacing millions and disrupting health systems. Beyond immediate destruction, floods trigger epidemics of communicable diseases, worsen malnutrition, and compromise maternal and mental health. Despite recurring crises, evidence remains fragmented.

Methodology We conducted a systematic review and meta-analysis of observational studies and reports published between 2010-2025, following PRISMA guidelines. Databases searched included PubMed, Web of Science, Pak Medi Net, and Google Scholar. Studies reporting health outcomes among flood-affected populations in Pakistan were included. Data were extracted on infectious diseases, nutrition, maternal and child health, mental health, and mortality. Pooled prevalence estimates were generated using a random-effects model.

Results Twenty-seven studies ($n \approx 145,000$ participants) met inclusion criteria. Floods were consistently associated with high rates of infectious diseases: pooled prevalence of **diarrhea (44%, 95% CI: 38–51%)**, **malaria (19%, 95% CI: 14–25%)**, and acute respiratory infections (18–41%). Malnutrition in children under five reached **45% during 2010 floods** and **34% in 2022 floods**. Maternal health services were severely disrupted, with increased home deliveries and higher neonatal mortality. Mental health impacts included **PTSD (36–41%)** and depression (29–33%) among survivors. Mortality was substantial, with $\sim 1,985$ deaths in 2010 and $\sim 1,700$ in 2022, though indirect deaths were underreported.

Conclusion Floods in Pakistan impose profound and multifaceted health burdens, disproportionately affecting vulnerable populations. The recurrence of infectious disease outbreaks, malnutrition, and psychological trauma highlights systemic weaknesses in disaster preparedness. Strengthening health system resilience, integrating nutrition and mental health support into relief operations, and establishing robust disease surveillance are critical to reducing the health toll of future climate-driven floods.

Keywords Floods, Pakistan, Public health, Infectious diseases, Malnutrition, Mental health, Meta-analysis

Emotional Intelligence and Teaching Effectiveness: A Correlational Study among Medical Educators and Students

Name of Authors: Atta Raheem Azeem Mirza, Syed Hassan Ahmed Hashmi

Affiliation: Isra University Hyderabad Sindh

ABSTRACT

Introduction Emotional Intelligence (EI) has emerged as a key attribute influencing professional success, particularly in education. This study aimed to evaluate the correlation between teachers' EI levels and students' perceptions of teaching effectiveness across eight instructional domains. The rationale of our research is that teacher recruitment should consider not only academic performance but also emotional intelligence.

Objectives The Ultimate objective of our study is encouraged to hire them not only in their academic qualifications but their emotional intelligence as well which plays a significant role in student perception

Methodology A cross-sectional study was conducted involving 50 medical teachers and 500 students from public and private universities. Each teacher's EI was assessed using the ESCQ-45 questionnaire, and 10 students per teacher evaluated teaching effectiveness through a 16-item structured questionnaire. Domains assessed included communication skills, classroom management, support and understanding, feedback and evaluation, relation building, overall interaction, academic performance, and attendance. Data were analyzed using descriptive statistics, Pearson and Spearman correlations, and multivariate regression.

Results The mean EI score among teachers was 160.5 ± 18.7 . Female teachers and senior faculty (e.g., Professors) had higher average EI scores. Strong positive correlations were observed between EI and several teaching domains, particularly relation building ($r = 0.70$), support and understanding ($r = 0.68$), and overall interaction ($r = 0.65$), all $p < 0.001$. Attendance showed the weakest correlation ($r = 0.35$, $p = 0.015$). Teachers in the highest EI quartile consistently received the highest student ratings. However, multivariate analysis revealed that EI was not an independent predictor of communication skills when controlling for other variables.

Conclusion Teachers with higher EI are rated more positively, especially in supportive domains, underscoring its role in effective teaching and student engagement. Faculty development should integrate EI training to improve teacher-student relationships and teaching effectiveness.

Keywords Emotional intelligence, teaching effectiveness, medical education, teacher-student relationship, ESCQ-45, student perception

Influences on Medical Specialty Choice: A Gender-Based Analysis with Focus on Women's Challenges

Name of Author: Arhumna Nayyab, Fatima Shafiq

Affiliation: Watim medical college

ABSTRACT

Introduction Career specialization is a pivotal decision in the medical profession, shaped by a complex interplay of personal, social, economic, and cultural factors. Despite increasing gender parity in medical education, gender-based differences in specialty preferences persist globally and in Pakistan, often reinforced by societal expectations, institutional biases, and lifestyle considerations.

Objectives To identify and compare the factors influencing career and specialization choices among male and female doctors in twin cities.

Methodology The Study design was cross sectional. The Duration was 6 to 7 months. Sample size was 289 with 95% CL 5% margin of error with anticipated frequency 75% ⁽³⁾. Location of research is twin cities.

Result The research was conducted on doctors in which 70% were aged between 25-40 and 30% were aged between 40-60. Out of which 40% were male doctors and 60% were female doctors. The MBBS doctors were 40% and 60% are post graduate doctors. Gender norms influenced decision-making in over half of participants (56%), with 96% recognizing challenges faced by female doctors. Societal pressure to choose "gender-appropriate" specialties were the most frequently cited factor, reported by 32% of participants. Women were more likely to favor pediatrics, gynecology while men predominantly chose surgical fields. Nearly all respondents (98%) planned to pursue a specialty, with surgery (40%) and internal medicine (22%). The most influencing factor on decision the specialization is intrinsic factor for both male and female (78%). financial prospect averaging 37%. 70% of participants have access to mentorship while 30% do not have any access to mentorship. Family has profound effect on career choices with percentage of 50%. about 60% of them are confident in their choice of specialization while 20% are somewhat neutral. 65% think that insufficient resources are present while others think that sources are sufficient. 55% of them have experienced gender bias in training That to promote gender equality flexible work hours should be ensured. Work-life balance was a more influential factor for females, with 78% citing it compared to 52% of males.

Conclusion Career specialization in Pakistan is shaped by personal interest, lifestyle factors, and gender norms. Female doctors face added cultural and family pressures that limit career choices, highlighting the need for supportive policies, mentorship, and institutional reforms to promote equity.

Keywords Career specialization, medical doctors, Gender differences, Specialty choice, Mentorship, Work-life balance, Pakistan

An assessment of the association between respiratory health and duration of exposure to

traffic-related air pollution among taxi drivers of Rawalpindi: A Cross-Sectional Study

Name Of Author: M. Talha Farrukh

Affiliation: Foundation University Islamabad

ABSTRACT

Introduction Traffic Related Air Pollution is a critical public health hazard that causes millions of deaths every year. Traffic Pollution is a significant health concern especially for those who are exposed to it daily. Laborers, carpenters, and roadside barbers are more prone to getting lung disease, with the risk correlating with the duration of exposure to traffic pollution. However, limited research exists on the respiratory health of drivers, particularly concerning the association between exposure duration and respiratory symptoms. The rapid urbanization and growing traffic make it essential to address this knowledge gap.

Methodology The cross-sectional study was conducted, after receiving ethical provision, in the vicinity of the university for a duration of 6 months. The Sample size was calculated to be 116 from Open Epi software considering 300 as the total population of drivers in the university vicinity. Data was collected by interviewing the drivers with a standardized questionnaire of respiratory health and taking their peak flow rates using a Non-random, convenience sampling technique. Taxi drivers who worked part time, smoked, or had chronic respiratory disorders were excluded in the study. SPSS 21 was used for data analysis.

Results Among the 115 taxi drivers the mean age was 39.1 ± 12.34 years, mean expiratory flow rate was 433.5 L/min, and an average respiratory symptom score was 3.17. 55 (48%) participants reported at least one symptom. Spearman correlation analysis for the non-normal data showed a borderline correlation of hours spent driving per day and respiratory symptoms ($r = 0.181$, $p = .053$), while tenure of occupation showed no significant correlation ($r = 0.110$, $p = .247$). A linear regression analysis confirmed these patterns. However, in the subgroup aged below 40 ($n = 58$), the tenure of occupation emerged as a significant predictor ($p = 0.009$), with a yearly increase in the tenure resulting in the symptom score rising by $\beta = 0.341$.

Conclusions The number of symptoms in taxi drivers aged below 40 increases with an increase in the tenure of occupation, however such linear relation does not exist in older people.

KEYWORDS Occupational exposure, Traffic-related air pollution, taxi drivers

Handover Practices in Medical ICU In A Tertiary Care Hospital, Islamabad. Pakistan.

Name of Author: Dr. Sidra Tayyab.

Affiliation: Shaheed Zulfiqar Bhutto medical university Islamabad

ABSTRACT

Introduction Handover is defined as transfer of information, responsibility and accountability of a patient from one health care provider to another health care provider during shift change or from one department to another department or from ambulance to the hospital or between hospital⁽¹⁾. It is very crucial practice in patient care. Handover would be more crucial if performed high risk clinical setting. Miscommunication is one of the very serious adverse effects of handover⁽²⁾.

This is one of the major concerns of Developed countries; Effects of improper handover are reflected in their health system in terms of cost and patient load. The work on this domain requires serious attention so the safety of the patient cannot be jeopardized. According to the records in USA and Australia, miscommunication is one of the leading causes of preventable harm⁽³⁾.

The aim is to improve the handover practices at tertiary care hospitals. Objective is to observe the current handover practices among healthcare providers in Medical ICU and to explore the factors influencing the carrying out of handovers and its relation to patient safety and quality of care and to generate recommendations.

Methodology It was an exploratory, cross-sectional study which employed mixed methods at a tertiary care public sector hospital in Islamabad commencing in July,2023. A total of fifty handovers at different timings were observed (using observational checklist adapted from WHO standard (ISBAR) and international tool IPASS) and eighteen in-depth interviews were conducted (using interview topic guide) for handover sample include all the healthcare provider (doctor and nurses) who are working in the ICU for more than one month and who give consent for an in-depth interview. Data was analyzed manually (qualitative data using thematic analysis) as well as using SPSS version 26 (quantitative data).

Results Almost all (100%) handovers were performed at the bedside in the ICU, and everyone acknowledged the importance of handovers. During study a significant finding is indirect handover, with every fifth handover (19%) being performed that way. Few of the major barriers of effective handover include lack of appropriate number of bed provider ratio, communication between healthcare providers, and formal training in handover It was observed that there were many situational factors which created time constraints and distractions, and these issues negatively impacted handover in the ICU. A major consequence of inappropriate handover was potential patient safety hazard in such a health care setting relying on healthcare provider diligence.

It was also observed that handover practices varied with time of shift change and type of hcp, with nurses carrying out a more detailed and structured handover. Presence of tool make the handover more organized, but the nurse's handover was more detailed as of doctor detailed handover was seen during doctor's round. Several lapses in handover were observed during data collection.

Conclusion & recommendation The handover in ICU is very crucial for patient care and safety. Standardization of the handover is very important. Lack of staff and training are the major concerns. The handover should be standardized ideally by e-tool. Mandatory induction training. And 360 feedback incorporation.

KEYWORDS handover, clinical handover, handover in ICU. barriers, Patient safety, continuity of care. Healthcare providers

Effect of Artificial Intelligence-based coaching vs Certified lifestyle medicine coaches in improving Lifestyle behavior of medical students: A single-center, Randomized Controlled Trial

Name of Author: Aisha Habib Ahmed
Affiliation: Islamic International Medical College

ABSTRACT

Introduction Lifestyle medicine plays a crucial role in preventing and managing non-communicable diseases. Despite their knowledge in medicine, medical students often struggle with maintaining a healthy lifestyle due to academic stress and poor self-care habits. This study aimed to compare the effectiveness of Artificial-Intelligence-based coaching (Chat GPT) and human-led lifestyle coaching in improving the lifestyle behaviors of medical students with initially suboptimal lifestyle habits.

Methodology The study was conducted in two phases: an initial cross-sectional lifestyle assessment followed by a parallel-group, single-blinded randomized controlled trial.

Phase I: A Cross-Sectional assessment using *The Lifestyle Assessment Short Form* was forwarded to all the medical students from first to final year at Islamic International Medical College. Students identified as having suboptimal lifestyle behaviors based on their responses were included in phase II, a randomized controlled trial.

Phase II: Participants were randomly allocated into 3 groups: AI group: Received a one-time personalized lifestyle coaching session delivered via ChatGPT-3. Control group: Received a one-time, personalized lifestyle coaching session conducted by a certified lifestyle medicine coach.

Follow-up assessment was conducted 40 days later using the same *Lifestyle Assessment Short Form*. Additionally, the participants in the intervention group completed a *Patient Satisfaction Questionnaire (PSQ-18)* and the sessions were evaluated using a checklist developed by the research team to determine whether all the six pillars of lifestyle medicine were addressed.

Results A total of 45 students with suboptimal lifestyle behaviors (mean baseline health level 6.31 ± 1.40) were randomized equally into three groups (n=15 each). Overall level of health improved significantly in group A from 6.53 ± 1.30 to 8.13 ± 1.50 ($p=0.002$), with a modest but non-significant increase in Group B: 5.80 ± 1.82 to 6.87 ± 1.55 ; $p=0.135$ and no change in Group C (6.60 ± 1.05 to 6.53 ± 1.35 ; $p=0.887$) {ANOVA post-intervention $p=0.012$ }. **Sleep patterns** shifted favorably in Group A, with 73.3% averaging 7-8 hours post-intervention versus 33.3% at baseline; Group B saw modest gains, while Group C remained largely unchanged (post-intervention ANOVA $p=0.001$). **Daytime alertness** improved markedly in Group A (73.3% reporting “not at all” tired vs. 20.0% at baseline), compared to 20.0% in Group B and 13.3% in Group C ($p=0.001$).

In **nutrition**, Group A participants reporting no fast-food or sugary drink consumption rose from 6.7% to 53.3% ($p=0.007$), whereas changes in Groups B and C were minimal. **Fruit and vegetable intake** ≥ 4 servings increased to 40.0% in Group A (from 20.0%) but remained low in the other groups ($p=0.024$).

Exercise frequency and duration also improved most in Group A: those exercising ≥ 3 times/week grew from 20.0% to 80.0% ($p=0.048$), and sessions ≥ 30 minutes rose to 60.0% post-intervention ($p=0.022$); Groups B and C showed smaller, non-significant increases.

Finally, **mental health status** shifted from predominantly poor to good in 86.7% of Group A (versus 46.7% in Group B and 53.3% in Group C; $p=0.036$). These findings indicate that a single human-led coaching session produced the greatest immediate improvements across health, sleep, nutrition, exercise, and mental well-being, while AI coaching yielded moderate benefits.

Overall patient satisfaction was higher in Group A (92.5%) compared to Group B (67.6%). Pillar-wise coverage revealed that both groups addressed key health domains, but Human-led coaching was more effective in addressing domains like weight management (66.7% vs. 60.0%), mental health (60.0% vs. 26.7%) and substance abuse (60.0% vs. 25.7%).

Conclusion A single coaching session, whether Human-led or AI-driven, can positively influence short-term lifestyle awareness in medical students. While human coaching had greater impact and higher satisfaction, AI-based tools like Chat GPT offer a scalable alternative, especially in resource-limited settings.

Keywords Chat GPT, Sleep patterns, drink consumption

Breaking the Pain Barrier: Unravelling the Prevalence and Predictors of Acute Postoperative Pain

Name of Author: M. Ali Raza

Affiliation: Mohi-ud-din Islamic medical college Mirpur AJ&K

ABSTRACT

Introduction Acute postoperative pain (APP) is a major clinical challenge that can prolong recovery, increase healthcare burden, and negatively affect patient outcomes. In Pakistan, effective pain relief is often underutilized, highlighting the need for local data on its prevalence and predictors.

Objective To determine the prevalence and predictors of APP among surgical patients in a tertiary care hospital in Mirpur, AJ&K.

Methodology A cross-sectional study was conducted at Divisional Headquarters Hospital Mirpur, including 225 adult surgical patients recruited via consecutive sampling. Pain severity was assessed using the Numerical Rating Scale (NRS) within 24-48 hours post-surgery. Demographic, surgical, anesthesia, and analgesia-related variables were collected through interviews and chart reviews. Multivariate logistic regression was applied to identify predictors of severe APP (NRS ≥ 7).

Results The prevalence of moderate to severe APP was 72.9%, with 34.2% experiencing severe pain. Severe pain was significantly associated with female gender (OR=1.92, $p=0.041$), comorbidities (OR=2.14, $p=0.011$), abdominal surgery (OR=2.67, $p=0.007$), use of general anesthesia (OR=1.81, $p=0.042$), and absence of multimodal analgesia (OR=3.49, $p<0.001$). Patients receiving multimodal pain relief reported lower mean NRS scores compared to those on opioids alone or no

Conclusion APP remains highly prevalent in Pakistan, particularly among females, patients with comorbidities, abdominal surgeries, and those receiving general anesthesia without multimodal analgesia. Implementing standardized pain assessment tools and multimodal pain management protocols is essential to improve postoperative outcomes.

Keywords Postoperative pain, Multimodal analgesia, General anesthesia, Abdominal surgery, Pain management

Correlation Between BMI And Self- Esteem; Exploring Gender Differences

Name Of Authors: Aleesha Khalid, Alishba Ashfaq Awan

Affiliation: Watim Medical and Dental College

ABSTRACT

Introduction Self-esteem is the evaluation and power of acceptance one has in their life while facing life challenges ⁽¹⁾. The Maslow theory of self-esteem stated that it is basic human desire and inspiration to get accepted their self-image which leads towards self-actualization. Body mass index (BMI) is used to screen for macro-nutritional status, whether undernutrition, normal range, or overnutrition. Self-esteem and body image are vital components of psychological well-being, particularly during adolescence and early adulthood ⁽²⁾.

Objective To assess the relationship between BMI and self-esteem and explore the gender differences influence this dynamic, particularly in the context of societal and cultural pressures.

Methodology A cross-sectional study was conducted over six months (February-August 2025) in Rawalpindi using a convenience sample. Our sample size is 370 by using WHO calculator with 95% confidence interval and 5% margin of error with anticipated frequency of 50% **(3)**. Data was entered in SPSS version 26. Descriptive analysis was done, and p value was calculated by Pearson Chi Square Test.

Results The study revealed that most participants were in the overweight category (49.4%), followed by those with normal BMI (24.0%), obesity class I (15.9%), underweight (4.9%), obesity class II (1.7%), and obesity class III (0.3%). Correlation analysis revealed that BMI had a significant negative relationship with several self-esteem variables. BMI showed significant negative correlations with multiple self-esteem dimensions, including self-worth ($r = -0.39$), self-qualities ($r = -0.52$), self-abilities ($r = -0.49$), physical attractiveness ($r = -0.60$), and facial appearance satisfaction ($r = -0.59$). Overall, higher BMI was consistently associated with lower self-esteem, with the strongest effects in appearance-related domains and more pronounced impacts in females due to societal and cultural pressures.

Conclusion There is a significant negative correlation between BMI and self-esteem, especially among females. Gender acts as a moderating factor in this relationship, influenced by cultural, psychological, and social factors. These findings highlight the need for gender-sensitive interventions that promote body positivity and mental well-being.

Keywords BMI, Self-Esteem, Gender Differences

Toward Intelligent Cardiac Sensing: Advances in Wearable ECG, Lead Reduction, and Digital Twin Integration

Name of Author: Dr. Tauseef ur Rehman

Affiliation: School of Engineering computer sciences NUST

ABSTRACT

Introduction Advancements in wearable cardiac monitoring technologies have ushered in a new era of continuous and remote patient care. However, the diagnostic limitations of reduced-lead ECG devices remain a critical challenge, especially for high-risk conditions like myocardial infarction (MI) and arrhythmias. This review surveys recent innovations in wearable ECG systems, lead-reduction algorithms, and their convergence with AI-driven signal reconstruction. Emerging trends such as personalized digital twin models and cloud-based health intelligence systems are also explored for their transformative potential in preventive cardiology and athlete monitoring.

Methodology We synthesize insights from peer-reviewed literature (2018-2024), regulatory disclosures (e.g., FDA approvals), and open-source ECG datasets including PTB-XL and Physio Net archives. Emphasis is placed on: Signal compression and generative recovery using AI Lead selection strategies and information-preserving reductions Real-time edge processing architectures Calibration of 4D cardiac digital twins using ECG and imaging data

Results Studies demonstrate promising performance of 12-lead signal reconstruction from as few as 3-6 leads using generative models (GANs, transformers, diffusion). High-fidelity 4D heart meshes, though computationally intensive, are gaining traction in simulation environments and early clinical workflows. AI techniques are beginning to close the diagnostic gap between wearable and hospital-grade monitoring systems.

Conclusion & Recommendations Wearable cardiac sensing is rapidly evolving from basic arrhythmia detection toward full-scope diagnostics. A layered architecture that combines distributed on-body sensing, AI-based signal recovery, edge inference, and cloud-tethered digital twins, holds promise for next-generation cardiac prognostics. Future research should prioritize federated learning, privacy-preserving data fusion, and standards for synchronizing ECG with 3D/4D anatomical models.

Keywords Wearable ECG, Lead Reduction, Cardiac Digital Twin, Signal Reconstruction, Artificial Intelligence

The Relationship Between Thyroid Function in Mothers and Pregnancy Outcomes

Name of Authors: Tooba Yasir, Shahroom

Affiliation: Wah medical college

ABSTRACT

Introduction Thyroid dysfunction during pregnancy, encompassing conditions such as subclinical hypothyroidism and isolated hypothyroxinemia, is a critical yet often underdiagnosed condition with significant implications for maternal and neonatal health. These disorders disrupt the delicate hormonal balance required for optimal pregnancy outcomes, potentially leading to complications such as preterm delivery, fetal growth restriction, preeclampsia, and neonatal intensive care unit (NICU) admissions. Subclinical hypothyroidism, characterized by elevated thyroid-stimulating hormone (TSH) levels with normal free thyroxine (FT4), and isolated hypothyroxinemia, defined by low FT4 with normal TSH, are particularly insidious due to their subtle presentation, which can delay diagnosis and intervention. Despite growing evidence of their impact, routine screening for thyroid dysfunction in pregnancy remains inconsistent, contributing to preventable adverse outcomes. Understanding the association between maternal thyroid function and pregnancy complications is essential for developing evidence-based clinical guidelines to optimize maternal and fetal health. This study aims to address this gap by examining the relationship between maternal thyroid dysfunction and adverse pregnancy outcomes, with a focus on subclinical hypothyroidism and isolated hypothyroxinemia, to provide actionable insights for clinical management.

Objective The primary objective of this study is to evaluate the association between maternal thyroid dysfunction, specifically subclinical hypothyroidism and isolated hypothyroxinemia, and adverse pregnancy outcomes. By analyzing key maternal and neonatal outcomes, including preterm delivery, preeclampsia, small-for-gestational-age (SGA) births, and NICU admissions, the study seeks to highlight the clinical significance of these conditions and advocate for enhanced screening and management strategies during pregnancy.

Methodology This prospective cohort study enrolled 450 pregnant women attending prenatal care at a tertiary care hospital. Participants were categorized into three groups based on first-trimester thyroid function tests: normal thyroid function (n=300), subclinical hypothyroidism (n=80), and isolated hypothyroxinemia (n=70). Thyroid function was assessed by measuring serum levels of TSH, FT4, and thyroid peroxidase antibodies (TPOAb) during the first trimester (6-12 weeks of gestation). Subclinical hypothyroidism was defined as TSH levels above the upper limit of the reference range (≥ 4.0 mIU/L) with normal FT4, while isolated hypothyroxinemia was defined as FT4 levels below the reference range (< 0.8 ng/dL) with normal TSH. Exclusion criteria included overt thyroid disease, pre-existing chronic conditions (e.g., diabetes or hypertension), and multiple gestations to minimize confounding factors. Pregnancy outcomes were prospectively recorded, including preterm delivery (delivery before 37 weeks), preeclampsia (diagnosed per American College of Obstetricians and Gynecologists criteria), SGA births (birth weight < 10 th percentile for gestational age), and NICU admissions. Additional neonatal outcomes, such as Apgar scores at 1 and 5 minutes, were also collected. Data were analyzed using multivariate logistic regression to adjust for potential confounders, including maternal age, body mass index (BMI), parity, and smoking status. Statistical significance was set at $p < 0.05$, and odds ratios (OR) with 95% confidence intervals (CI) were calculated to quantify the strength of associations.

Results The study revealed significant associations between maternal thyroid dysfunction and adverse pregnancy outcomes. Women with subclinical hypothyroidism exhibited a higher incidence of preterm delivery (15% vs. 7% in the normal thyroid function group; OR 2.3, 95% CI 1.4-3.8, $p = 0.002$) and SGA births (20% vs. 8.5%; OR 2.7, 95% CI 1.6-4.5, $p < 0.001$) compared to those with normal thyroid function. Isolated hypothyroxinemia was associated with an increased rate of NICU admissions (15.5% vs. 6% in the normal group; OR 2.8, 95% CI 1.5-5.2, $p = 0.001$) and lower Apgar scores at 5 minutes (mean 7.8 vs. 8.5, $p = 0.01$). Both subclinical hypothyroidism and isolated hypothyroxinemia were linked to a higher risk of preeclampsia (12% and 10% vs. 5% in the normal group; OR 2.5, 95% CI 1.3-4.7, $p = 0.005$ for subclinical hypothyroidism; OR 2.1, 95% CI 1.1-4.0, $p = 0.03$ for isolated hypothyroxinemia). The presence of TPOAb positivity further amplified the risk of adverse outcomes in both groups, particularly for preeclampsia and SGA births. After adjusting for confounders, the associations remained statistically significant, underscoring the independent impact of thyroid dysfunction on pregnancy outcomes. No significant differences were observed in maternal age, BMI, or smoking status across groups, ensuring the robustness of the findings.

Conclusion This study demonstrates that maternal thyroid dysfunction, specifically subclinical hypothyroidism and isolated hypothyroxinemia, significantly increases the risk of adverse pregnancy outcomes, including preterm delivery, SGA births, preeclampsia, and NICU admissions. These findings highlight the critical need for routine thyroid function screening in early pregnancy to identify at-risk women and facilitate timely intervention. Early detection and management of thyroid dysfunction could mitigate complications, improving maternal and neonatal health outcomes. The study supports the integration of universal thyroid screening into prenatal care protocols and calls for further research to establish optimal treatment thresholds and strategies. By contributing to evidence-based recommendations, these findings advocate for a proactive approach to managing thyroid dysfunction in pregnancy to safeguard maternal and fetal well-being.

Keywords Apgar score, hypothyroidism, neonatal intensive care, preeclampsia, pregnancy outcomes, thyroid dysfunction, thyroid-stimulating hormone

Understanding Adult ADHD: The Role of Elements that Relieve or Intensify Symptoms

Name of Author: Maheen Dania
Affiliation: Fazaia Medical College Islamabad

ABSTRACT

Introduction Adult Attention-Deficit/Hyperactivity Disorder (ADHD) remains underrecognized in clinical practice. Beyond inattention and hyperactivity, symptoms fluctuate with stressors and coping mechanisms. Stress and criticism often intensify dysfunction, while creativity, interest-driven engagement, and structured support can mitigate impairment. Less discussed, but critical, are sensory and cognitive experiences such as auditory overload and persistent mental noise that shape daily functioning. This study examined these dynamics through young adults' lived experiences.

Methodology A qualitative multiple-case study design was applied using Yin's replication logic. Three young adults (aged 20-29 years) with self-reported ADHD symptomatology were purposively sampled. Exclusion criteria included child cases, substance-related ADHD, and medication-focused presentations. Data were collected through semi-structured interviews, symptom diaries, and mental state examinations. Thematic analysis proceeded in two stages: within-case and cross-case, supported by triangulation, memoing, and reflexivity.

Results Two domains emerged. **1). Aggravating elements:** All participants reported that stress and social criticism amplified symptoms. Two described auditory processing difficulties (e.g., mishearing phrases, difficulty decoding masked speech), while one uniquely reported a constant mental background noise that drained focus and energy. **2) Relieving elements:** Structured routines and affirmations were consistently protective. Creativity and interest-based activities were emphasized as critical relief strategies. Hyper focus, often regarded as problematic, was described as a strength when aligned with meaningful tasks. Participants also identified the "4Cs of Motivation" (Captivate, Create, Compete, Complete) as effective in transforming focus into productivity.

Conclusion & Recommendations Adult ADHD is shaped not only by neurocognitive deficits but also by stress, coping, and underrecognized sensory and motivational dynamics. Interventions should reduce stress triggers while harnessing creativity and productive hyper focus. Addressing sensory overload and mental noise may open new avenues for care, improving academic, social, and occupational outcomes.

Keywords Attention Deficit Disorder with Hyperactivity; Stress, Psychological; Coping; Adult; Qualitative Research

A comparative study; Analysis of conceptions vs non-conception cases in women with PCOS

Name of Author: Momina, Mubashir Ahmed.
Affiliation: Wateem Medical Dental College Rawat

ABSTRACT

Introduction Polycystic Ovary Syndrome (PCOS) is a prevalent endocrine disorder among women of reproductive age, often resulting in subfertility or infertility. With its rising incidence in Pakistan, understanding its impact on reproductive outcomes has become a critical public health priority.^{1,2} This study aimed to compare conception and non-conception outcomes in women diagnosed with PCOS and to identify factors associated with successful conception.

Methodology A cross-sectional analytical study was conducted over a period of 6-7 months, including 273 women with 95% confidence interval and 5% margin of error with anticipated frequency 42.2, aged 18-50 years diagnosed with PCOS. Participants were recruited from gynecology clinics and fertility centers in Islamabad and Rawalpindi. Data were collected through structured questionnaires focusing on reproductive history, medical treatment, and awareness of PCOS.³

Results Out of 273 participants, 59% had not conceived. A significant correlation was observed between menstrual irregularities due to PCOS and non-conception ($p < 0.01$). Only 32% of participants had received medical intervention for fertility, and 68% reported limited awareness about PCOS and its reproductive implications ($p < 0.05$). Family history ($p < 0.05$), age at diagnosis ($p < 0.05$), and lack of timely treatment ($p < 0.01$) were key contributors to reduced conception rates. Women who underwent ovulation induction or fertility treatments had higher chances of conception ($p < 0.01$).

Conclusion PCOS significantly affects reproductive outcomes, with conception influenced by menstrual health, early diagnosis, access to medical care, and awareness. Enhanced patient education, early intervention, and tailored fertility treatments are essential to improve reproductive outcomes in PCOS-affected women.

Keywords Polycystic ovarian syndrome, Conception, Non-conception, Fertility treatment, Awareness, Risk factors

The Future of Oral Health: Leveraging Tele dentistry to Address Dental Public Health Challenges

Name of Author: Memoona Niazi

Affiliation: School of Dentistry Shaheed Zulfiqar Ali Bhutto Islamabad

ABSTRACT

Introduction The research article highlights the major factors influencing the level of dental health of any area and how the innovations in tele dentistry can address these factors to improve the dental health status of the area. The research is in the domain of analytical epidemiology. The method used was a cross-sectional survey, and the need for tele dentistry was determined through a needs assessment research method.

Methodology A cross-sectional survey was conducted among 100 individuals. Respondents were categorized across six domains (as shown in the table). For each category, individuals reported whether they sought dental care and whether they perceived a need for tele dentistry interventions. The questionnaire is shared via the following link

https://docs.google.com/forms/d/e/1FAIpQLSdy99HLCFG1RcYfB9IezokU2x7901AziBwaNkRBTI_bUdOcpq/viewform?usp=dialog The major factors that determine the dental health status of the area and can be addressed by tele dentistry for improving the dental health of the demanding population were analyzed by this questionnaire.

Results The results of the survey delineate vulnerable subpopulations—particularly those with low socioeconomic status, residing in remote or war-affected zones, with limited local providers, or in poor health—who manifest both reduced access to dental care and are in need of tele dentistry to improve the dental health status of the population. Findings indicate that tele dentistry holds promise as a targeted strategy to reach socioeconomically disadvantaged, geographically isolated, or medically vulnerable groups—and those with low provider density—enhancing access to oral health services.

Conclusion and recommendations Policymakers and planners should consider leveraging tele dentistry modalities—such as synchronous video consultations, asynchronous store-and-forward diagnosis, and remote patient monitoring—to address identified gaps.

Keywords Dental health status, tele dentistry, need assessment

Sleep disorders and restless legs syndrome among patients on maintenance hemodialysis in Pakistan: a multicenter cross-Sectional Study

Name of Author: M. Ahmed Khalid

Affiliation: Rawalpindi Medical University

ABSTRACT

Introduction Sleep disturbances, such as insomnia, obstructive sleep apnea (OSA), and restless legs syndrome (RLS), are common but often overlooked conditions in patients receiving maintenance hemodialysis. These disorders have a profound effect on cardiovascular health, compliance with treatment, and quality of life, and while there is significant international data, the evidence from low-resource settings, especially South Asia, is limited.

Objective This study aims to determine the burden of insomnia, obstructive sleep apnea (OSA), and restless legs syndrome (RLS) in adults receiving maintenance hemodialysis in Pakistan during the 2025 study period and to determine predictor of each in this population.

Methodology

A multicenter, cross-sectional study was conducted from May 15, 2025, to August 30, 2025, involving 361 adult individuals receiving maintenance hemodialysis in four provinces of Pakistan. The patients completed the Athens Insomnia Scale, Berlin Questionnaire, and Restless Legs Syndrome Diagnostic Questionnaire. Data were collected by interviewing patients in Urdu. Logistic regression models were used to identify independent predictors for each sleep disorder.

Results In a group of 361 hemodialysis patients (median age 47 years, 59.6% male), insomnia was present in 63.2%, high-risk sleep apnea in 46.0% of patients, and restless legs syndrome (RLS) in 67.9% of patients. The strongest predictor of insomnia was having severe/very severe RLS (AOR 4.72, 95% CI 2.26-10.3, $p < 0.001$), followed by being overweight and older, respectively. Risk of sleep apnea was found to be independently associated with age, hypertension, diabetes, and being female with hypertension being most important factor (AOR 4.34, 95% CI 1.60 - 12.6, $p = 0.005$). For RLS hypnotic use the was strongest predictor (AOR, 3.93, 95% CI, 1.45-13.8 $p=0.015$). Greater than half of RLS cases identified during screening were moderate to severe; hypnotic usage and anticoagulant (anticoagulation medications) showed a significant association. Models demonstrated good discriminatory performance with area under the curve (AUC) values of 0.775 for insomnia, 0.726 for sleep apnea, and 0.669 for restless legs syndrome (RLS)

Conclusions Sleep disorders are prevalent and multifactorial in hemodialysis patients in Pakistan. Severe RLS is an independent contributor to insomnia, whilst cardiometabolic comorbidities are the major determinants of high risk for OSA. The screening of hemodialysis patients for sleep disorders should routinely take place using validated instruments and low-cost, context-specific interventions, such as education on sleep hygiene, exercise programs, and targeted therapeutic interventions. Timely interventions can reduce the clinical and psychosocial morbidity of sleeping disorders in patients on hemodialysis.

Keywords Hemodialysis patients; Insomnia; Restless legs syndrome; sleep disorders

Does Structured Teaching Improve Thyroid Awareness in Adolescent Females? A Pre- and Post-Intervention Study

Name of Author: Maimoona, Aarij Sohail Iqbal, Ahmed Rashid, Saad Waseem Butt, Mirza Ahmad Jamil
Affiliation: Army Medical College

ABSTRACT

Introduction Thyroid hormones regulate metabolism, protein synthesis, and neurodevelopment across most tissues. globally underdiagnosed, thyroid disorders pose heightened risks for women: iodine deficiency can increase infertility, pregnancy loss, and fetal developmental harm. although diet is vital for thyroid health, women often lack nutritional awareness and tailored guidance, with educational disparities further complicating prevention. this highlights the urgent need for targeted thyroid education and dietary support.

Objective this study aimed to evaluate adolescent females' baseline knowledge, awareness, and attitudes toward thyroid disorders, and to assess the effectiveness of a structured teaching program in promoting early detection and prevention

METHODOLOGY This interventional study was conducted in selected schools and colleges of Rawalpindi district among adolescent females using purposive sampling over five months (March July 2025). the sample size was 250 (95% ci, $\pm 5\%$ margin of error) calculated via Raosoft. pre- and post-intervention validated questionnaires measured program impact. data was analyzed using spss 27 (Wilcoxon test for non-normal data, $p < 0.01$) with descriptive statistics (median, iqr), and results were presented in tables and graphs. ethical approval and consent were obtained, excluding healthcare workers.

Results Baseline data showed only 60% used iodized salt. pre-intervention knowledge scores were low (median=7, iqr 3-9.75), improving post-intervention (median=13, iqr 12-13; $z=11.822$, $p < 0.001$). attitudes improved (pre: 21, post: 24; $z=9.831$, $p < 0.001$), and health-seeking behavior rose from 71.7% to 94.8%.

Conclusion the structured teaching program significantly enhanced adolescents' knowledge, attitudes, and health-seeking behaviors, demonstrating its role in early identification and prevention of thyroid disorders. further research could explore long term retention of knowledge and behavior change through follow up assessments. additionally, broader studies involving diverse age groups and regions are needed to enhance generalizability.

Key words Effectiveness, teaching program, adolescents, thyroid disorders

Physician's communication skills and physical appearance: a two-way perspective.

Name of Authors: Dua Fatima. Irtaza Safdar
Affiliation: Fazaia Ruth Pfau Medical College Karachi

ABSTRACT

Introduction The impact of physician communication skills and appearance on patient perceptions and knowledge acquisition is a critical area in medical education. Limited clarity exists on how students perceive physician communication and appearance, including potential gender differences, justifying this study.

Objective This study aimed to assess the consistency of medical students' perceptions of physician appearance and communication, explore gender differences, and evaluate changes with clinical exposure during training

Methodology A cross-sectional study was conducted among 493 MBBS students at FRPMC using a validated 10-item questionnaire on a 5-point Likert scale. Data were analyzed in SPSS v26, with Chi-square and non-parametric tests (Mann-Whitney U, Kruskal-Wallis H) to compare perceptions by gender and year of study.

Results Gender significantly influenced perceptions of consultation clarity ($p=0.032$) and formality of doctors' attire ($p=0.041$). Other aspects, including clarity in explaining conditions, patient involvement, empathy, and the comforting impact of appearance, showed no significant demographic differences. Total knowledge scores had a weak positive correlation with year of study ($p=0.226$) and a significant correlation with gender ($p=0.034$). Mann-Whitney U test confirmed differences in knowledge scores between genders ($U=26299$, $p=0.03$), while Kruskal-Wallis H test showed no differences across years ($p=0.272$).

Conclusion Females rated physicians' communication skills and appearance higher than males, while year of study had no effect, indicating perceptions are formed early and remain stable. Medical training should adopt gender-sensitive approaches and emphasize communication and professional appearance from the outset.

Keywords: Physician-Patient Relations, Professional Appearance, Communication, Medical Students, Cross-Sectional Studies

Mastering emotions: The critical link between emotional intelligence and anger control, a cross -sectional study at a private medical college

Name of Authors: Arifa Zafar. M. Nehal, Moarij Azeem
Affiliation: Foundation university School of Health Sciences

ABSTRACT

Introduction Anger management and emotional intelligence (EI) are similar concepts that both address the identification, control, and expression of emotions. Research shows that with greater EI, individuals are better at communicating, less stressed, and able to manage their anger responses. It is important to study them to be able to understand emotional regulation and its role in psychological well-being.

Objective To evaluate the relation between anger management and emotional intelligence.

Methodology Using stratified random sampling, 255 MBBS students were chosen for a six-month (January- June 2025) cross-sectional survey at Foundation University Medical College in Islamabad. Data were gathered using a standardized Google Forms survey, and SPSS v27 was used for analysis. Descriptive statistics, correlation tests, and t-tests were used, with a significance level of $p < .05$.

Results The mean scores for emotional intelligence and anger management were 37.50 ± 5.39 and 4.92 ± 1.57 , respectively, among 255 participants (mean age 21.16 ± 1.73 years; 65.1% female). Despite sufficient statistical power (0.998), no significant association between EI and anger control was discovered ($r = .010$, $p = .874$).

Conclusion Emotional intelligence and anger management were both at moderate to high levels in medical students, but the two were not significantly correlated with each other. The findings reiterate the importance of further studies on the contextual and cultural factors that affect emotional regulation.

Key words: emotional intelligence, anger control

Improving Health Outcomes in Older Adults: A Systematic Review of Integrated Geriatric Care Models

Name of Authors: Elaf Rehan. Safiya Jaffar Ali.
Affiliation: Batterjee medical college

ABSTRACT

Introduction As the global population ages, older adults often face multiple chronic conditions and functional decline that require complex care. Traditional hospital care may not fully meet their needs. Innovative approaches such as Comprehensive Geriatric Assessment (CGA), Hospital-at-Home (HaH), and Remote Monitoring (RM) have been developed to improve outcomes, reduce hospitalizations, and promote independence. This review summarizes current evidence on these integrated care models.

Methodology A systematic review of published literature from the last 10 years was conducted. Eligible studies included randomized controlled trials and high-quality observational studies involving adults aged ≥ 65 years. Interventions assessed were CGA, (HaH), and RM. Key outcomes included mortality, hospital readmissions, quality of life, and functional independence.

Results Comprehensive Geriatric Assessment (CGA): A meta-analysis of 23 randomized trials involving 9,477 participants reported that CGA did not significantly reduce overall mortality. However, subgroup analysis showed that older adults living alone who received CGA had a lower risk of 6-month mortality (RR 0.43, 95% CI 0.21-0.90; $P = 0.03$) [1] Hospital-at-Home (HaH): A systematic review of 9 randomized clinical trials ($n = 959$) found that HaH interventions reduced hospital readmissions by 26% compared to in-hospital care (RR 0.74; 95% CI 0.57–0.95) [2] Remote Monitoring (RM): A Cochrane review demonstrated that structured telephone support or non-invasive RM in older adults with heart failure significantly reduced all-cause mortality and hospitalizations. Effective strategies included patient self-management, educational modules, and video communication [3].

Conclusion & Recommendations Integrated care models—CGA, HaH, and RM—demonstrate clear benefits in improving outcomes for older adults, particularly in reducing readmissions, supporting independent living, and in some subgroups reducing mortality. Health systems should prioritize the adoption of these models to address the complex and growing needs of the ageing population.

Keywords Aged, Comprehensive Geriatric Assessment, Home Care Services, Hospital-Based, Telemedicine, Delivery of Health Care, Integrated.

Title: Bridging Innovation and Integration: AI in Early Dementia Detection for Primary Care

Name of Authors: Elaf Rehan, Safiya Jaffar Ali

Affiliation: Batterjee medical college

ABSTRACT

Introduction Early detection of cognitive decline is essential in geriatric medicine, as interventions are most effective when initiated during mild cognitive impairment (MCI). Conventional tools such as the Mini-Mental State Examination (MMSE), Montreal Cognitive Assessment (MoCA), and Saint Louis University Mental Status (SLUMS) are widely used but have limited sensitivity for detecting early-stage dementia and are influenced by educational and cultural factors. Artificial intelligence (AI) offers enhanced diagnostic accuracy by analyzing subtle behavioral and cognitive patterns, potentially enabling earlier detection and intervention. This study aimed to evaluate the effectiveness of an AI-assisted screening tool compared with conventional methods in primary care settings.

Methodology A cross-sectional study was conducted in three primary care clinics between January-December 2024. A total of 210 patients aged ≥ 65 years (mean age 74.8 ± 6.1 ; 58% female) without prior dementia diagnosis were recruited. Participants underwent MMSE, MoCA, and SLUMS, followed by an AI-assisted screening using a tablet-based application incorporating speech analysis, eye-tracking, and predictive modelling. Sensitivity, specificity, and time-to-completion were recorded. Statistical analysis was performed using SPSS v.27 with chi-square and paired t-tests.

Results The AI-assisted tool demonstrated higher sensitivity (88.5%) and specificity (83%) compared to MMSE (sensitivity 62.4%, specificity 75%), MoCA (sensitivity 74.2%, specificity 77%), and SLUMS (sensitivity 76.1%, specificity 79%) for detecting MCI and early dementia. Mean administration time was 5.2 ± 1.1 minutes for AI versus 11.4 ± 2.3 minutes for traditional tools ($p < 0.001$). AI screening results showed strong correlation with MoCA scores ($r = 0.90$, $p < 0.001$).

Conclusion & Recommendations AI-assisted cognitive screening in geriatric primary care offers superior sensitivity, faster administration, and scalability compared to conventional methods. Integration into routine primary care workflows, alongside traditional assessments, may improve early dementia detection rates. Further longitudinal studies are recommended to assess long-term predictive validity and cost-effectiveness.

Keywords Aged, Cognitive Dysfunction, Dementia, Artificial Intelligence and Primary Health Care.

Assessing the Gaps in Healthcare Delivery in Rural Sindh, Pakistan, A systemic review

Name of Authors: Khizra Fatima, Shagufta Abrar, Zafar H Tanveer,

Farzana Majeed and Kiran Fatima.

Affiliation: Multan Medical College

ABSTRACT

Introduction Access to quality healthcare remains a significant challenge in rural areas of Sindh, Pakistan, where geographical, socioeconomic, and healthcare system barriers hinder healthcare delivery. The rural population faces substantial difficulties in accessing essential healthcare services, resulting in poor health outcomes and increased mortality rates. Understanding these challenges is crucial for developing effective interventions to improve healthcare access and outcomes in these underserved areas. This study aims to provide a comprehensive overview of the challenges faced by patients in accessing healthcare services in rural Sindh.

Objectives The review seeks to answer the key challenges faced by patients in accessing healthcare services in rural Sindh, and strategies to be implemented to address these challenges in rural Sindh, Pakistan

Methodology A comprehensive literature search was conducted across multiple databases, including PubMed, Scopus, and Pak Medi Net by applying search terms keywords and Boolean operators (AND, OR NOT). Studies published in English language, focusing on rural areas of Sindh, Pakistan conducted in last 5 years were included. ALL of the retrieved records from each search into [a reference manager](#), [Endnote](#). Data was extracted in spread sheets. A total of 20 studies were reviewed, including qualitative, quantitative, and mixed-methods studies.

Results The review highlights significant challenges, including limited access to healthcare facilities, shortage of healthcare professionals, inadequate healthcare infrastructure, and socioeconomic barriers such as poverty and low education levels. Cultural barriers, including restrictive gender norms and limited autonomy, also play a crucial role. The review identifies potential solutions, including improving healthcare infrastructure, increasing the number of healthcare professionals, and promoting community-based initiatives.

Conclusion The findings emphasize the need for targeted interventions to address these challenges and improve access to healthcare services in rural Sindh. Policymakers, healthcare providers, and community leaders can use these findings to develop effective strategies to enhance healthcare access and outcomes.

Keywords Healthcare access, rural areas, Sindh, Pakistan, healthcare challenges, socioeconomic barriers, healthcare infrastructure, cultural barriers, community-based initiatives.

Nephroprotective Effects of Equisetum ramosissimum L. Ethanolic Extract Against Cisplatin-Induced Nephrotoxicity in Albino Rats: A Quasi-Experimental Study

Name of Authors: Mariyam Bachani, Mariyam Sikander.

Affiliation: Isra University

ABSTRACT

Introduction Cisplatin, a widely used chemotherapeutic agent, is associated with significant nephrotoxicity, limiting its clinical utility. Medicinal plants like Equisetum ramosissimum L. have been explored for their antioxidant and nephroprotective properties. This study aimed to evaluate the protective effects of E. ramosissimum ethanolic extract on cisplatin-induced renal damage in albino rats.

Methodology A quasi-experimental study was conducted at Isra University, Hyderabad, from February to July 2025, using 30 adult albino Wistar rats randomly divided into three equal groups. Group A served as the control. Group B received a single intraperitoneal dose of cisplatin (20 mg/kg). Group C received cisplatin followed by E. ramosissimum ethanolic extract (300 mg/kg/day orally) for seven days. Renal function was assessed via serum creatinine, blood urea nitrogen (BUN), and histopathological examination of renal tissue.

Results Group B exhibited significantly elevated serum creatinine (2.5 ± 0.3 mg/dL) and BUN (45 ± 5.2 mg/dL) compared to Group A (0.7 ± 0.1 mg/dL and 22 ± 3.4 mg/dL, respectively; $p < 0.001$). In contrast, Group C showed substantial improvement in renal markers (creatinine: 1.1 ± 0.2 mg/dL; BUN: 28 ± 4.1 mg/dL; $p < 0.01$ vs. Group B). Histological analysis confirmed reduced tubular necrosis and glomerular damage in Group C compared to Group B.

Conclusion Equisetum ramosissimum ethanolic extract demonstrated significant nephroprotective effects against cisplatin-induced nephrotoxicity in albino rats. These findings support its potential as an adjunctive therapy to mitigate cisplatin-associated renal injury.

Keywords Equisetum ramosissimum, nephrotoxicity, cisplatin, nephroprotection, herbal extract, albino rats

UNRAVELLING THE NEXUS: TUMOR-INFILTRATING LYMPHOCYTES, TUMOR STAGE, AND PD-L1 EXPRESSION IN COLORECTAL CARCINOMA

Name of Authors: Abdal Ahmad, Hamza Farooq

Affiliation: Peshawar Medical College

ABSTRACT

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.

Objectives To estimate the frequency of TILs and PD-L1 expression in CRC patients. 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 record with available archived tumor tissue samples. 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 increases 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.

COMPARISON OF PATIENT FLOW EFFICIENCY IN EMERGENCY DEPARTMENTS BETWEEN GOVERNMENT AND SEMI-GOVERNMENT HOSPITALS

Name of Authors: Muqadus Hussain, Muhammad Shahzaib Hamza, Muhammad Hassan Hamza, Dr. Inayat H. Thaver, Maria HanifAriba Hasan, Essa Ali Shah

Affiliation: Community health sciences, Bahria University Health Sciences, Karachi

ABSTRACT

Introduction Emergency Departments (EDs) play a key role in providing timely and quality care, but rising patient numbers, limited resources, and delays in workflow have caused overcrowding and longer waiting times. Factors such as triage design, staffing levels, and bed availability all affect how smoothly patients move through the ED (1). Previous approaches, including rapid assessment, doctor-led triage, and point-of-care testing, have shown promise in reducing delays (2,3). However, inefficient flow continues to impact patient safety, staff well-being, and overall healthcare costs. This study therefore focuses on identifying the main bottlenecks in patient flow, examining the link between waiting times, throughput, and satisfaction, and understanding why some patients leave without being seen. The goal is to suggest practical, evidence-based strategies that can improve ED efficiency and patient outcomes.

Methodology A cross-sectional study was conducted over 2-3 months using systematic sampling to recruit 323 patients aged 18 or older from the EDs of both hospitals. Data on wait times, length of stay (LOS), throughput rates, patient satisfaction, and leave-without-being-seen (LWBS) rates were collected using structured questionnaires and hospital records. Statistical analyses included descriptive statistics, ANOVA, Pearson correlation, and regression modeling.

Results The Government Hospital (GH) demonstrated shorter average wait times (mean = 3.94 minutes) but much longer LOS (mean = 195.46 minutes). Conversely, the Semi-Government Hospital (SG-H) showed longer wait times (mean = 9.74 minutes) yet a significantly shorter LOS (mean = 61.82 minutes). Throughput rate at G-H was stable (mean = 35.59 patients/hour), while SG-H had wide throughput variability (mean = 2.15 patients/hour), which correlated with longer wait times and LOS ($r = 0.854$, $p < 0.001$). Patient satisfaction was high in both hospitals, with SG-H reporting slightly higher scores. LWBS rates were notably low: 2.14% at G-H and 0% at SG-H.

Conclusion Government and semi-government hospitals face distinct challenges in managing ED flow. G-H offers rapid initial assessment but longer patient stays, suggesting structural bottlenecks. SG-H achieves shorter LOS but with greater throughput variability. Tailored interventions—such as improved workflow management, targeted resource allocation and enhanced communication—are required to optimize ED efficiency and sustain patient-centered care in both settings.

Keywords Emergency Department, Patient Flow, Public Hospital, Semi-Government Hospital, Karachi

Use of Personal Listening Devices and Frequency of Ear-Related Complaints Among Students of a Public Sector Medical College in Karachi

Name of Author: Omamah Awais.

Affiliation: Dow university of health science Karachi

ABSTRACT

Introduction The increase in use of personal listening devices (PLDs) like headphones and earphones, particularly by college students for both academic and recreational purposes, puts them at risk for developing different ear problems like ear pain, tinnitus, dizziness, hearing difficulty, itching, and wax impaction. This study aimed to estimate the frequency of these complaints and to identify any association with PLD use among the medical students, to help document a public health problem and create awareness regarding safe listening practices.

Methodology A cross-sectional study was conducted at Dow Medical College, Karachi. Data was collected through a self-structured questionnaire from 300 students who were selected using a random sampling technique. The data was analyzed using IBM SPSS version 24. Chi-square test was used to find any association, and a p-value of 0.05 was taken as significant.

Results All participants (100%) reported using personal listening devices. Itching (65.7%), ear pain (61%), and ear fullness (60%) were the most frequently reported complaints. The type of PLD was significantly associated with earwax impaction ($p=0.047$) and ear itching ($p=0.030$). The type of ear tip used demonstrated a relationship with vertigo ($p=0.026$). There was significant correlation between the duration of PLD use in years with ear fullness ($p=0.035$) and hearing difficulty ($p=0.012$), while daily usage hours correlated with boils, sores, and redness ($p=0.005$) and increased hearing sensitivity ($p=0.006$). The average listening volume was strongly associated with hearing difficulty ($p=0.010$), ear itching ($p=0.037$), earwax impaction ($p=0.012$) and ear fullness ($p=0.040$). PLD cleaning habits were significantly related to ear pain ($p=0.047$) and boils ($p=0.011$).

Conclusion and Recommendations This research found several significant associations between various aspects of PLD and ear problems. Students should be made aware of safe listening practices and volume limits, and regular ear examinations should be encouraged to prevent complications.

Keywords: Personal listening devices, ear complaints, medical students

Hematologic Inflammatory Ratios as Predictors of Early Treatment Response in Pulmonary Tuberculosis: A Prospective Analytical Study

Name of Authors: Ali Abdul Basit¹, Muhammad Usman¹
Affiliation: Rawalpindi Medical University, Rawalpindi, Pakistan.

ABSTRACT

Introduction Reliable biomarkers to predict treatment response in pulmonary tuberculosis (PTB) remain limited. Hematologic inflammatory ratios derived from complete blood counts may offer simple, cost-effective tools for monitoring treatment outcomes. This study aimed to evaluate the predictive utility of neutrophil-, monocyte-, and lymphocyte-based indices for early microbiological response in PTB patients.

Methodology A prospective analytical study was conducted at a tertiary care hospital, between February and December 2021. One hundred newly diagnosed, rifampicin-sensitive PTB patients aged 18-75 years were enrolled. Complete blood counts were performed at baseline and after two months of anti-tuberculosis treatment (ATT). Inflammatory ratios including neutrophil-to-lymphocyte ratio (NLR), monocyte-to-lymphocyte ratio (MLR), neutrophil-to-monocyte ratio (NMR), and systemic inflammatory response index (SIRI) were calculated. Treatment response was defined as sputum smear conversion to negative at two months. Multivariable logistic regression models (7-, 5-, and 3-predictor sets) were developed using LASSO selection, with discrimination assessed via ROC analysis and calibration tested by Hosmer-Lemeshow statistics.

Results Among 100 patients (median age: 32 years; 52% male), 81% achieved sputum conversion. Responders showed significantly greater reductions in NLR, MLR, NMR, and neutrophil counts, alongside increases in lymphocyte parameters (all $p < 0.05$). The 7-predictor model demonstrated the strongest discrimination (AUC = 0.867), good calibration ($p = 0.49$), and low prediction error (Brier score = 0.10). A simplified 3-predictor model (NLR, MLR, NMR) retained high discriminatory ability (AUC = 0.832) and accuracy (84%), offering clinical practicality. Decision curve analysis indicated the 7-predictor model provided the greatest net clinical benefit, though simpler models remained robust.

Conclusion Inflammatory cell ratios, particularly NLR, MLR, and NMR, are independent predictors of early treatment response in PTB. While comprehensive models maximize predictive performance, simplified ratio-based models offer accurate, low-cost tools for clinical practice.

Keywords Tuberculosis, Hematologic Biomarkers, Neutrophil-to-Lymphocyte Ratio, Treatment Response, Predictive Models.

Exploring Maternal Practices and Perspectives on Complementary and Alternative Medicine (CAM) Efficacy in Pediatric Health Care

Name of Authors: Hafiza Aimen Javaid, Mehreen Mukhtiar
Affiliation: Fazaia Ruth Pfau Medical College Karachi

ABSTRACT

Introduction The growing interest and practices of mothers towards Complementary and Alternative Medicine (CAM) have become a striking trend in pediatric health care. The rising predilection of CAM is driven by numerous factors e.g., cultural beliefs, lack of satisfaction with conventional treatment modalities and urge for individualized approaches for health care.

Objectives This study is carried out to explore the maternal practices and perspectives towards CAM in context to pediatric health care.

Methodology An analytical cross-sectional study was carried out at Pakistan Air Force (PAF) Base Faisal Hospital, Karachi. Study participants were approached in pediatric OPD. A Simple random sampling method was employed. Inferential statistics (chi square test, $p < 0.05$) were used to assess the association among outcome and predictor variables. Binary Logistic Regression test applied to assess the association between sociodemographic characteristics and practices of CAM.

Results A vast majority of mothers i.e., 81.10% were consuming CAM therapies in children. Seventy seven percent (77.95%) mothers inform pediatrician regarding the use of CAM in children. A significant association was observed between employment status ($p=0.002$), ethnicity ($p=0.004$), level of education ($p=0.042$), religion ($p=0.002$) with the maternal use of CAM in children.

Conclusion This study revealed a higher prevalence of CAM use among mothers in context with pediatric health care. The findings of this study provided a valuable insight for healthcare providers and pediatricians to better address the needs and preferences of mothers in promoting effective and safe healthcare practices related to CAM use for treating various ailments in children.

Evaluating APRI and FIB-4 as Predictors of Esophageal Varices and Bleeding in Liver Cirrhosis

Name of Author: Shafia
Affiliation: Isra University

ABSTRACT

Introduction Esophageal varices and gastrointestinal bleeding are major complications of liver cirrhosis. Non-invasive markers like the Aspartate Aminotransferase-to-Platelet Ratio Index (APRI) and Fibrosis-4 (FIB-4) index may aid in predicting varices and associated bleeding risk. This study aimed to assess the association between esophageal varices and bleeding in cirrhotic patients and evaluate the predictive utility of APRI and FIB-4 indices.

Methodology A cross-sectional study was conducted among adult patients (≥ 18 years) with a confirmed diagnosis of liver cirrhosis who underwent upper gastrointestinal endoscopy at a tertiary care center. Data were collected on demographics, etiology of cirrhosis, Child-Pugh class, MELD score, laboratory values (AST, ALT, platelet count), and outcomes including presence and grade of varices and history of upper gastrointestinal bleeding within 6 months. APRI and FIB-4 scores were calculated. Statistical analysis included chi-square tests for categorical variables, t-tests or Mann-Whitney U tests for continuous variables, and multivariate logistic regression to identify independent predictors of bleeding.

Results A total of 180 patients with liver cirrhosis were included, with a mean age of 52.6 ± 10.3 years; 62.2% were male. Esophageal varices were present in 124 patients (68.9%), of whom 48 (38.7%) had a documented history of upper gastrointestinal bleeding. The median APRI score was 1.92 (IQR: 1.21-3.16) in patients with bleeding versus 1.10 (IQR: 0.68-1.85) in those without bleeding ($p < 0.001$). Similarly, the median FIB-4 index was significantly higher in bleeding patients (5.74 [IQR: 3.90-8.60]) compared to non-bleeding patients (3.45 [IQR: 2.18-5.76], $p < 0.001$). Child-Pugh class C was more frequent in bleeding patients (54.2%) than in non-bleeding patients (23.8%) ($p = 0.002$). Multivariate logistic regression revealed that elevated APRI (AOR = 2.31; 95% CI: 1.25-4.26), FIB-4 index (AOR = 2.08; 95% CI: 1.12-3.85), and Child-Pugh class C (AOR = 2.67; 95% CI: 1.30-5.49) were independent predictors of variceal bleeding.

Conclusion Both APRI and FIB-4 indices demonstrated significant predictive value for identifying esophageal varices and bleeding risk in liver cirrhosis. These non-invasive markers may serve as useful screening tools to guide early endoscopic evaluation and intervention.

Keywords Esophageal varices, liver cirrhosis, gastrointestinal bleeding, APRI, FIB-4, non-invasive prediction, portal hypertension

Post Graduate Poster Presentations Abstracts

A Stakeholder-Informed Model to Improve School Food Environments in Urban Pakistan: Findings from Karachi to Promote Healthier Diets and Reduce NCD Risk

Name of Author: Maira Mubashar
Affiliation: Aga Khan University, Karachi

ABSTRACT

Introduction The health behaviors of adolescents are significantly influenced by their living environments, with schools serving as crucial settings for promoting healthy behaviors. The school food environment, encompassing areas where food is provided and consumed within and around schools, plays a key role in shaping adolescents' dietary choices. However, there is a notable scarcity of evidence regarding the school food environment in Pakistan. This study aims to examine the school food environment and associated factors, including the availability, accessibility, and affordability of foods within and around schools for adolescents, the facilitators and barriers school vendors face while offering healthy food options, and the perspective of policymakers on the role of food environments.

Objectives This study aimed to understand the food environment in and around low-resource schools in Karachi, Pakistan, and to gather insights from all key stakeholders to identify potential solutions for promoting healthier eating among students.

Methodology The study employed a concurrent mixed methods design, a cross-sectional survey with an interpretive descriptive qualitative approach. Six schools from District Central of Karachi were selected, including three government and three private institutions. The schools were purposively selected. The study focused on adolescents in grades 6 and 7. The quantitative component of the study included a sample size of 430 students, while for the qualitative phase, 14 FGDs were conducted with 95 students, 7 IDIs with school vendors, 5 IDIs with school principals, 5 FGDs with 21 teachers, 5 FGDs with 35 parents and 2 IDIs with policymakers was conducted to gather the data. The data was analyzed using Stata version 17 meanwhile qualitative data was manually analyzed using thematic analysis.

Results The findings revealed that the school food environment was largely unhealthy. Students reported using the canteen daily and primarily consuming processed and fried snacks with sugar-sweetened beverages daily due to affordability, convenience, and lack of healthier alternatives. Vendors reported a high demand for these options only. The interviews and discussions with 100+ relevant stakeholders informed the development of a model addressing both the demand and supply sides. On the demand side, educating children to make healthier choices, parents to encourage children at home, Teachers to model healthy behaviors at school, and introducing educational activities like nutrition days and school gardening. On the supply side, training of vendors to provide healthier options, principles to provide a platform, and policies in schools and among policymakers to act based on the local evidence.

Conclusion This stakeholder-informed model offers a practical, low-cost approach for improving nutrition in low-resource schools. By leveraging existing school staff, community members, and local vendors, it promotes healthy eating through education, policy enforcement, and affordable food supply changes. Its adaptability and minimal financial burden make it ideal for sustainable implementation in resource-constrained settings.

Keywords School food environment, Adolescents, Nutrition, Stakeholder perspectives, Healthy eating, Pakistan

Exploring Trends In Empathy Among Medical Students In Karachi: A Cross-Sectional Analysis

Name of Author: Ayesha Khalid, Ahmad Rasool, Khansa Saeed, M. Shahid Mahmood, Dr Asad Ali
Affiliation: Fazaia Ruth Pfau Medical College, Karachi

ABSTRACT

Introduction Empathy is crucial in medicine, improving patient communication and clinical outcomes. Concerns about declining empathy among medical students may impact future care quality. Most research is from Western contexts, leaving gaps in Pakistani data. This study examines empathy levels across academic years at a Karachi medical college to guide strategies for improvement.

Objectives Assess differences in empathy levels among students with varying clinical exposure, Examine gender differences in empathy levels., Explore empathy variations by specialty preference (technology-oriented vs. patient-oriented).

Methodology This cross-sectional study was conducted at Fazaia Ruth Pfau Medical College from April to August 2024. Of 500 eligible students, 445 completed the Jefferson Scale of Empathy (JSE) via Google Forms. Reliability was confirmed in a pilot study (Cronbach's alpha = 0.784). Data were analyzed using SPSS v22 with descriptive statistics and one-way ANOVA to compare empathy scores across academic years, gender, and specialty preferences.

Results Participants included 56% females; mean age was 21.4 years. The overall mean JSE-S score was 92.01 ± 13.42 (range: 20-140). Fifth-year students had the highest scores (94.81 ± 12.11), followed by fourth-year students, while second-year students had the lowest (89.15 ± 11.99). Female students scored higher (94.97 ± 13.72) than males (88.27 ± 12.08). No statistically significant differences were found between specialty preference groups ($p = 0.491$).

Conclusion Empathy levels in this private medical college were lower than reported in existing literature. Scores peaked in final-year students and were lowest in second-year students. Female students consistently scored higher, with no significant variation by specialty choice. Early, structured empathy training in medical education is recommended, and further research should investigate underlying causes and potential impacts on clinical care.

Keywords empathy, medical students, observational study, Pakistan, surveys and questionnaires

Attitudes and Barriers Towards Organ Donation Among Medical Students at Rawalpindi Medical University, Pakistan

Name of Author: Sara Azhar
Affiliation: Rawalpindi Medical University

ABSTRACT

Introduction Organ donation is the act of removing an organ or tissue from a donor and transplanting the said organ/tissue to a recipient. Despite being the only definitive treatment for end-organ failure, there is a lot of hesitation surrounding the practice of organ donation. Even among medical students, who are more aware of the benefits of organ donation than the public, this reluctance is widespread. Therefore, we conducted this research to determine the basis of this skepticism, so that the root causes can be identified and eradicated. Our research sought to ascertain the overall attitudes of Rawalpindi Medical University, Pakistan's students towards organ donation, the associated factors that influenced this attitude (religious devotion, gender, age, year of study) and the reasons for the hesitance.

Methodology A cross-sectional study targeting the students of first to final year MBBS was conducted at Rawalpindi Medical University, Pakistan in the year 2022. The sample size was calculated using Open Epi software and came out to be 292. The students enrolled at Rawalpindi Medical University during the year 2021-2022 were made a part of the study. A self-structured questionnaire that was developed after substantial research was used to collect the data using a non-random convenience sample technique. Chi Square test was used to determine significance after data analysis using SPSS-22.

Results A total of 290 students participated in the study, 58 from each year. All of the participants were Muslim. A very strong correlation was found between high devoutness and willingness towards organ donation ($p = 7.4252E-13$). Only 9/290 (3%) of people in Pakistan have joined The Transplantation Society of Pakistan; the main cause of this low ratio is that very few people were aware that such a group even existed (according to 62% of the responders). The mistrust of doctors and the belief that appropriate efforts would not be done to resuscitate patients who have signed up for organ donation is a significant factor in the anxiety surrounding organ donation.

Conclusions There are several reasons why people are reluctant to donate their organs, including a lack of understanding of religious perspectives on the subject, mistrust of medical professionals and medical administration, and public ignorance. We can make a significant progress toward closing the gap between the demand for and supply of organ donations if these problems are remedied. The most effective strategy to stop organ trafficking is through organ donation. Through seminars, conversations, and workshops, we need to raise awareness about organ donation.

Keywords Awareness (D001364); Knowledge (D019359); Medical students (D013337); Organ donation; Organ transplantation; Tissue and organ procurement (D009927); Willingness.

Use of Biosafety Protocols in Clinical Practice among Speech and Language Pathologists

Name of Author: Eisha Eman, Vaneeza Javed,
Affiliation: Riphah International University, Islamabad

ABSTRACT

Introduction Biosafety protocols are standardized set of policies and measures aimed to minimize the risk of getting exposure to infectious agents and intended at safeguarding the healthcare personnel as well as patients ⁽¹⁾. Since SLPs works in diverse settings its necessary for them to use biosafety protocols in their practice ⁽²⁾. This survey focuses to evaluate the use of biosafety protocols among SLPs and to impart directions for future awareness programs centered on regular implementation and adherence to biosafety protocols.

Objective To determine the use of bio safety protocols in clinical practice among Speech and Language Pathologists.

Methodology A cross-sectional survey was conducted from February 2025 to June 2025. Data was collected by using convenient sampling technique with a total sample size $n=169$ from the speech pathologist who are having more than one year's clinical experience. This study was carried out in two phases. In the first phase, a self-developed questionnaire was created, and content validity and reliability were assessed. First phase involved the questionnaire development up till pilot testing and second phase involved the survey execution. Data was then analyzed descriptively by using SPSS version 25.

Results The tool demonstrated good reliability, with an internal consistency score of $\alpha = 0.845$ and test-retest reliability was 0.91. The total sample size was $n=169$ out of which 13.6% males and 86.4% females. Results indicated that 71.6% SLPs maintain a clean and hygienic therapy environment, 73.5% SLPs wear PPE during therapy sessions, and 81.0% of SLPs wash their hands before therapy sessions, while 90% do so after the sessions. 74% SLPs use alcohol-based sanitizer when soap and water are not readily available, 75.8% SLPs regularly review and update Biosafety practice with new guidelines. Results showed that majority of SLPs were using bio safety protocols.

Conclusion The findings highlight that a majority of SLPs adhere to essential biosafety protocols during therapy. Overall, the study demonstrates strong compliance with hygiene practices and ongoing updates in line with current guidelines.

Keywords Biosafety, Protocols, Infectious Agents, Risks, SLPs, Hand hygiene, Personal Protective Equipment (PPE).

Ambu AuraGain vs. LMA supreme: Comparative oropharyngeal Leak pressure in surgical patients –A systematic Review and Meta-Analysis of Randomized Controlled trails

Name of Author: Shazmeen Sarfraz, (Ali Ebrahim), Tehzeeb Afzal, Ghaniya Rafi, Shujia Ehsan, Hassam Safdar Khan.
Affiliation: Quaid-e-Azam University, Islamabad

ABSTRACT

Introduction Second-generation supraglottic airway devices (SADs), such as Ambu® AuraGain™ and LMA® Supreme™, are widely used in surgical anesthesia due to their ease of insertion and enhanced safety profiles⁽¹⁾. Although both aim to optimize oropharyngeal leak pressure (OLP) and minimize aspiration risk⁽²⁾, consensus regarding their comparative effectiveness remains lacking.

Objective To compare Ambu AuraGain and LMA Supreme in terms of OLP and related clinical outcomes in adult surgical patients undergoing general anesthesia, through a systematic review and meta-analysis of RCTs

Methodology Following PRISMA 2020 guidelines, a systematic search of PubMed, PubMed Central, and ScienceDirect was conducted up to May 2025 that compared Ambu AuraGain and LMA Supreme in adult elective surgical patients. Studies with manikin models, non-RCT designs, or non-extractable OLP data were excluded. 5 RCTs comprising 544 patients (272 in each group) were included. Primary outcome was OLP; secondary outcomes included insertion success rate, ease and time of insertion, and postoperative complications. Data was extracted using Microsoft Excel. Meta-analysis was conducted using RevMan 5.4.1 under a random-effects model and heterogeneity was assessed with I². Risk of bias was assessed via Cochrane Rob 2.0 & visualized with ROBVIS⁽³⁾.

Results Ambu AuraGain showed higher OLP than LMA Supreme (MD = 3.24 cm H₂O; 95% CI: 1.29-5.19; I² = 79%; P = 0.001). Sensitivity analysis strengthened the effect (MD = 4.82; 95% CI: 4.00-5.64; I² = 0%). Conversely, LMA Supreme had easier insertion (RR = 0.63; 95% CI: 0.48-0.84), shorter insertion time (MD = 1.95 sec; 95% CI: 0.45-3.45), and fewer difficult insertions (RR = 2.97; 95% CI: 1.75-5.04). No significant differences were found in first-attempt success or postoperative complications.

Conclusion Ambu AuraGain offers better sealing, while LMA Supreme allows easier and faster insertion. Both are effective and safe; selection should align with procedural needs and clinician expertise. Further robust trials are warranted

Keywords Ambu AuraGain, LMA Supreme, airway management, supraglottic airway, oropharyngeal leak pressure, meta-analysis, ROBVIS

Comparative Impact Of Enhanced Recovery After Surgery (Eras) Protocol Versus Conventional Peri-Operative Care On Post-Operative Outcomes In Elective Colorectal Surgery

Name of Authors: Brig Farooq Dar, Dr Sidra Shabir, Squadron Leader Shahzad Akhter,
Affiliation: Department of Surgery, PAF Hospital, Islamabad

ABSTRACT

Introduction Colorectal surgery carries high morbidity, prolonged hospital stays, and increased healthcare costs, making standardized perioperative care essential. Enhanced Recovery after Surgery (ERAS) protocols, which combine preoperative counseling, optimized anesthesia, minimally invasive techniques, early mobilization, and nutritional support, have been shown internationally to reduce complications by 30-47%, shorten hospital stay by 2-3 days, and improve patient satisfaction. In Pakistan, however, colorectal surgeries are associated with 7-12-day hospital stays and complication rates above 25%, while evidence on ERAS implementation remains limited.

Objective To compare patient outcomes of post-operative pain scores, oral toleration, time to first flatus, mean hospital stay, complications and need for re-admission in patient undergoing elective colorectal surgery when optimized under the enhanced recovery after surgery (ERAS) protocol versus conventional non-ERAS approach

Methodology A total of 90 patients were divided into Group-A (n=45) receiving the ERAS protocol and Group-B (n=45) treated according to conventional protocol. Primary variables studied were post-operative complication graded according to the Clavien Dindo scoring system in the ERAS versus non-ERAS group, median pain scores, mean hospital stay and 30day mortality. Secondary variables studied were mean time to first oral feed, passing first flatus and time to first mobilization.

Results Severity of post-operative complications graded using the Clavien Dindo system showed post-operative complication both major and minor being 15.5% versus 42.2% (p<0.001). Median pain scores assessed post-operatively showed scores of 3.00 (1.00) versus 6.00 (1.00) at 12 hours (p<0.001), scores of 3.00 (1.00) versus 5.00 (1.00) at 24 hours (p<0.001) and scores of 2.00 (1.00) versus 4.00 (1.00) at 48 hours (p<0.001). Mean hospital stay was 5.310.63 days versus 8.510.89 days between both groups (p<0.001).

Conclusion adoption of the ERAS protocol resulted in improved patient outcomes with less complications, better pain scores, improved clinical outcomes and decreased mortality.

From Doubt To Diagnosis: Frequency Of Breast Lump Causes Uncovered By Ultrasound Guided Biopsy

Name of Authors: Dr Maheen Kaleem

Affiliation: Department of Surgery, PAF Hospital Islamabad.

ABSTRACT

Introduction Breast cancer is the leading cancer in women worldwide. Often asymptomatic until detected through screening, like a breast lump, nipple discharge, or changes in breast shape. Risk factors include old-age, smoking, late first pregnancy, low literacy, genetic mutations (BRCA1/2), and family history. The exact cause of a breast lump can range from benign tumors to malignant cancers. To assess the role of ultrasound guided biopsy in accurately diagnosing different causes of breast lump in female population.

Objectives To determine frequency of various causes of breast lumps using ultrasound guided biopsy in female population.

Methodology Study design: Descriptive observational study. Place and Duration of the study: Pakistan Air Force Hospital, Islamabad (July, 2024 - December, 2024)

Sample & Tools Data Analysis A total of 149 women with breast lumps were carefully examined. Targeted ultrasound of breast confirmed presence of the lump. An ultrasound guided biopsy specimen of the lump was taken for histopathological analysis to determine the nature of the lump. Data was analyzed using SPSS version 22.

Results In this study, 149 women with breast lump were included. Median age was 51.00 (15.00) years. Median BMI was 26.90 (8.20) kg/m². Median duration of having lump was 5.00 (6.50) weeks. Family history of breast malignancy was positive in 76 (51.01%) patients. The most common cause of breast lump found using ultrasound guided biopsy in present study was invasive ductal carcinoma which was found in 55 (36.91%) women followed by fibroadenoma in 30 (20.13%) and invasive lobular carcinoma in 19 (12.75%) women. Breast lump was caused by benign tumors in 63 (42.28%) women and malignant tumors in 86 (57.72%) women.

Conclusion Ultrasound-guided biopsy (USGB) is a transformative tool in the evaluation of breast lumps, providing reliable and accurate determination of underlying pathology, offering precision, safety, timely diagnosis, and patient management.

Keywords Breast, Breast Cancer, Causes, Frequency, Histopathology, Mammography, Ultrasound guided biopsy.

Case Report: Navigating through Evolutionary Terrain of Hearing - Cochlear Implants: Linking Technological Progress to Clinical Impact

Name of Authors: Tooba Javaid,

Affiliation: PAF Hospital, Islamabad

ABSTRACT

Introduction Cochlear implants (CI) have transformed auditory rehabilitation by directly stimulating the auditory nerve. Early implantation significantly enhances speech perception, language development, and overall quality of life in children with profound hearing loss.

Objective To highlight the clinical process and outcomes of early cochlear implantation in a child with bilateral profound sensorineural hearing loss.

Methodology A 3-year-old male child with bilateral profound sensorineural hearing loss underwent a 9-month hearing aid trial with limited benefit. Comprehensive preoperative workup included tympanometry, ASSR, BERA, HRCT and MRI of the temporal bone (CI protocols), baseline investigations, vaccinations (EPI and pneumococcal), and multidisciplinary evaluation by audiology, speech therapy, pediatrics, psychology, and anesthesiology teams.

Results On 30th September 2022, left-sided cochlear implantation was successfully performed, involving cortical mastoidectomy, posterior tympanotomy with cochleostomy, electrode insertion, implant fixation, telemetry testing, and radiographic confirmation of electrode placement. The postoperative course was uneventful. Device activation followed by structured mapping and speech therapy showed progressive auditory awareness and improved speech production during follow-up.

Conclusion Early cochlear implantation is a safe and effective intervention for pediatric profound hearing loss. Thorough preoperative assessment, surgical expertise, and multidisciplinary follow-up are key to achieving optimal outcomes.

Keywords Cochlear implant, Profound hearing loss, Pediatric audiology, Early intervention, Speech rehabilitation, Pakistan

Conventional Excisional Hemorrhoidectomy Versus Hemorrhoidal Artery Ligation With Recto Anal Repair: A Comparative Analysis Of Postoperative Recovery And Outcomes

Name of Authors: Sqd / Ldr Dr Shehzad Akhtar, Dr Sidra Shabbir, Brig Dr Farooq Dar (R), Dr Hareem Waq,
Affiliation: PAF Hospital Islamabad

ABSTRACT

Introduction Hemorrhoidal disease globally affects around 50-85% of the population. Conventional surgical approaches to its treatment, including hemorrhoidectomy have largely been replaced by newer techniques, such as stapled hemorrhoidectomy, hemorrhoidal artery ligation with recto anal repair (HAL-RAR), to name a few. Literature shows that fewer studies have been performed that compare outcomes between conventional excisional approach and HAL-RAR. Our study aims to bridge this gap by comparing patient-related outcomes between both methods.

Objectives This study aims to compare patient outcomes; post-procedure pain scores, time to mobilization, discharge, and frequency of complications, between conventional excisional hemorrhoidectomy and novel hemorrhoidal artery ligation with recto anal repair (HAL-RAR).

Methodology A total of 160 patients undergoing surgical treatment for hemorrhoidectomy at PAF Hospital Islamabad were included. Group A (n=80) to undergo HAL-RAR procedure and Group B (n=80) to undergo conventional excisional hemorrhoidectomy procedure. Primary variables were median pain scores assessed 12 hourly for 24 hours and then followed up after 4, 8 and 12 weeks. Secondary variables were time for first mobilization, time to discharge after pain free and total analgesia used in the first 24 hours and post-operative complications.

Results Median pain scores assessed post-procedure in patients showed median values between Group-A and Group-B of 3.00 (1.00) versus 3.00 (1.00) 12 hours after the procedure ($p<0.001$), pain scores of 2.00 (1.00) versus 5.00 (1.00) 24 hours after the procedure ($p<0.001$), pain scores of 3.00 (0.00) versus 4.00 (1.00) 4 weeks after the procedure ($p<0.001$), pain scores of 2.00 (1.00) versus 3.00 (1.00) 8 weeks after the procedure ($p<0.001$) and pain scores of 1.00 (1.00) versus 2.00 (1.00) 12 weeks after the procedure ($p<0.001$).

Conclusion We conclude that HAL-RAR procedure is associated with better pain relief, lower pain scores, early mobilization and discharge with a clinically favorable complication profile than the conventional method.

Keywords Hemorrhoidal disease, Hemorrhoidectomy, Hemorrhoidal artery ligation, Recto anal repair (HAL-RAR), Postoperative outcomes, Pain scores, Pakistan

Post-Op Fess Complication: Pre-Septal Orbital Cellulitis

Name of Authors: Noor ul Huda.
Affiliation: PAF hospital Islamabad

ABSTRACT

Introduction Recurrent ethmoidal polyposis, often associated with allergic rhinosinusitis, poses significant therapeutic challenges due to its tendency to recur even after surgical intervention. Comorbid conditions such as asthma, allergic rhinitis, hypertension, and diabetes further complicate management and increase perioperative risks.

Objective To report a challenging case of recurrent bilateral ethmoidal polyposis complicated by systemic comorbidities and highlight the role of individualized multidisciplinary management.

Methodology A 46-year-old female with a four-year history of progressive nasal obstruction, rhinorrhea, postnasal drip, sneezing, and anosmia was evaluated. The patient had comorbid asthma, allergic rhinitis, hypertension, and diabetes mellitus. She had previously undergone Functional Endoscopic Sinus Surgery (FESS), but symptoms recurred. Imaging revealed extensive sinus opacification with bone remodeling and a double density sign consistent with allergic rhinosinusitis. Preoperative evaluation showed hypercoagulability, uncontrolled glycemia, and mild lymphopenia, which were optimized prior to surgery.

Results Revision FESS was performed. The postoperative course was complicated by transient pre-septal cellulitis due to orbital air entrapment, which was managed conservatively. Long-term management included intranasal corticosteroids, lifestyle modifications, and patient education.

Conclusion Recurrent bilateral ethmoidal polyposis in the presence of systemic comorbidities presents multifactorial challenges. Successful management requires perioperative optimization, vigilant monitoring, and a multidisciplinary approach to reduce complications and improve quality of life.

Keywords Recurrent bilateral ethmoidal polyposis, Functional Endoscopic Sinus Surgery (FESS), Orbital complication, Chronic rhinosinusitis, Multidisciplinary care

Association Between Alcohol Use Disorder and Ischemic Colitis: A Case-Control Study in Pakistani Patients

Name of Authors: Maryam Bukhari & Tajali Noor

Affiliation: Mohiuddin Medical College

ABSTRACT

Introduction Ischemic colitis (IC) represents a gastrointestinal condition which develops when reduced blood flow affects the colon leading to colon tissue inflammation and damage. Research shows alcohol use disorder as a possible risk factor for vascular diseases though its influence on the development of ischemic colitis remains unknown. Researchers aim to investigate how alcohol use disorder relates to ischemic colitis among Pakistani individuals.

Methodology A case-control hospital-based study was conducted in different hospital settings in Pakistan. The research involved hundred participants diagnosed with IC as well as hundred participants who had similar demographics but lacked ischemic colitis. A standardized set of questionnaires gathered information about demographic characteristics in combination with comorbidities, smoking behavior, alcohol use patterns and diet. The evaluation of AUD used the Alcohol Use Disorders Identification Test (AUDIT). Logistic regression analysis with smoking, body mass index (BMI), diabetes and hypertension as control variables evaluated the associated between IC and AUD.

Results The prevalence of AUD was 20% in IC case subjects yet 14% in comparison participants though this difference proved statistically insignificant with a p value of 0.12. The analysis revealed that AUD alone showed no correlation with IC since the adjusted odds ratio equaled 1.3 with 95% confidence interval from 0.7 to 2.2 and a p value of 0.24. The analysis revealed smoking as a significant risk element for the development of IC (a OR = 1.9, 95% CI: 1.1-3.1, p = 0.02). BMI and diabetes with hypertension displayed no meaningful relationships with ischemic colitis.

Conclusion AUD proved not to act as an independent factor for IC when confounders were accounted for throughout the analysis. The study revealed smoking behavior as the primary cause that leads to IC. More extensive prospective research is required to investigate how smoking and alcohol usage jointly create risks for developing IC.

Keywords Ischemic colitis, alcohol use disorder, case-control study, smoking, Pakistan

Awareness and Knowledge about Oral Cancer in Adult Patients visiting

Name of Authors: Dr. Tayyaba Akram, Dr. Wania Baig

Affiliation: School of Dentistry (SZABMU), Islamabad

ABSTRACT

Introduction Oral cancer, mainly squamous cell carcinoma, is a major global health issue. In developing countries, limited awareness delays diagnosis. Smoking, alcohol, and betel nut are leading risks.

Objective To assess oral cancer knowledge and explore differences across demographics.

Methodology Cross-sectional study at School of Dentistry, Islamabad. 333 patients, recruited by non-probability consecutive sampling (Open Epi). Adults >18 years, either gender; excluded if unable to consent or with disabilities. Validated questionnaire (adapted from Italy) recorded demographics and awareness. Consent obtained; forms explained in local language if needed. SPSS v.22 used. Qualitative variables as percentages, quantitative as mean \pm SD. Chi-square applied; p < 0.05 significant.

Results Of 333 participants (158 males, 174 females; mean age 30.4 ± 10.8), 44.7% were unemployed, 40.2% employed, 15% self-employed. Most were single (62.5%), 80.2% had higher education. Only 43.8% were aware of oral cancer, mainly via media (47.1%) and family/friends (18.9%). Smoking (81.4%) was most recognized risk, followed by betel nut/pan (50.5%), alcohol (44.1%), sunlight (26.7%); 19.2% wrongly cited amalgam fillings. Associations showed females, middle class, and educated were more knowledgeable. Singles more often linked alcohol and sunlight, while prior cancer experience increased recognition of sunlight. Despite men being more often employed, women displayed greater awareness, suggesting employment does not guarantee knowledge.

Conclusion & Recommendations Oral cancer awareness was low. Strengthening education, targeted screening, and risk avoidance campaigns are essential. Early detection and lifestyle changes can significantly improve survival.

Keywords Awareness, Oral Cancer, Risk Factors, Early diagnosis

The Evolving Role of AI in Healthcare: Brain Tumor Detection using Deep Learning with Explainable AI in MRI Images

Name of Authors: Shahzeb Jawwad

Affiliation: PAF Hospital

ABSTRACT

Introduction Healthcare is rapidly adopting artificial intelligence (AI) to augment diagnosis, triage, and care coordination - especially in medical imaging.

Objectives Develop and evaluate an explainable deep-learning pipeline for brain tumor detection on MRI, and summarize how this approach illustrates AI's broader impact on healthcare quality, speed, and safety.

Methodology (AI Pipeline) Two multi-source MRI datasets of brain scans (4 classes: glioma, meningioma, pituitary, normal). Improved DenseNet121 via transfer learning + selective fine-tuning. 12 CNN baselines and 5 SOTA architectures trained under matched conditions. Grad-CAM++ overlays to localize contributing regions for each prediction.

Results The DenseNet121-based classifier achieved near state-of-the-art performance while providing transparent heatmap visualizations. This combination of accuracy and interpretability highlights the value of explainable AI in clinical imaging.

Conclusion An explainable DenseNet121-based MRI classifier demonstrates near-state-of-the-art accuracy with transparent heatmap rationales, exemplifying how AI can accelerate diagnostics, improve consistency, and enhance clinician trust. With rigorous validation and explainability, AI can safely scale diagnostic excellence and elevate patient outcomes across healthcare settings.

Keywords Artificial intelligence, Brain tumor detection, Deep learning, MRI, Explainable AI, Healthcare diagnostics

Knowledge And Attitude of Health Care Professionals Towards Menopause Hormone Therapy

Name of Authors: Shafaq Fatimah

Affiliation: KRL Hospital Islamabad

ABSTRACT

Objectives The aim of the present study was to understand knowledge, attitudes, and practices of health care professionals towards menopause hormone therapy so that we can identify existing gaps, raise awareness and implement better management.

Methodology This is a prospective, cross sectional descriptive study conducted among health care professionals at krl hospital and Shifa college of medicine, Islamabad. The study period was 3 months after approval from ethical committee. The sample size came out to be 78. The tool is self-administered Questionnaire. The questionnaire is divided into 3 sections i.e., Demographic details, HPs' Self-reported knowledge regarding menopause, HPs' attitude to menopause management with multiple-choice, yes/no, and open-ended questions Completion and return of the questionnaire indicated HPs' consent for participation in this study. The data was analyzed using SPSS 23.

Results

A total of 78 responses were recorded. Sixteen (20.5%) responses were from male while 62 (69.5%) responses were from female healthcare professionals.

Speciality	Frequency (%)
Anesthesia	3 (3.8%)
Gastroenterology	1 (1.3%)
Gynecology	41 (52.4%)
Medicine	6 (7.7%)
Pediatrics	9 (11.5%)
Psychiatry	2 (2.6%)
Surgery	1 (1.3%)

Conclusion Better education about menopause and its management for healthcare providers is needed regarding the long-term risks associated with menopause and the role of HRT so that physician can take health decisions, which may result in improvement in quality of life of these women.

Occupational Exposure to Chemicals And Cardiovascular Risks Among Healthcare Workers –Evaluating The Impact Of Hospital-Based Chemical Exposure On Heart Health

Name of Authors: Aqib Dil Awaiz, Shakila Irtaza, Shaikh Khalid Muhammad, Zainab Shah ⁴, Asfand Yar Khaliq ⁵, Asjed Khan Jadoon ⁵, Tanveer Ahmed Ansari, Sana Ilyas.

Affiliation: New life institute of Nursing Multan HEC

ABSTRACT

Introduction Occupational exposure to hazardous chemicals in healthcare settings poses a significant, yet often under recognized, threat to cardiovascular health. (Karamova, Valeeva et al. 2021) Despite increasing global attention to occupational health, evidence linking chemical exposure to cardiovascular risk among healthcare professionals remains limited, particularly in resource-constrained countries. (Pan, Li et al. 2024)

Objective To evaluate the impact of hospital-based chemical exposure on cardiovascular risk among healthcare workers in tertiary care hospitals in Punjab, Pakistan.

Methodology This cross-sectional study was conducted over eight months (July 2024 to February 2025) in tertiary care hospitals located in Lahore, Rawalpindi, Faisalabad, and Multan. A total of 450 healthcare workers were selected using stratified random sampling. Participants were categorized into low, moderate, and high chemical exposure groups based on job roles and department-specific chemical usage. Cardiovascular risk was assessed using the Framingham Risk Score (FRS), blood pressure measurements, lipid profiles, fasting glucose, and ECG evaluations. (Sun, Wang et al. 2022) Data were analyzed using SPSS version 26.0. One-way ANOVA and multivariate regression were applied to determine associations between exposure levels and cardiovascular risk markers.

Results FRS scores increased with exposure level, from 6.8 ± 2.1 in the low group to 12.3 ± 3.5 in the high exposure group ($p < 0.001$). Significant elevations in systolic and diastolic blood pressure, LDL cholesterol, and fasting glucose were observed in high exposure participants. Multivariate analysis confirmed chemical exposure as an independent predictor of elevated cardiovascular risk ($\beta = 0.37$, $p < 0.001$).

Conclusion Healthcare workers exposed to hospital-based chemicals are at a heightened risk of cardiovascular disease. These findings highlight the need for proactive occupational health policies and cardiovascular risk screening in healthcare settings.

Keywords Cardiovascular Diseases, Chemical Exposure, Cross-Sectional Studies, Healthcare Workers, Hospital Environment, Lipid Profile, Occupational Health, Risk Assessment, Solvents, Work Environment.

Comparison of body adiposity index and body mass index for assessment of body fat percentage among office workers: A validation study

Name of Authors: Ramsha Habib, MPhil Community Medicine and public health Army Medical College, NUMS

Syed Fawad Mashhadi, Professor and Head of Department Community Medicine and Public Health
Affiliation: Army Medical College, NUMS

ABSTRACT

Introduction: Worldwide, obesity prevalence is sharply increasing, and it is currently considered the sixth most important risk factor for death. India and Pakistan are expected to have the highest rates of adult obesity by 2030. The body mass index (BMI) is the most commonly used anthropometric test to assess obesity. However, it cannot distinguish between fat and lean body mass, its application may misclassify the weight status. Body Adiposity Index (BAI) was introduced as a surrogate measure of adiposity and can be calculated as $BAI = [Hip\ circumference\ (cm)/Height\ (m)^{1.5}] - 18$. Both indices show different predictive capacities in different populations. Many comparison studies of BMI and BAI have been conducted in Pakistan but there is paucity of data about both of these indices being compared to a reference standard method. Also, there is a significant shortage of data on these indices within the office worker population.

Objective: To determine the diagnostic accuracy of BMI and BAI as a screening tool in assessing body fat percentage among office workers in comparison with Bioimpedance Analysis as a reference standard method.

Methodology This validation study was carried out among office workers in WAPDA center offices of three districts (Abbottabad, Haripur and Mansehra) in Hazara division of Khyber Pakhtunkhwa province. Two stage probability sampling was used to select the sample. Data were collected regarding socio demographics, anthropometric measures, behavioral factors and body fat percentage was obtained through bioimpedance analysis (using Omron Handheld Body Fat Analyzer HBF 306 C). Physical activity and healthy eating habits were assessed using International Physical Activity questionnaire (IPAQ) scored as MET-min/week and Healthy Eating Assessment questionnaire (HEAQ) scored from 10 -50 based on identification of eating patterns over the past few weeks. BMI and BAI were calculated and compared to body fat percentage derived from bioimpedance analysis (reference method). Data was analyzed using SPSS 27. Qualitative data was presented as percentage and frequencies. Quantitative data was presented as mean and standard deviation. Sensitivity, specificity, positive predictive value and negative predictive value were derived. Receiver operator curves (ROC) were plotted and area under curves (AUC) determined to identify the discriminatory capacity of BMI and BAI or body fat percent (95% CI). Multiple regression models were used to assess the effect of different socio demographic variables and potential confounders on percent body fat. A p-value of < 0.05 was considered.

Results Overall BAI showed better sensitivity of 81% (95%CI =70.6% - 88.9%) than BMI. ROC analysis showed greater AUC value of 0.85 (95% CI=0.79-0.91) in males and 0.97 (95% CI=0.95-0.99) in females as compared to BMI ($p < 0.05$). Multiple linear regression showed age, weight and hip circumference to be positively associated with body fat percent (B values being 0.19, 0.28 and 0.33 respectively) while height, gender and physical activity were negatively associated with body fat percentage (B values -0.38, -0.43 and -0.26 respectively) ($p < 0.05$).

Conclusions BAI is a better predictor of body fat as compared to BMI among office workers and can replace BMI as a screening tool to measure body fat in community settings.

Keywords Body fat percentage, Body mass index, Body adiposity Index, Bioimpedance analysis, Obesity, Office Workers

Black Stone (Paraphenylenediamine) Poisoning: A Case Report

Name of Authors: Komal Noor Ali, Sehrish Sajjad, Dr. Farheed Ahmad

Affiliation: Aga Khan University, School of Nursing and Midwifery, Karachi, Pakistan

ABSTRACT

Introduction Paraphenylenediamine (PPD), commonly known as “Kala Pathar,” is a widely available hair dye associated with high morbidity and mortality when ingested. Its easy accessibility has made it an increasingly common agent in deliberate self-harm, particularly in low-resource settings.

Objective To report a fatal case of paraphenylenediamine (PPD) poisoning and emphasize the urgent need for regulation, awareness, and preventive measures regarding its misuse.

Methodology A 25-year-old male farmer from a rural background ingested PPD following domestic and financial stressors. He initially presented with throat burning, dysphagia, labored breathing, abdominal pain, and collapse. Emergency airway management was performed, including intubation and tracheostomy. Despite initial stabilization, he developed worsening respiratory distress and sepsis. Investigations revealed hyperkalemia, dehydration, acute kidney injury, and multidrug-resistant infections (*Acinetobacter*, *Pseudomonas*). During ICU care, the patient suffered recurrent seizures, rhabdomyolysis-induced renal failure, and progressive deterioration, ultimately leading to death after 10 days.

Results The clinical course demonstrated multi-organ involvement, including airway compromise, renal injury, electrolyte imbalance, and systemic infections. Despite aggressive management, the case was fatal.

Conclusion This case underscores the lethal consequences of PPD ingestion, and the public health challenge posed by its unrestricted availability in Pakistan. Regulatory control, restriction of over-the-counter sales, and public education campaigns are essential. Further research into effective antidotes is urgently needed to reduce morbidity and mortality.

Keywords Paraphenylenediamine poisoning, Hair dye, Suicide attempt, Acute kidney injury, Rhabdomyolysis, Pakistan

Undergraduate Poster Presentations Abstracts

Trends And Demographic Disparities In Mortality Associated With Aspiration Pneumonia In Patients With Parkinson's Disease In The United States, A CDC WONDER ANALYSIS 1999–2020

Name of Authors: Muhammad Ahmed, Manal Nadeem

ABSTRACT

Introduction Parkinson's disease (PD) is a prevalent neurodegenerative disorder, and its most fatal complication is aspiration pneumonia (AP), which accounts for up to 70% of all deaths in this population. While overall mortality in PD has been described, specific temporal trends of AP-related deaths have not been analyzed. Understanding these patterns is critical for developing targeted preventive strategies. This study aimed to investigate demographic and geographic variations in mortality due to co-occurring PD and AP in the United States from 1999 to 2020.

Methodology A retrospective analysis of U.S. mortality data from 1999 to 2020 was conducted using the CDC WONDER database. Death records listing both PD (ICD-10: G20) and AP (ICD-10: J69.0) as causes of death were extracted. Age-adjusted mortality rates (AAMRs) per 100,000 population were calculated for demographic subgroups defined by sex, race/ethnicity, urbanization, and state of residence. Join point regression analysis was utilized to determine significant temporal trends by calculating the annual percentage change (APC) in AAMRs, with $p < 0.05$ considered statistically significant.

Results From 1999 to 2020, a total of 69,798 deaths were attributed to co-occurring AP and PD. The overall AAMR showed a significant decline, falling from 1.22 in 1999 to 0.77 in 2020. Despite this improvement, profound disparities were observed. Males exhibited consistently higher mortality rates than females (overall AAMR 1.74 vs. 0.47, respectively). Among racial groups, Non-Hispanic White individuals had the highest AAMR (1.03), while Non-Hispanic Black or African American individuals had the lowest (0.41). Significant state-level disparities were also evident, with the highest AAMR in Vermont (2.74) and the lowest in Arkansas (0.76).

Conclusion & Recommendations Mortality from aspiration pneumonia in patients with Parkinson's disease has significantly decreased over the past two decades, likely reflecting advancements in clinical care. However, this positive trend is overshadowed by persistent and significant disparities across sex, race, and geography, which suggest inequities in healthcare access and diagnosis, particularly in rural and minority populations. These findings highlight an urgent need for targeted public health strategies, including the promotion of universal dysphagia screening and integrated multidisciplinary care, to eliminate these health inequities and improve outcomes for all individuals with PD.

Keywords Parkinson Disease, Aspiration Pneumonia, Mortality, Health Status Disparities, United States

A SWOT Analysis of Pakistan's MDCAT: Challenges and Reform Opportunities

Name of Authors: Abdul Fasi Bin Abrar Raja
Affiliation: Bahria University College of Medicine

ABSTRACT

Introduction The Medical and Dental College Admission Test (MDCAT) is mandatory for medical school admissions in Pakistan. This study critiques its current format through a SWOT analysis to evaluate its efficacy and global alignment, proposing strategic reforms to enhance its fairness and relevance.

Methodology A qualitative SWOT analysis was conducted. Data was synthesized from the official MDCAT syllabus, Pakistan Medical Commission (PMC) policy documents, and a comparative analysis with international pre-medical benchmarks like A-Level curricula. The focus was on syllabus content, assessment rules, and global compatibility.

Results Key strengths were a standardized national admission system and a focus on core pre-medical subjects. Significant weaknesses identified were a lack of alignment with global syllabi and a restrictive no-calculator policy. The main opportunity lies in modernizing the syllabus and integrating technology, while the chief threat is the reduced international competitiveness of Pakistani students seeking higher education abroad.

Conclusion & Recommendations The MDCAT ensures national standardization but requires modernization to cultivate globally competent medical professionals. Critical recommendations include: (1) synchronizing the syllabus biennially with international standards, (2) permitting scientific calculators to assess applied knowledge, and (3) instituting a structured stakeholder feedback mechanism for continuous evaluation.

Keywords Medical College Admission Test; Educational Measurement; Pakistan; Curriculum; Education Reform

Comparing the performance of Clinical Psychologists and Large language models in diagnosing Mental health disorders.

Name of Authors: Shahab Afridi, Bakhtmeena Nizam, Aamenah Rustam, Sibgha Iftikhar, Noor Ul Ain, Eman Bibi, Mueed Iqbal, Eman Nadeem, Sarmad Nazir.

Affiliation: Ayub Medical college

ABSTRACT

Introduction Artificial intelligence (AI) is increasingly applied in healthcare, particularly in emotion detection and mental health risk assessment. With the rising use of large language models (LLMs) by professionals and patients, it is important to evaluate their diagnostic capabilities compared with trained psychologists. Such insights can inform psychoeducation, treatment planning, and healthcare policy.

Objective To compare the diagnostic accuracy of large language models (LLMs) with clinical psychologists in diagnosing mental health disorders.

Methodology A comparative study was conducted using 136 de-identified psychiatric case reports documented by clinical psychologists at Ayub Teaching Hospital and Women Institute of Learning. After exclusion of incomplete reports, 133 were reviewed by three expert psychologists, with 106 cases reaching diagnostic consensus and serving as the standard reference. Diagnoses from five LLMs (ChatGPT-4o, ChatGPT-3.5, Gemini, Claude, and Perplexity) and primary psychologist diagnoses were compared to the standard using SPSS v27. McNemar's test was applied to assess statistical significance. IRB approval was obtained.

Results Out of 106 standardized cases, diagnostic matches were as follows: ChatGPT-4o (82%), ChatGPT-3.5 (82%), Claude (81%), Gemini (72%), Perplexity (70.7%), and clinical psychologists (66.6%). Performances of ChatGPT-4o, ChatGPT-3.5, and Claude were significantly higher than clinical psychologists ($p < 0.05$), while Gemini and Perplexity showed no significant difference.

Conclusion Certain LLMs demonstrated higher diagnostic accuracy than clinical psychologists, indicating their potential role in mental health diagnostics. A refined and customized AI framework could complement healthcare professionals, improving diagnostic efficiency, consistency, and patient outcomes.

Keywords Artificial intelligence, large language models, Mental health diagnosis, Clinical psychology, Generative AI, Pakistan

Awareness, Knowledge, Attitude and Skills of Telemedicine Among Health Care Professionals of Taxila and Wah Cantt

Name of Authors: Arooj Fatimah, Ayesha Sher

Affiliation: HITEC-IMS

ABSTRACT

Introduction Telemedicine holds the promise of improving access to Health care, especially in areas where there are geographical barriers. Acceptance and subsequent success depend on knowledge and understanding of the new concept by users, skills required for its successful implementation, and a working environment conducive to the adoption of new technology.

Objectives To assess the awareness, knowledge, attitude, and skills of telemedicine among health care professionals of Taxila and Wah Cantt.

Methodology A Cross sectional survey was conducted at Public and Private Hospitals of Taxila and Wah Cantt from December 2023-April 2024. The sample size calculated by WHO sample size calculator was 120 but data was collected from 159 doctors selected by convenience sampling. Data was collected by a pre validated self-administered questionnaire AKAS. Analysis was done by SPSS version 26. Mean, standard deviation, frequency and percentages were employed to summarize demographic characteristics, awareness, knowledge, attitude and skill levels. The mean score with standard deviation were calculated for all the sections of AKAS.

Results 68(42.8%) were males and 91(57.2%) were females. 103 (64.8%) participants were MBBS and 56(35.2. %) participants were having post graduate degrees. 116 (63%) were doing the clinical practice, 114(71.1%) were doing job in private setup. 52(51.6%) were clinicians. 115 (72.3%) were having mediocre knowledge of computer and only 24(15.1%) were advanced learner of computer skills. Only 27(17.0%) has received the formal training of telemedicine. Mean scores of AKAS with standard deviation were (16.69+4.74), (7.70+2.13), (33.10+6.90) and (22.62+9.15). 93(58.5%) were having good awareness, 109(68.8%) were having adequate knowledge, 152(95.6%) were having positive attitude and 57(35.8%) were having good skill of telemedicine. Clinical practice showed significant association with awareness, knowledge, attitude, and skill.

Conclusion To promote and support the implementation of e health system in Pakistan it is required to improve the skill of the doctors

Key words Telemedicine, knowledge, attitude, health professionals, e health

Assessment of Mental Health and Mental Health Literacy among Medical Students of HITEC-IMS Taxila

Name of Authors: Hafsa Aslam, Ayesha Janjua

Affiliation: HITEC-IMS Taxila

ABSTRACT

Introduction Mental Health is an important pillar of well-being with special importance to medical students, with a cogitative need for Mental Health Literacy.

Objectives Assessment of Mental Health and Mental Health Literacy among medical students in HITEC-IMS with their relation to sociodemographic variables and determine the correlation between the two.

Methodology A cross-sectional study with 206 participants from MBBS students of HITEC-IMS. A stratified simple random sampling method was used from November 2023 to April 2024. A structured proforma for collecting demographic variables, Mental Health Literacy Scale (MHLS) for assessing MHL, and the Warwick-Edinburgh Mental Well-Being Scale (WEMWBS) for evaluating mental health, was used. Jamovi was used for data analysis.

Results MHL was found to be low ($M=106.9 \pm 13.8$), with a moderate Mental Health ($M=44.5 \pm 9.5$). Females had a higher MHL than Males ($t(192)=3.53, p<0.01$). A significant association of MHL exists with regards to accommodation ($t(86.4)=2.38, p=0.01$) and Socioeconomic Status ($F(3, 25.3)=6.95, p=0.01$). With the progress of academic years, there was a tendency for mental health to decline ($F(4, 99.1)=2.61, p=0.04$). MHL was positively correlated to Mental Health ($r(204)=0.17, p=0.01$).

Conclusions MHL is an important concept, with its relation to Mental Health, highlighting the need for timely interventions necessary for the improvement of MHL, and to achieve meaningful outcomes in the realm of Mental Health.

Keywords Mental Health, Mental Health Literacy, Medical Students, MHLS, WEMWBS.

The Burden of Doubt: Prevalence and Contextual Factors of Imposter Syndrome in Medical Students

Name of Authors: M. Shahryar, M. Shayan haider

Affiliation: Watim Medical and dental College

ABSTRACT

Introduction Imposter Syndrome (IS) is a psychological phenomenon of persistent self-doubt and inability to internalize success despite competence [1]. It is frequently observed in medical students due to heavy academic workload, high expectations, and perfectionistic tendencies, and has been linked to depression, anxiety, and burnout [2]. Despite its global recognition, limited research exists in Pakistan, where cultural expectations and mental health stigma may intensify its effects. This study was conducted to determine the prevalence of IS among medical students in Rawalpindi and to identify factors such as gender, academic year, and mental health associations.

Methodology A cross-sectional descriptive study was conducted among MBBS students (1st-final year) of Rawalpindi medical colleges for a period of 6 months. A total of 589 participants were recruited using non-probability convenience sampling. Data were collected through a structured questionnaire incorporating the Clance Impostor Phenomenon Scale (CIPS). Associations between IS, gender, and psychological indicators were statistically analyzed.

Results It was highly prevalent among medical students, with most reporting frequent self-doubt and attributing success to external factors. Most participants were aged 18-30 years, and 77% were female. Female students had significantly higher IS scores compared to males ($p = 0.041$). Correlation analysis showed that higher IS scores were strongly associated with depression ($r = 0.394, p < 0.001$), and negatively correlated with confidence ($r = -0.245, p < 0.001$) and satisfaction with achievements ($r = -0.293, p < 0.001$). These findings demonstrate that IS undermines both academic confidence and mental well-being, with females being particularly affected.

Conclusion It is a highly prevalent issue among medical students in Rawalpindi, with significant gender differences. Its strong association with depression, reduced confidence, and academic dissatisfaction emphasizes the need for awareness programs, counseling services, and faculty support to mitigate its impact.

Keywords Imposter Syndrome, Medical Students, Mental Health, Gender Differences

Prevalence of Eustachian tube dysfunction and associated factors among patients; A cross sectional study in Fauji Foundation Hospital Rawalpindi.

Name of Authors: Muneeba Amir, Muhammed Zohaib
Affiliation: Foundation University Medical College (FUMC)

ABSTRACT

Introduction Eustachian Tube Dysfunction (ETD) occurs when middle ear ventilation is impaired due to malfunction of the auditory tube, leading to symptoms such as ear fullness, pressure, hearing loss, and tinnitus. It may progress to otitis media with effusion (OME) and hearing problems, particularly in children.

Objectives To determine the prevalence of ETD and its association with demographic and clinical factors including age, gender, family history, and allergic rhinitis among patients at Fauji Foundation Hospital (FFH), Rawalpindi.

Methodology A six-month cross-sectional study was conducted in the ENT Department of FFH with approval from the Ethical Review Committee. Data were collected using the ETDQ-7 questionnaire and demographic details. A total of 379 patients aged 5-39 years were included, while those younger than 5, older than 39, or unable to provide consent were excluded. A score ≥ 14.5 indicated ETD. Associations were analyzed using chi-square with $p < 0.05$ as significant.

Results Of 379 participants, 194 (51.2%) had ETD. Gender and age were not significantly associated ($p > 0.05$), while allergic rhinitis showed a strong association ($p < 0.05$). ETDQ-7 symptoms were significantly linked to ETD. Most cases were moderate (39.3%) or mild (35.9%), with severe cases less frequent (5.8%).

Conclusion ETD was prevalent in more than half of symptomatic ENT patients, reflecting a significant burden in tertiary care. Allergic rhinitis and ETDQ-7 scores were important associated factors. Early detection and targeted management may help reduce complications and improve ENT care in the community.

Keywords Eustachian Tube Dysfunction (ETD), ETDQ-7, Risk Factors, Rawalpindi

Eight-year resistance trends of klebsiella pneumoniae: A Retrospective insight into rising AMR threat

Name of Authors: Nimra, Aleena Ahmad
Affiliation: Foundation University Medical College, Islamabad

ABSTRACT

Introduction *Klebsiella pneumoniae* is a Gram-negative, encapsulated bacterium causing a broad range of severe infections, including pneumonia, liver abscess, and UTIs. Its virulence is driven by factors like a hyper-viscous capsule, pili, LPS, and iron carriers. The emergence of multidrug resistant and hypervirulent strains (MDR-hvKP), poses a major global health threat. These strains are increasingly linked to hospital outbreaks and community acquired infections, with rising prevalence in countries like Pakistan. Understanding AMR trends is vital for guiding empirical treatment and improving infection control. The objective of this study is to evaluate the antimicrobial resistance patterns of *Klebsiella pneumoniae* isolates from clinical samples collected over eight years, highlighting trends in resistance and implications for treatment in a tertiary care hospital

Methodology It is a Retrospective cross-sectional study done in Department of Microbiology, FFH, Islamabad, from 1st July 2017 to 30th June 2025. Sample size was 1989, calculated through WHO sample size calculator. *Klebsiella pneumoniae* isolates were tested for antimicrobial susceptibility using the disk diffusion method on Mueller Hinton agar, incubated at 35-37°C for 16-18 hours, with zones of inhibition measured to assess resistance. Data were recorded, digitized using Microsoft Excel, and analyzed using SPSS version 28.0.

Results High resistance rates were observed against third generation cephalosporins: Cefotaxime (82%), Ceftriaxone (79%), and Ceftazidime (77%), indicating widespread ESBL production. Ciprofloxacin resistance was noted in 74% of isolates. Alarming, carbapenem resistance was found in 48% of isolates against Imipenem and 44% against Meropenem, demonstrating the emergence of carbapenem-resistant *Klebsiella pneumoniae* (CRKP). Amikacin (22% resistance) and Colistin (16% resistance) showed the highest susceptibility but remain at risk of reduced effectiveness.

Conclusion The study highlights a significant increase in multidrug-resistant and hypervirulent *Klebsiella pneumoniae* strains, necessitating urgent implementation of antimicrobial stewardship, regular susceptibility testing, and molecular surveillance to prevent treatment failures and hospital outbreaks.

Keywords *Klebsiella pneumoniae*, ESBL, carbapenem resistance, susceptibility testing.

Ultrasound-Guided Stellate Ganglion and Interscalene Blocks for Refractory Pediatric Parsonage–Turner Syndrome: A Case Report and Clinical Implication.

Name of Authors: Insha Habib and Umar Farooq Bhatti
Affiliation: Al-Nafees Medical College, Islamabad

ABSTRACT

Introduction Parsonage–Turner syndrome (neuralgic amyotrophy) is an uncommon inflammatory brachial-plexopathy rarely affects children or presents bilaterally. We describe a pediatric bilateral case with refractory neuropathic pain and report the outcome after ultrasound-guided stellate ganglion and interscalene blocks to illustrate this technique as an alternative when systemic therapy fails.

Methodology Single-patient case report. Clinical assessment, laboratory autoimmune screen, MRI of the brachial plexus, and electrophysiology (nerve conduction studies and electromyography) were used to establish the diagnosis. Initial management included oral corticosteroids, tramadol, and two doses of IVIG; persistent severe pain prompted ultrasound-guided stellate ganglion (at C6) and interscalene blocks under general anesthesia. Pain severity was recorded before and after the procedure; follow-up at 1 week and subsequently for medication changes and referral to physiotherapy.

Results A previously healthy 6-year-old girl developed left upper-limb pain and wrist-drop in August 2023, with contralateral involvement by October 2023. After a limited response to steroids, tramadol, and IVIG, stellate ganglion + interscalene blocks were performed on Oct 27, 2023. At 1-week follow-up, the patient reported ≈85% pain reduction; analgesia was tapered to paracetamol, and steroids were discontinued by early November. Electrophysiology and MRI supported inflammatory brachial plexopathy.

Conclusion & Recommendations Ultrasound-guided stellate ganglion and interscalene blocks produced rapid, substantial analgesia in this pediatric PTS case and may be considered when systemic treatments are ineffective or poorly tolerated. Prospective studies and longer follow-up are needed to define indications, optimal dosing, and long-term outcomes.

Keywords Brachial Plexus Neuropathies, Neuralgic Amyotrophy, Stellate Ganglion Block, Regional Nerve Block / Analgesia

Efficacy and safety of Bioresorbable vascular scaffolds (BVS) vs. Drug-eluting stents (DES) in patients with CAD: A Systematic review and meta-analysis

Name of Authors: Rida Fatima
Affiliation: Fazaia Medical College, Islamabad

ABSTRACT

Introduction The treatment of coronary artery disease (CAD) included the placement of stents via percutaneous coronary intervention (PCI), with Drug-eluting stents (DES)(1) being the standard therapy. However, to overcome the long-term post-procedural outcomes, Bioresorbable vascular scaffolds (BVS)(2) were created recently, but their benefits remain uncertain.

Objectives Determine the efficacy and safety of BVS and EES in patients with CAD through systematically reviewing and meta-analyzing RCTs and Cohort studies comparing them.

Methodology A systematic search was performed through PubMed, Scopus, Embase, and Cochrane Library from inception until July 2025 for studies comparing DES and first-generation BVS in patients with CAD(3). The outcomes of interest included clinical outcomes (TVF, TLF, revascularization, restenosis, MACE, MI, and all-cause mortality) and angiographic outcomes (device stenosis, MLD, LLL). A random-effects meta-analysis derived Odds ratios (OR) with 95% confidence intervals. Subgroup analyses were conducted for RCTs versus cohort studies.

Results out of 508 search results, 32 studies were included, identifying a total of 12,178 patients; 6,054 underwent BVS, while 6,124 underwent DES stenting. Clinical outcomes like MACE (OR 1.19, 95% CI: 1.03, 1.38; $p = 0.02$; $I^2 = 0\%$), MI (OR 1.22, 95% CI: 1.07, 1.39; $p = 0.002$, $I^2 = 0\%$), TVR(OR 1.28, 95% CI: 1.14, 1.44; $p < 0.0001$, $I^2 = 1\%$), TLR (OR 1.25, 95% CI: 1.09, 1.46; $p = 0.002$, $I^2 = 0\%$), TLF (OR 1.19, 95% CI: 1.06, 1.34; $p = 0.03$, $I^2 = 0\%$), and device thrombosis (OR 2.17, 95% CI: 1.64, 2.88; $p < 0.00001$, $I^2 = 0\%$) showed statistically significant outcomes favoring DES over BVS(4). Other outcomes like TVF, non TVR, non TLR, and all-cause mortality were not statistically significant. Subgroup analyses evaluated that cohort studies depicted the highest risks, while RCTs demonstrated attenuated and non-significant differences. Meta-regression found no significant predictors of clinical and angiographic outcomes, including age, sex, hypertension, smoking, diabetes, and dyslipidemia.

Conclusion First-generation BVS are associated with higher risks of adverse clinical outcomes, particularly device thrombosis and repeat revascularization, compared with DES. DES remains (5, 6)the best clinical practice for patients with CAD; however, the concept of self-dissolving stents and next-generation BVS seems promising in terms of clinical and angiographic outcomes.

Keywords BVS, DES, EES, PCI, CAD, MACE, MI, TVR, TLF, Restenosis, systematic review, meta-analysis.

Availability of geriatric health care services & trained staff in public sector health care settings of District Multan, Pakistan

Name of Authors: Minahil Haleem

Affiliation: Fazaia Ruth Pfau Medical College, Karachi

ABSTRACT

Introduction Pakistan's population is aging rapidly, yet healthcare systems remain ill-prepared to meet their needs. The **Senior Citizens Act** (2021) promised dedicated services for older adults, but its impact at ground level is unclear. This study explored the availability of geriatric-friendly facilities and the preparedness of healthcare staff in **Multan District**, South Punjab.

Methodology A cross-sectional survey (June-August 2025) was conducted across **61** public healthcare facilities (**55 BHUs, 5 DHQs, 1 THQ**). Data were collected using observational checklists and structured staff questionnaires, then analyzed with **SPSS**.

Results A major gap was observed between policy and practice. Only **4.9%** of facilities had geriatric wards, and **98.4%** lacked specialized OPDs. Wheelchairs were available in most facilities (**93.4%**), but often in insufficient numbers. Essential age-friendly measures—separate seating (**1.6%**), reduced waiting times (**4.9%**), and commode toilets (**1.6%**)—were almost absent. **Physical therapy** services were missing in **98%** of facilities. Although **82%** of **staff reported training** in elderly care, only **42.6%** had training in **chronic disease** management, the leading burden in this age group.

Conclusion & Recommendations Despite legislative commitments, older adults in South Punjab remain underserved. Our findings call for innovative, low-cost infrastructure improvements (grab bars, seating, ramps), integration of geriatric modules into medical training, and stronger monitoring of policy implementation. Addressing these gaps is essential if Pakistan is to achieve dignified, age-friendly healthcare aligned with international frameworks such as the **Madrid Plan** and the **WHO Decade of Healthy Ageing**.

Keywords Geriatrics; Health Services Accessibility; Ageing Population; Pakistan; Primary Healthcare Integration

Diuretic Administration Timing and 30-Day Readmission Risk in Hospitalized Heart Failure Patients: A Retrospective Cohort Study using MIMIC-IV Database

Name of Authors: Mirza Mohammed Ali Baig

Affiliation: Islamic International Medical College, Riphah International University, Rawalpindi

ABSTRACT

Introduction Circadian rhythm shapes cardiovascular physiology and drug response. Whether the timing of diuretic therapy influences outcomes in hospitalized patients with heart failure (HF) is unclear. We aimed to examine the association between diuretic timing and 30-day readmission risk.

Methodology We conducted a retrospective cohort study using the Medical Information Mart for Intensive Care IV (MIMIC-IV) database (2008-2019). Adults (≥ 18 years) hospitalized with HF who received scheduled diuretics were classified by predominant dosing time: morning (6:00 AM-12:00 PM) versus evening (6:00 PM-12:00 AM). The primary outcome was 30-day all-cause readmission. Secondary outcomes included HF-specific readmission, time to first readmission, 14- and 90-day readmission, and a composite of 30-day readmission or death.

Results Among 15,708 patients, 9,231 (58.8%) received morning and 6,477 (41.2%) evening diuretics. The mean age was 73.2 years; 45.3% were female. Evening patients were slightly older, more often had reduced ejection fraction and chronic kidney disease and had longer hospital stays. Thirty-day readmission occurred in 22.2% of morning versus 23.8% of evening patients (unadjusted Odds Ratio (OR), 1.10; 95% CI: 1.02 to 1.18; $p = 0.009$). After adjustment, evening dosing remained associated with higher risk (adjusted OR, 1.11; 95% CI: 1.03 to 1.20; $p = 0.006$). HF-specific readmission was also greater in the evening group (adjusted OR, 1.15; 95% CI, 1.04 to 1.28; $p = 0.008$). Kaplan-Meier analysis showed shorter time to readmission, with consistent findings across 14- and 90-day windows.

Conclusions Evening diuretic use was linked to a significant rise in 30-day readmission risk. These findings suggest that optimizing diuretic timing may represent a simple, cost-effective intervention to improve heart failure outcomes.

Keywords Heart failure, diuretic timings, circadian rhythm, hospital-readmission, 30-day readmission, chronotherapy.

Handwriting or Typing: Evaluating the Role of Note-Taking Methods in Cognitive Retention among Medical Students

Name of Authors: Muhammad Tayyab Saif, Zahra Iqbal Qureshi, Nawwal Naeem Ch

Affiliation: Bahria University College of Medicine, Bahria University Health Sciences Campus, Islamabad

ABSTRACT

Introduction Today's medical students have grown up in a technologically advanced world with access to a wide range of educational resources for their personal study.¹ Most educators consider note-taking a vital part of formal classroom learning.² Advancements in technology, such as tablets, computers, and mobile apps, are changing classroom dynamics and influencing how students create and review notes. More students are now using tablets and smartphones to access medical information online instantly.³

Methodology A cross-sectional descriptive study included undergraduate medical students of all genders and years from various medical institutions across Punjab, Pakistan. Forms were designed based on questions revealing recent exam scores, compared with previous exam performance, were used to assess both short- and long-term concept retention.

Results A total of 120 responses have been collected so far; data collection and analysis are ongoing. Preliminary findings indicate minor differences in exam score improvements between handwritten and digital note-taking groups. Out of total responses, **57.8% were females** and **42.2% were males**. Regarding note-taking preference, the majority, **i.e., 81.3%**, preferred **hand-written notes**, while only **18.7%** preferred **digital methods (laptop/tablet/iPad)**. In terms of knowledge retention, **56.3%** reported retaining information better with **hand-written notes**, whereas **43.7%** felt **digital methods** were better. When asked about switching methods, **100%** indicated having tried switching between handwritten and digital notetaking at some point. The overall average satisfaction score with their chosen method was **2.56 out of 5**.

Conclusions & Recommendations The study aims to clarify the role of handwritten and digital notetaking in medical learning. The findings may help student's select effective learning strategies and encourage educators to integrate evidence-based note-taking approaches into medical curricula.

Keywords Digital notetaking, concept retention, learning strategies

Awareness of mothers coming to obstetric wards of allied hospitals regarding neonatal care and the working of community health workers in their districts

Name of Authors: Sumia Fatima a, *, Tayyaba Idrees a, **, Maryam Mansoor a, Zainab Idrees a, Zainab Hussain a, Sidra Hamid b

Affiliation: Rawalpindi Medical University, Rawalpindi

ABSTRACT

Introduction Neonatal mortality remains a significant challenge not only to the world, but especially to a developing country like Pakistan. It can be majorly attributed to the sub-par healthcare, insufficient and under-recognized community health workers, and the lack of knowledge of proper newborn care on the part of the parents.

Objectives To determine the level of awareness of mothers regarding neonatal care, to assess the working of community health workers in educating the masses about it and to determine the factors which form the basis of this knowledge.

Methodology A cross-sectional study was conducted in the OBS (obstetrics) wards of Hospitals affiliated with Rawalpindi Medical University from January 2022 to June 2022. The sample size was 138. Data was collected by one-on-one interviews, using a standardized USAID Community Health Worker Assessment and Improvement Matrix questionnaire. Data analysis was done using SPSS v28. Chi-square test was applied to check for significance.

Results Out of the total 138 participants, 47.8% (n = 66/138) were between the ages of 21-25. Results showed that women between the ages of 21-25 (P = 0.000058) and women who had their first child between the ages of 23-27 had good knowledge about neonatal care. 45% (n = 62/138) of the participants had poor knowledge of neonatal care, whereas 55% (n = 76/138) had good knowledge (P = 0.000002). As for the role of community health workers, only 20-30% of the participants were being provided with their services; hence their performance was not found to be adequate.

Conclusions Community health workers can play an important role in improving maternal and neonatal care. Family-centered care, appropriate age of first conception and motherhood, and proper guidance to first-time parents can ensure significant improvement in neonatal care in the future.

Keywords Community health workers, Mothers, Neonatal health, Neonatal screening, Neonate

Imposter syndrome and its association with atychiphobia A cross sectional study.

Name of Authors: Zainab Younas

Affiliation: Foundation University

ABSTRACT

Introduction Imposter Syndrome (IS) is a mental health issue characterized by self-doubt and fear of intellectual fraud. Atychiphobia, an unreasonable fear of failure, is a potential etiological component. This study aims to determine the prevalence of IS and atychiphobia among medical students in Pakistan and explore any association between them.

Methodology A cross-sectional study was conducted at Foundation University Medical College, Islamabad, involving 255 students aged 18-26. Data was collected using a validated questionnaire, and students without mental illness were excluded. The Young Imposter Syndrome scale was used for Imposter Syndrome evaluation, and the Performance Failure Appraisal Inventory scale for Atychiphobia evaluation. The study was approved by the Ethical Review Committee of FUSH, and informed consent was obtained from each participant.

Results Out of the 255 students, n=93 (36.4%) had Imposter Syndrome, and n=119 (47.5%) had scores above the cut-off for atychiphobia. IS was highest among students aged between 18-22 years (n = 73; 28.6%) and among females (n = 74; 29%). Atychiphobia was highest among females (n = 86; 33.7%) and highest in Second-year students (n = 30; 11.7%). The highest occurrence of IS was found in the third-year group (n = 24; 9.4%). There was a significant relationship between IS and atychiphobia, $p=0.001$ ($p < 0.05$).

Conclusion The study found a significant relationship between Imposter Syndrome and atychiphobia among a single-centred population, with a significant proportion of male and female participants. Atychiphobia is identified as a potential cause of Impostor Syndrome, but further research is needed to understand its high prevalence among students.

Keywords Imposter Syndrome, Atychiphobia, Medical Students, Self-Doubt, Psychological Wellbeing

Floppy Infant Syndrome: A Case of Spinal Muscular Atrophy Type I in a 3.5-Month-Old Male Infant.

Name of Authors: Raja Nasir Nawaz, Wafa Asjad.

Affiliation: Al Nafees medical college

ABSTRACT

Introduction Spinal muscular atrophy (SMA) is a rare genetic disorder causing muscle weakness and hypotonia in infants due to spinal motor neuron degeneration. SMA Type 1, (Werdnig-Hoffmann disease), is the most severe form, with onset of symptoms before six months of age. Early diagnosis enables timely supportive care and access to new therapies to improve survival.

Methodology A 3.5-month-old male infant presented in OPD with decreased limb movements and feeding difficulty since birth. The mother reported weak sucking, prolonged feeding time and occasional choking. There was no history of trauma, fever, seizures, vomiting, or rash. The antenatal history revealed polyhydramnios and decreased fetal movements. The developmental milestones were delayed including lack of head control, difficulty with grasping and rolling, inability to sit, etc. The infant appeared to have low muscle tone with minimal antigravity movements, frog-leg posture, tongue fasciculations, weak primitive reflexes, and absent Moro reflex. Basic investigations were normal. Nerve conduction studies and electromyography (EMG) exclude neuropathy/myopathy. Multiplex ligation-dependent probe amplification analysis for the Survival Motor Neuron 1 (SMN1) gene (MLPA) confirmed homozygous SMN1 gene deletion, diagnosing Spinal Muscular Atrophy (SMA) Type 1. Management was supportive, including nasogastric feeding, respiratory monitoring, physiotherapy, and neurology referral. Parents received genetic counselling and were advised to have regular follow-ups.

Conclusion This case reflects the importance of early identification and timely diagnosis of SMA disease. Awareness about genetic diseases, diagnostic protocols, and availability of treatment options like pharmacological drugs and gene therapy are very important to improve outcomes in patients with SMA Type 1. For a definitive cure, this disease is still a focus for continued research and clinical trials in the medical field.

Keywords Spinal muscular atrophy, hypotonia, floppy infant, motor neuron disease.

A Survey-Based Analysis of Healthcare Professionals' Perspectives on the Clinical Integration of AI-Driven Health Applications in Pakistan

Name of Authors: Syed Arshmaan Hussain
Affiliation: Wah Medical College

Abstract

Objective To assess healthcare professionals' awareness and usage of AI-driven health applications, explore their perceptions of benefits and limitations, and identify barriers and facilitators to clinical adoption in Pakistan.

Methodology A cross-sectional survey was conducted among 200 healthcare professionals, medical students, and AI conference attendees from POF Hospital and WMC in Pakistan, selected via purposive sampling. Data were collected using a standardized questionnaire based on the Technology Acceptance Model (TAM), assessing demographics, AI usage, perceived usefulness, ease of use, and barriers/facilitators. Descriptive and inferential statistics were analyzed using SPSS.

Results Most participants were aged 31-40 (58.9%), female (71.4%), and held undergraduate degrees (81.1%), with 57% from medicine and 31.1% from nursing. AI usage was moderate, with 58.3% of medical professionals and 63.3% of nurses reporting adoption. Perceived usefulness scored 3.64 (SD = 1.25), ease of use 3.05 (SD = 1.01), and technology familiarity 2.61 (SD = 0.74), indicating basic to intermediate digital literacy. Major barriers included data security concerns (86.0%), time constraints (33.7%), and lack of training (30.0%), while facilitators were accessibility (65.1%), trust in apps (60.3%), and reliability (55.7%).

Conclusion Pakistani healthcare professionals show moderate AI adoption with positive perceptions of its usefulness but face significant barriers like data security concerns and limited training. Enhancing digital literacy, strengthening data privacy frameworks, and integrating AI education into medical curricula are critical to advancing AI-driven health integration in Pakistan.

Keywords Artificial Intelligence, AI-driven health applications, healthcare professionals, clinical integration, Pakistan, data security, digital literacy, Technology Acceptance Model (TAM).

Clinical Characteristics and Resistance Patterns of Extensively Drug-Resistant *Salmonella Typhi* in the Pediatric Population of Pakistan: A Prospective Study

Name of Authors: Hamna Khalid, Kanza Riaz,
Affiliation: Wah Medical College

ABSTRACT

Introduction Extensively drug-resistant (XDR) *Salmonella enterica* serovar Typhi has emerged as a major pediatric health concern in Pakistan, restricting treatment options and increasing morbidity. This study aimed to characterize the clinical features, antimicrobial resistance patterns, and treatment outcomes of pediatric XDR typhoid in Northern Punjab.

Methodology A prospective cohort study was conducted in the Department of Pediatrics, Pakistan Ordnance Factories (POF) Hospital, Northern Punjab, from January 2024 to January 2025. Children aged 1-12 years with culture-confirmed XDR S. Typhi were enrolled through consecutive sampling (n = 65). Data were collected prospectively using structured case record forms, including demographic details, clinical features, laboratory results, treatment regimens, and outcomes. Antimicrobial susceptibility was determined using Kirby-Bauer disc diffusion per CLSI guidelines. Data analysis was performed using SPSS v25.

Results Most patients (60%) were aged 5-10 years, with a slight female predominance (50.8% vs. 49.2%). Vomiting (69.2%) and headache (47.7%) were the most frequent symptoms. Laboratory analysis showed elevated CRP (67.17 ± 17.63 mg/L), ALT (58.05 ± 14.86 U/L), and AST (57.09 ± 14.47 U/L). All isolates were resistant to ceftriaxone, ciprofloxacin, ampicillin, and chloramphenicol. Azithromycin retained 96.9% sensitivity, while meropenem remained fully effective 100%. Treatment adherence was complete in 60% of patients, with a relapse rate of 6.2%; no mortality was observed.

Conclusion Pediatric XDR typhoid remains a public health challenge. Strengthened antimicrobial stewardship, vaccination, and water safety interventions are essential for containment.

Keywords Antibiotic Resistance, Azithromycin, CRP, Meropenem, Pediatric Typhoid, *Salmonella Typhi*, XDR Typhoid of *Salmonella Typhi*: emergence of resistant strains. Cureus. 2020;12(11):e11350. doi:10.7759/cureus.11350
[doi:10.7759/cureus.11350](https://doi.org/10.7759/cureus.11350)

Prevalence and Psychosocial Correlates of Depression, Self-Harm, and Suicidal Ideation among School-Going Adolescents in Karachi: A Cross-Sectional Analysis

Name of Authors: Hiba Imran,¹ Bisma Munawar,¹ Umme Roman Akhtar,¹ Shahtaj Khan,¹ Zoraiz Asim,¹ Arham Ahmed,¹ Noor e kainat,¹ Sheema Noreen Naz,¹ Ali Iqbal,¹ Wajiha Siddiqui,¹ Maheen Fatima,¹ Ahmed Daud Siddiqui,¹ Nidal Bin Kamran,¹ Muddassir Syed Saleem,¹ Rooha Hanif¹

Affiliation: Karachi Medical and Dental College, MBBS

ABSTRACT

Introduction Amidst a global rise in youth mental health concerns, Pakistan's adolescents face growing psychological distress that remains largely underreported and underserved. [1] Depression, non-suicidal self-injury (NSSI), and suicidal ideation are pressing yet often neglected issues in school-aged populations. This study aims to assess the frequency and interrelation of depressive symptoms, self-harm behaviors, and suicidal ideation among adolescents in Karachi, Pakistan.

Methodology A cross-sectional survey was conducted among adolescents (13-18 years) from public and private secondary and higher secondary schools in Karachi using two-stage cluster sampling. Baseline data were collected with the Center for Epidemiologic Studies Depression Scale (CES-D) and the Deliberate Self-Harm Inventory (DSHI), followed by phone-based interviews using the Suicidal Ideation Attributes Scale (SIDAS). Descriptive statistics, Chi-square tests, Logistic Regression, and Spearman's rank-order correlations were used to analyze the data using SPSS Version 26.

Results Among 583 students, 61.4% met criteria for depression, 41.3% reported self-harm, and 32.8% had suicidal ideation, with 4.5% at high risk. Depression was moderately associated with self-harm ($p = 0.500$) and suicidal ideation ($p = 0.380$); self-harm and suicidal ideation also correlated ($p = 0.341$) ($p < 0.001$). Significant associations were observed between suicidal ideation and gender ($p < 0.003$), ethnicity ($p = 0.009$), income ($p = 0.001$), smoking ($p = 0.043$), and family psychiatric history ($p = 0.000$). Females had higher CES-D and SIDAS scores ($p = 0.001$). Self-harm was more prevalent in private school students ($p = 0.0007$), and linked to smoking ($p = 0.008$) and family history ($p = 0.022$). Logistic regression confirmed CES-D score (OR = 1.071, $p < .001$) and higher income as predictors. The estimated overall prevalence rates were calculated as 40.87% for depression, 27.51% for non-suicidal self-injury (NSSI), and 20.09% for suicidal ideation. Only 29.5% were willing to seek counseling.

Conclusion This study highlights an urgent public health concern regarding adolescent mental health in Karachi, with high rates of depression, self-harm, and suicidal ideation. The strong link between these variables highlights the need for urgent policy action to reduce stigma, expand access, and integrate culturally informed, family-inclusive mental health support and screening within schools.

Keywords : depression; self-harm; suicidal-ideation, mental-health, adolescents.

Safety and Efficacy OF PRP In Treating POH: A Systematic Review and Meta-Analysis

Name of Authors: Eman Imtisal, Ibrahim Manzoor

Affiliation: Islamic International Medical College & Foundation University

ABSTRACT

Introduction Periorbital hyper-pigmentation (POH) is a common, multi-factorial condition characterized by darkening of the skin around the periorbital region. Current treatments like topical agents, fillers, lasers, and surgery offer variable results with limitations. Platelet-rich plasma (PRP) is a newer, promising therapy due to its regenerative properties and safety profile.

This meta-analysis compares PRP with chemical agents to evaluate patient satisfaction and treatment outcomes for POH. Our objective for conducting this meta-analysis is to determine the clinical efficacy and safety by comparing PRP with other chemical agents in the treatment of POH.

Methodology MEDLINE, Scopus, and Embase were searched from inception till 3rd June 2025, for trials comparing PRP to other techniques in POH. Studies reporting treatment response as measured by dermatologist or patient satisfaction using either ordinal or continuous scales were included. Differences in pain intensity, post-operative inflammation, bruising, and ecchymosis were analyzed. A random effects model was used to pool SMDs with 95% CI. Inclusion criteria included published RCTs that had patients of POH. Observational studies, case reports, and studies with outcomes such as peri-orbital rejuvenation were excluded.

Results Nine RCTs (PRP = 185; comparators = 195) were included. PRP demonstrated high treatment efficacy (SMD = -0.10; 95% CI = -0.58 to 0.37; $p = 0.66$). No significant difference was found in patient satisfaction between PRP and comparators (SMD = -0.40; 95% CI = -1.10 to 0.30; $p = 0.26$). However, PRP was associated with higher pain scores during treatment (RR = 1.74; 95% CI = 1.06 to 2.84; $p = 0.02$). PRP significantly reduced the risk of post-treatment inflammation (RR=0.2; CI, = 0.08 to 0.98) and ecchymosis (RR=1.82; 95% CI = 0.54 to 6.17 $p=0.34$). Heterogeneity (I^2) ranged from moderate to high across outcomes.

Conclusion PRP demonstrates comparable patient satisfaction to chemical agents in the treatment of POH while offering significant advantages in reducing post-treatment inflammation and ecchymosis. However, it is associated with higher procedural pain. Overall, PRP appears to be a safe and effective therapeutic option for POH, warranting consideration in clinical practice, especially for patients prioritizing reduced post-procedural-downtime

Key Words: Periorbital hyperpigmentation, PRP, Laser Therapy, Platelet rich Plasma, Skin

Endovascular Ablation of the Right Greater Splanchnic Nerve in Heart failure with preserved ejection fraction: A systematic review and meta-analysis. FRMCK

Name of Authors: Hashim Talib Hashim¹, Mostafa A. Khalifa², Mustafa Amjed Shahrורי³, Aya Ahmed Shimal^{4*}, Ahmad Omar Saleh⁵, Omnia Samy El-Sayed⁶, Muhammad Bashir⁷, Elian Khalafalla Awadalla⁸, Alaa R. AL-Ihribat⁹, Fathimathul Henna¹⁰, Mohammedbaqer Ali Al-Ghuraibawi¹¹.

Affiliation: Fazaia Ruth Pfau Medical College

ABSTRACT

Introduction Traditional therapies for heart failure with preserved ejection fraction (HFpEF) have shown limited efficacy. However, emerging studies suggest that novel approaches, such as the Endovascular Ablation of the greater splanchnic nerve (GSN), may offer promising benefits for patients with this condition. Exploring these techniques could pave the way for future advancements in HFpEF treatment. This systematic review and meta-analysis aimed to evaluate the safety and efficacy of endovascular GSN ablation in HFpEF patients.

Methodology In compliance with PRISMA, systematic search of PubMed, Scopus, Embase, ScienceDirect, and Google Scholar was conducted for randomized controlled trials, cohort studies, case-control studies. Up to September 2024, investigating the effects of GSN ablation in HFpEF. Data on clinical outcomes were extracted and analyzed using RStudio (Team, 2024). Subgroup analyses were performed for follow-up durations at 1, 3, 6, and 12 months.

Results Six studies with 116 participants were included. The analysis revealed significant improvements in clinical outcomes, including the 6-minute walk test distance, Kansas City Cardiomyopathy Questionnaire scores (reflecting quality of life), pulmonary capillary wedge pressure (PCWP), diastolic blood pressure (DBP), and the E/E' septal ratio, indicating improved diastolic function. However, no significant changes were observed in NT-pro BNP levels, estimated glomerular filtration rate (eGFR), left ventricular ejection fraction, resting heart rate, or systolic blood pressure (SBP). Subgroup analyses were performed to explore variations across follow-up durations and outcomes. Mean differences with 95% confidence intervals were calculated using a fixed-effects model, and heterogeneity was assessed using the I² statistic.

Conclusion In review Endovascular GSN ablation shows promising benefits in improving health status and hemodynamic in HFpEF patients, with significant improvements in NYHA class, DBP, PCWP, E/E' septal ratio, KCCQ, and 6MWT. However, some heterogeneity across studies highlights the need for further research on its long-term efficacy and safety, particularly compared to standard therapies.

Keywords: Endovascular Ablation, Right Greater Splanchnic Nerve (GSN), heart failure with preserved ejection fraction (HFpEF).

Impact of Academic and Non-Academic Stressors on Depression, Anxiety, and Stress Among Medical Students in Karachi: A Cross Sectional Study.

Name of Authors: Emaan Nasir, Laiba Masood, Laiba Qazzafi, Tuba Maqsood, Bariah Adil, Aqsa Naseem, Inshara Ali, Noor ul Husnain, Tooba Rawasia, Rimsha Anjum, Ayesha Rizwan, Siddiqua Shahid, Sumayya Faheem, Tooba Saeed, Areeba Amjad.

Affiliation: Karachi Metropolitan University.

ABSTRACT

Introduction Medical students often face significant mental health challenges due to various stressors. Identification of the key academic and non-academic factors is essential for effective intervention.

Objective To assess the impact of academic and non-academic stressors on depression, anxiety, and stress levels among undergraduate medical students and to evaluate related lifestyle factors.

Methodology A cross-sectional study was conducted among medical students from public sector medical colleges in Karachi using an online survey. Psychological distress was measured using the Depression, Anxiety, and Stress Scale-21 (DASS-21) [1], while stressor impact was assessed via a Likert scale (0-5) [2]. Statistical analyses, done using SPSSv16, included Spearman's correlation, quantile regression, chi-square tests, Kruskal-Wallis, and Mann-Whitney U tests.

Results Of 456 participants, 66% reported depression, 68% anxiety, and 51% stress. Gender and age showed no significant differences. MBBS students reported higher distress than BDS students although it was statistically insignificant. All stressors showed a significant association with each, depression, anxiety, and stress. High-impact stressors included academic content, learning practices, academic achievement, emotional well-being, health status, and home environment. Academic stress strongly predicted depression and became a major factor for anxiety at higher distress levels on regression analysis while non-academic stress consistently influenced all outcomes. Poor sleep, lack of recreation, unhealthy diet, and limited social support had a significant association with depression, anxiety, and stress.

Conclusion & Recommendations Academic and non-academic stressors significantly affect students' mental health. Non-academic stress has a steady impact, while academic stress intensifies severe cases. Institutional mental health support, stress management, and healthy lifestyle promotion are needed.

Keywords: Medical students, stressors, mental health, depression, anxiety, stress, DASS-21.

PREVALENCE OF SYMPTOMS OF ATTENTION-DEFICIT HYPERACTIVITY DISORDER AND EFFECT ON ACADEMIC PERFORMANCE IN MEDICAL STUDENTS OF TWIN CITIES, PAKISTAN: A CROSS-SECTIONAL SURVEY

Name of Authors: Maryam Fatima, Fatima Tul Zahra, Nayab Abrar, Abdullah Ahmad Khan Niazi, Maryam Qayyum, Dr. Shumaila Humayun

Affiliation: Foundation University Medical College, Islamabad

ABSTRACT

Introduction Attention deficit hyperactivity disorder (ADHD) is one of the leading mental health disorders that substantially impacts daily functioning and academic performance, leading to multifaceted challenges in social and educational experiences. grounded in the need for targeted interventions, the primary aim of this study was to assess the prevalence of ADHD symptoms and the impact of ADHD on academic performance in medical students, to combat this growing concern in the younger population.

Methodology A cross-sectional study was conducted among medical students in the twin cities using convenience sampling. the sample size was calculated using Raosoft sample size calculator, yielding a minimum of 377 subjects. an online questionnaire was used, distributed to the target population, consisting of demographic information, the who 18-item adult ADHD self-report scale (asrs-v1.1), and the academic performance scale (aps). data analysis was performed using spss 26.0, following ethical approval and obtaining informed consent.

Results The studies found that 27.4% of medical students (111 out of 405) had adult ADHD, with mixed dominance being the most prevalent presentation (55.85%), followed by inattentive dominance at 44(39.63%) and hyperactive dominance at 5(4.50%) similarly, 45% reported moderate academic performance, 38.7% good, 11.7% poor, and 4.5% excellent. a statistically significant association was found between ADHD and impaired academic performance ($p < 0.05$). ADHD was significantly associated with several factors, including family history, screen time, sleep issues, anxiety, diet, and exercise habits ($p < 0.05$).

Conclusion this research underscores the substantial presence of unrecognized adult ADHD in Pakistani medical students, marked by a predominance of mixed symptoms, and advocates for the incorporation of formal ADHD screening strategies. this study also highlights the detrimental impact of ADHD on academic performance. Therefore, it is essential to emphasize this issue to implement strategies that enhance outcomes and foster confidence among students.

Keywords : Attention Deficit Hyperactivity Disorder, Academic Performance, Medical students, Prevalence.

Overall Adherence in Hemodialysis Patients and Associated Factors: A Cross-Sectional Study in Pakistan

Name of Authors: Fatima Nazir, Farhan Nazir

Affiliation: Rawalpindi Medical University

ABSTRACT

Introduction Patient adherence to treatment regimens is paramount to improve outcomes for patients undergoing hemodialysis; however, nonadherence remains a persistent issue. Very few studies have been published examining adherence behaviors of patients in low and middle-income countries, including Pakistan.

Objective To examine overall adherence and the factors relating to adherence among hemodialysis patients in Pakistan.

Methodology A cross-sectional study of 385 patients undergoing maintenance hemodialysis was completed in four publicly funded dialysis centers from May and August 2025. Sociodemographic and clinical data were collected from patients via interviews and medical records. Adherence was measured using the End-Stage Renal Disease Adherence Questionnaire (ESRD-AQ). Multiple logistic regression was undertaken to identify independent predictors of adherence.

Results The mean overall adherence score was 939.0 ± 182.7 (Range 250-1100) out of 1200. More than half (55.3%) of the patients had good adherence, while 34.6% had moderate adherence and 10.1% had low adherence. Medication adherence was highest, and fluid restriction adherence was lowest. In multivariable analysis, younger age (18-65 years; AOR 24.7, 95% CI 1.44-565), female gender (AOR 9.0, 95% CI 2.69-41.8), and being married (AOR 7.02, 95% CI 1.73-30.2) were independently associated with higher adherence. Higher education was a protective factor for low adherence, and higher interdialytic weight gain (≥ 2.5 kg) was associated with low adherence.

Conclusion More than half of hemodialysis patients in Pakistan show good adherence, with medication adherence the most satisfactory and fluid restriction the most difficult. Sociodemographic, particularly age, gender, marital status, education, and weight management, have a significant number of associations with adherence. There is a need to have targeted interventions that consider these determinants of adherence to maximize patient outcomes in resource-constrained environments.

Keywords: Hemodialysis, treatment adherence, ESRD-AQ, Pakistan, predictors, fluid restriction

AI at Your Fingertips: Smartphone-Based Detection of Anemia from Nail-Bed Images

Name of Authors: Ishaal Akbar.

Affiliation: Bahria University Medical College Islamabad

ABSTRACT

Introduction Anemia affects nearly one-third of the global population, with the highest prevalence in women and children, especially in low-resource settings. Conventional diagnosis relies on invasive blood testing, which is often inaccessible. Nail-bed pallor is a recognized clinical sign of anemia but suffers from subjectivity. This study aimed to develop and evaluate a smartphone-based artificial intelligence (AI) classifier for detecting anemia from nail-bed images, offering a non-invasive, low-cost screening alternative.

Methodology This diagnostic research project utilized two publicly available datasets: the Ghana Nail-Bed Dataset (n = 710) and the RGB Skin and Nail Dataset (n = 250+). Images were labeled based on laboratory-confirmed hemoglobin values, with anemia defined as Hb <12 g/dL. Approximately 960 images were balanced between anemic and non-anemic classes. A convolutional neural network (CNN) was trained using Google Teachable Machine, requiring no coding expertise. Data augmentation and color normalization were applied to mitigate variability in skin tone and lighting. Ethical approval was not required as data were anonymized and publicly available.

Results The trained classifier achieved an accuracy of 87%, with sensitivity of 89% and specificity of 85%. Receiver Operating Characteristic (ROC) curve analysis showed an area under the curve (AUC) of 0.92. On an independent test set of 50 images, the model correctly identified 44 cases, demonstrating strong generalizability.

Conclusion & Recommendations This study demonstrates that smartphone-based AI can accurately screen for anemia using simple nail-bed images. The tool is portable, cost-effective, and suitable for community and remote healthcare settings. Limitations include dataset diversity and potential variation in image quality. Larger multicenter validation studies are recommended to refine performance and ensure clinical applicability.

Keywords : Anemia; Artificial Intelligence; Smartphones; Diagnostic Screening; Nail-bed Images

A Unique Case of Self-Resolving Multiple Intestinal Intussusceptions Concurrent with Inflammatory Gallbladder Polyps in an Adult

Name of Authors: Aiman Amir, Boenish Sabir , Gulzeryam Muneer.

Affiliation: Rawalpindi Medical University

ABSTRACT

Introduction Intestinal intussusception is the inversion of a segment of the proximal intestine into the distal lumen. Although common in children, it is rare in adults, with an incidence of 1-3 per 1,000,000 population annually. Adult intussusception often presents with non-specific symptoms such as abdominal pain, vomiting, and altered bowel habits, which may delay diagnosis. Complications include obstruction and vascular compromise. While many cases are identified during exploratory surgery, imaging modalities such as ultrasound and CT scan aid in preoperative detection.

Objective To report a rare case of adult intestinal intussusception associated with gallbladder pathology and highlight the diagnostic challenges in such presentations.

Methodology (Case Presentation) A 41-year-old male presented with a 5-month history of abdominal pain, alternating diarrhea and constipation, and abdominal distension. Examination revealed mucosal pallor with otherwise unremarkable systemic findings. Laboratory results showed anemia and lymphocytosis. Imaging identified multiple intestinal intussusceptions in four regions and echogenic foci in the gallbladder. Laparoscopic cholecystectomy revealed a densely adherent gallbladder. Exploratory laparotomy did not demonstrate active intussusceptions but rather abnormal constrictions of the bowel, suggesting spontaneously resolved past intussusceptions.

Results The findings indicated multiple prior intestinal intussusceptions that had resolved without intervention, alongside gallbladder pathology. No malignant lesions were detected intraoperatively.

Conclusion Adult intussusception is rare and often associated with benign or malignant neoplasms but may present with unusual comorbidities such as gallbladder disease. Thorough evaluation and follow-up are essential to prevent missed recurrences and ensure timely management.

Keywords : Adult intussusception, Gallbladder pathology, Spontaneous resolution, Abdominal pain, Case report

The Influence of Artificial Intelligence Tools on Study Habits and Concept Retention in Undergraduate Medical Students: A Cross-Sectional Study

Name of Authors: Zainab Yahya

Affiliation: Bahria University College of Medicine, Islamabad

ABSTRACT

Introduction AI tools like Chat GPT and Med GPT are increasingly being used by medical students to simplify complex topics and prepare for exams efficiently. While they offer quick solutions and support last-minute revision, concerns remain about their effect on traditional study habits and long-term concept retention. In a field where deep understanding and diagnostic reasoning are essential, it is vital to assess how AI impacts sustained academic learning. This study aims to explore the usage patterns of AI-based educational tools among undergraduate MBBS students and to assess their perceived impact on study consistency, concept clarity, and long-term retention of medical knowledge.

Methodology This cross-sectional study was conducted among undergraduate MBBS students aged 18-25 years from medical colleges. A structured questionnaire adapted from validated literature and piloted for clarity and reliability was used. It assessed key domains such as awareness, attitudes, behavioral intentions, and perceived educational impact of AI tools. Ethical approval was obtained from the Institutional Review Board prior to data collection. Responses were collected from over 110 students (still going on) using cluster random sampling.

Results Out of 110 participants, 85% reported regular use of AI tools for academic purposes. Approximately 76% agreed that AI helps in clarifying difficult concepts, and 69% stated it improves exam preparation. However, only 42% felt confident about long-term concept retention with AI-assisted learning. Around 60% admitted they often rely on AI during last-minute revisions rather than consistent study routines. Despite high short-term satisfaction, 55% expressed concerns over decreased self-reliance and retention. A moderate positive correlation was found between frequency of AI use and perceived short-term understanding ($r \approx 0.52$). These results indicate AI is widely used for rapid understanding and last-minute revision but may hinder deep learning and sustained retention.

Conclusion This study highlights the growing influence of AI tools on the academic behavior of medical students. AI tools significantly influence the academic habits of medical students, offering short-term benefits but raising concerns about sustained learning. A balanced, mindful approach to AI-assisted learning is essential to cultivate deep conceptual understanding and diagnostic reasoning in future medical professionals.

Keywords: Artificial Intelligence; Medical Education; Study Habits; Concept Retention; Students, Medical

Case of biliary stent migration- when treatment becomes disease

Name of Authors: Naeem Ahmad Khan, Makhdoom, Muhammad Shozab

Affiliation: Fazaia Medical College

ABSTRACT

Introduction Gallstones are a common issue in developed countries with a prevalence of 10% to 15% and an overall cumulative incidence formation of 0.60% per year. ⁽¹⁾ Endoscopic retrograde cholangiopancreatography (ERCP) with biliary stent placement is a well-established therapeutic approach for managing various biliary disorders, including choledocholithiasis, strictures, and malignant obstructions. While generally effective, ERCP carries the risk of complications, among which **post-ERCP pancreatitis** is the most frequent and clinically significant. Several patients- and procedure-related factors have been associated with this complication, and biliary stenting itself has been identified as an independent risk factor. Stent insertion shows better results when compared with T-tube drainage and primary duct closure in terms of postoperative hospital stay and hospitalization cost. It is the prior option for the choledochotomy closure after LCBDE in suitable patients. ⁽²⁾ In addition to pancreatitis, stent placement can lead to less common but equally challenging complications such as stent migration, which may result in recurrent obstruction, cholangitis, or even perforation ⁽⁵⁾. Recognizing and managing these complications is crucial, as they can transform a therapeutic intervention into a new source of morbidity.

Methodology A 44-year-old female, presented with severe abdominal pain. Investigations confirmed acute pancreatitis secondary to choledocholithiasis. She underwent ERCP with insertion of two biliary stents, after which her condition initially improved, and she was discharged. On follow-up, she developed progressive obstructive jaundice, and imaging revealed migration of the stents as the underlying cause. She subsequently underwent a complete cholecystectomy (having had a prior subtotal cholecystectomy in February 2025), with ductal clearance performed simultaneously. Owing to persistent concerns, CBD exploration and laparoscopic choledochoscopy were also carried out, ensuring complete biliary clearance.

Her postoperative recovery was complicated by pneumonia, for which supportive management was provided, including an attempted pleural tap. The patient gradually improved and was successfully discharged in stable condition, with advice for follow-up.

Discussion and conclusion

ERCP with biliary stent placement is an effective treatment for biliary obstruction but carries risks. While post-ERCP pancreatitis is most common, stent migration, though rare, can cause serious morbidity (3) (4). In this case, the patient underwent ERCP with dual stent placement for choledocholithiasis in the setting of acute pancreatitis. Although initially improved, she later developed obstructive jaundice due to stent migration, necessitating complete cholecystectomy, ductal clearance, and CBD exploration. The course was further complicated by postoperative pneumonia, illustrating how secondary complications can extend morbidity and recovery.

This case underscores the need for vigilance after stent placement, as timely recognition and intervention are essential. Careful patient selection, appropriate stent choice, and structured follow-up help minimize such complications.

Key words: Stent migration, choledocholithiasis, Pancreatitis

Role of Social Media in Prevalence of Body Dysmorphic Disorder in Young Adults: A Cross-Sectional Study

Name of Authors: Sana Batool, QMC Bahawalpur Mushayyada Altaf,¹ Sana Batool,² Ayesha Malik,² Sana-e-Urooj,² Sana Azhar,² Abdul Haseeb Majid,²

Affiliation: Quaid e Azam Medical College Bahawalpur

ABSTRACT

Introduction Body dysmorphic disorder (BDD) is a mental illness where people are excessively concerned about perceived minor flaws in their physical appearance ¹. The emergence of image-based social media can be a trigger and still it is understudied in Pakistan ^{2,3}. This study aimed to address this gap and explore the prevalence of BDD among young adults influenced by the overuse of image-centric social media platforms.

Methodology A cross-sectional study was conducted on undergraduates from multiple medical colleges in Pakistan over 6 months (March-August 2025). A sample size of 284 individuals was taken using Probability, simple random sampling. Open Epi app was used to calculate sample size. Participants aged 18-30 who were active social media users were included, and those with pre-existing psychiatric disorders were excluded. Following IRB approval (No.290/DME/QAMC Bahawalpur), data was collected through a questionnaire distributed via online Google forms. This questionnaire included demographic details, pattern of social media usage, perception of appearance, emotional and behavior impact and self-reflection with CRONBACH'S Alpha 0.772. Incomplete responses were not included. To ensure confidentiality, informed consent was taken from all participants. Data analysis was done using SPSS version 26, and Pearson Chi-square test was applied to determine associations.

Results Among 284 participants, 7.7% (SPSS version 26) of them had BDD. Those with higher prevalence were females (8.9%) than males (6.3%; $p=0.43$). Prevalence was highest in the >6 hours/day group (14.7%, $p=0.056$) of social media use. BDD was closely related to perceived adverse social media effects ($p<0.001$), following beauty influencers ($p=0.004$), and regular photo-editing ($p<0.001$). Cosmetic care-seeking was not significantly related ($p=0.83$).

Conclusion & Recommendations The study revealed a prevalence of 7.7% and a statistically significant association between the use of social media and BDD. The majority has reported body image negatively affected by social media hence the need to create awareness and promote positive mental health.

Keywords :Mental illness or "Mental Disorders"[Mesh] Young adults or "Young Adult"[Mesh] social media or "Social Media"[Mesh]

Development of urosepsis, post cholecystectomy after the insertion of T-tube- A case report

Name of Authors: Muhammad Bin Zafar, Fatima Ishfaq.

Affiliation: Fazaia Medical College

ABSTRACT

Introduction The rationale for using a T-tube is to ensure biliary decompression, facilitate healing of the choledochotomy, and create a track lined by granulation and fibrous tissue. The use of a T tube is associated with several complications, but the development of urosepsis is the rarest complication of using a T tube. ⁽¹⁾

Urosepsis is a life-threatening condition that occurs mostly due to a UTI. It occurs due to the spread of bacterial infection in the bloodstream and has a high risk of mortality if not treated in time. Though with improving surgical experience and technological advances, bile duct injuries (BDIs) might still occur at a frequency ranging between 0.1 and 5.2%, with the highest percentages reported in the context of acute cholecystitis compared to the 0.2-0.3% rate historically documented in open cholecystectomy (OC).

Methodology A 60-year-old woman, a known case of diabetes mellitus, hypertension, and CKD, underwent cholecystectomy. The drain was placed after the surgery. The patient presented with the symptoms of high-grade fever, along with chills, nausea, cough, vomiting, and low oral intake after 6 weeks. On examination, the patient was lethargic and jaundiced. Results of CBC, CST, LFTS, and RFTS confirmed the diagnosis of Urosepsis. Later, she developed an old CVA, which caused a decrease in GCS and mobility. The immobility led to the development of bed ulcers in the buttock region. She was treated with antibiotics, proton pump inhibitors, tPA, blood transfusions and is now in better health.

Conclusion The viability of the T tube is 2 weeks, after which it becomes extremely harmful concerning the spread of infection. Along with the co-morbidities, the patient was at high risk of sepsis. Urosepsis is extremely rare due to the T tube. Previously reported cases frequently feature bile leak (leading to biliary fistula, ascites, or peritonitis), infection (like cholangitis), tube dislodgement, obstruction, or duodenal erosion by the tube, pancreatitis, and fragment retention if the tube breaks during removal. ⁽²⁾ The expected contributions of postoperative complications of T-tube usually range from 5 to 20%. Laparoscopic primary closure of the CBD and over pigtail J and ENBD tubes are easy and effective alternatives to T-tube placements; these procedures are safe and with great feasibility, they offer faster recovery time for patients and early discharge with lower hospital charge. ⁽⁴⁾

Keywords: T tube, urosepsis, Choledochotomy

Efficacy and Safety of Subthreshold Micropulse Laser Compared to Conventional Laser in Diabetic Macular Edema: An Updated Systematic Review And Meta-Analysis of Randomized Controlled Trials

Name of Authors: Muhammad Abdullah Masood^a, Anum Aslam^a, Laiba Masood^b,

Affiliation: Quaid-e-Azam Medical College, Bahawalpur, ^b Shahida Islam Medical and Dental College, Lodhran

ABSTRACT

Introduction Diabetic macular edema (DME) remains a leading cause of visual impairment in diabetic patients. Conventional laser photocoagulation has been the standard treatment, though associated with adverse retinal effects. Subthreshold micro pulse laser (SMPL) has emerged as a safer alternative with potential efficacy. This systematic review and meta-analysis aimed to compare the efficacy and safety of SMPL versus conventional laser therapy in DME.

Methodology A comprehensive search of PubMed, Cochrane Library, Embase, Scopus, and ClinicalTrials.gov was conducted for randomized controlled trials (RCTs) comparing SMPL with conventional laser in DME. The review adhered to PRISMA guidelines (PROSPERO ID: CRD420251080356). Risk of bias was evaluated using the Cochrane RoB 2 tool, heterogeneity with the I^2 statistic, and certainty of evidence through GRADE. A total of nine RCTs including 677 participants were analyzed.

Results For central macular thickness (CMT), pooled data from nine studies (677 participants) revealed no significant difference (Mean Difference [MD]: -0.65; 95% CI: -1.58 to 0.28; $I^2 = 0\%$, $p = 0.15$). Best-corrected visual acuity (BCVA), reported in seven studies (574 participants), demonstrated a modest but significant improvement with SMPL (Standardized Mean Difference [SMD]: 0.34; 95% CI: 0.17-0.51; $I^2 = 66\%$, $p = 0.0001$). Central subfield thickness (CST), analyzed in two studies (82 participants), showed a small improvement (MD: 0.70; 95% CI: -0.72 to 2.13; $I^2 = 0\%$, $p = 0.002$). Certainty of evidence was moderate to high for outcomes with no heterogeneity, but low for heterogeneous outcomes.

Conclusion SMPL provides modest visual benefits over conventional laser in DME, though anatomical improvements were inconsistent. Variability in laser protocols and limited follow-up restrict generalizability. High-quality, standardized RCTs with extended follow-up are warranted to refine treatment strategies.

Keywords: Diabetic Macular Edema; Micropulse Laser Therapy; Laser Photocoagulation; Visual Acuity; Randomized Controlled Trials

Association of Awake Bruxism with Tooth Wear and Occupational Stress Among Mechanical and Non-Mechanical Workers.

Name of Authors: Fatima Hafeez, Adeena Ayesha, Afrha Ashraf HI TECH WAH

Dr. Syeda Sameen Zehra Rizvi, Department of Prosthodontics,

Affiliation: Dental College HITEC-IMS, Taxila, Pakistan.

ABSTRACT

Introduction Awake bruxism, a dental and psychological health concern, is linked to physical and cognitive stress in mechanical workers, while non-mechanical workers may face higher stressors. The purpose of this analysis was to consider the association of awake bruxism with tooth wear and occupational stress in factory workers of Heavy Industries Taxila.

Methodology This descriptive cross-sectional study was conducted in Heavy Industries Taxila Factory, during a period of six months, in which 245 factory workers were enrolled. Using nonprobability consecutive sampling technique. Dental wear was assessed through the clinical examination tool BSE (bruxism Status Examination) scale by the principal investigator (BSE) after taking history using a questionnaire. Using SPSS 26 univariate and Multivariate analysis was done on factory workers involved in heavy machinery presenting with awake bruxism. The p-value of < 0.05 was taken as significant.

Results 122 (49.8%) of the 245 were non-mechanical workers, and 123 (50.2%) were heavy mechanical workers. According to the index, the total tooth wear (SD) was 3.1 ± 0.5 (2.9 ± 0.4 for non-mechanical workers and 3.3 ± 0.8 for mechanical workers). among which, 53 (43.6%) non-mechanical workers were categorized as grade 2 and 49 (40.0%) mechanical workers as grade 3. Moreover, mechanical workers had a higher prevalence of awake bruxism (56.4% versus 36.4%). Only 33 (27.3%) of non-mechanical workers acknowledged experiencing occupational stress, in contrast with 56 (45.5%) of mechanical workers. The number of instances of mechanical workers who reported having both conditions was three times higher than that of non-mechanical workers (23.6% vs. 7.3%).

Conclusion Awake bruxism tooth wear and occupational stress in participants working in a factory involved with heavy machinery exhibited significant association.

Keywords: Tooth Wear, Dental Attrition, Awake Bruxism

FOMO! An evolving epidemic in medical students.

Name of Authors: Maha Batool.

Affiliation: Central Park Lahore Medical College

ABSTRACT

Introduction FOMO (Fear of Missing Out) is a fear of not being included in something that others are experiencing. It is an emotional response to the belief that other people are living better, more satisfying lives than you. FOMO is a main type of problematic attachment to social media and is associated with a range of negative life experiences and feelings, such as a lack of sleep, reduced life competency, emotional tension, negative effects on physical well-being, anxiety, and a lack of emotional control. FOMO in medical students was suspected more than other students because of their tiresome routine and academic stress. It is not unique to medical students as they are experiencing this fear and may feel compelled to check social media more often to follow their friends' plans and activities that are not in any medical field. Different methods can alleviate FOMO which includes anxiety management, regulation of compulsive behavior, self-talk, expectation management, or enhancement of self-esteem etc.

Objective The objective is to determine the fear of missing out (FOMO) in medical students. Evaluation of mental health in the medical students who are suffering from FOMO and make them acknowledge this fear until it leads to serious mental illness.

Methodology It is a cross-sectional survey conducted among private medical colleges. The study population is a total of 300 medical students calculated via Open EPI. The study duration is 6 months. Ethical approval is taken by the institutional review board at CPMC. The method of data collection is through a structured questionnaire given by the FOMO scale, which was proposed by Przybylski, Murayama, De Hann, & Gladwell (2013). This scale refers to the participants between the ages of 18-62, Medical students(included)Students doing other degrees than MBB (excluded). **Necessity of FOMO scale** FOMO, as an empirical research topic, was first discussed in the field of psychology by Przybylski et al. (2013) in a study in which they aimed to determine the fears and anxieties of individuals from not being connected with the experiences in their large social circles.

Results The questionnaire filled by the participants concludes that most of the medical students are at the verge of getting into FOMO rather than having FOMO. There were 10 questions to evaluate this fear in the medical students, these were 'I fear when my friends have more rewarding experiences than me.', 'When I miss out on a planned get-together it bothers me', 'I get anxious when I don't know what my friends are up to.'

Such 10 questions were in the questionnaire and majority of the responses lie in the "slightly true of me" which interprets that we medical students know how to live a balance life.

Conclusion Irrespective of the huge academic syllabus along with the attendance pressure, the medical students are satisfied and not as such suffering from FOMO which is the outstanding behavior of medical students. Other people who are actually going through this fear of missing out should take lesson and motivation from the medical students.

Epidemiological Burden of Atrial Fibrillation and Flutter Attributable to Modifiable Risk Factors in the ASEAN Region:

A Global Burden of Disease Study 2021 With Forecasts to 2035

Name of Authors: Mirza Mohammed Ali Baig, Ibrahim Manzoor.

Affiliation: Islamic International Medical college

ABSTRACT

Introduction Atrial fibrillation and flutter (AF/AFL) are increasingly contributing to cardiovascular mortality in Southeast Asia, yet region-specific data on modifiable risk factors remain limited. The aim of this study was to assess the burden of AF/AFL attributable to modifiable risk factors across ASEAN countries using data from the Global Burden of Disease (GBD) Study 2021, with predictive mortality analysis through 2035.

Methodology Using data from GBD study 2021 for all 10 ASEAN nations, we quantified AF/AFL burden attributable to metabolic, behavioral, and environmental risk factors across 10 ASEAN countries from 1990 to 2021. Outcomes included age-standardized death rates (ASMR), Disability-adjusted life years (DALYs), Years of life lost (YLLs), and Years lived with disability (YLDs). Forecasts of mortality were generated using Autoregressive Integrated Moving Average (ARIMA) models to project ASMR through 2035.

Results From 1990 to 2021, age standardized DALYs for AF/AFL across ASEAN countries ranged from 31.8 to 39.4 per 100,000, with metabolic risk factors accounting for 69.7% of the total burden. In 2021, Indonesia had the highest metabolic DALYs (52.3 per 100,000), while Singapore had the lowest (12.4 per 100,000). Behavioral risks contributed substantially to DALYs in males, particularly in Vietnam (rising from 11.2 to 14.9 per 100,000) and Indonesia. Environmental/occupational risks contributed the least to DALYs across all countries. ASMRs from metabolic risks increased in Vietnam (1.26 to 2.06 per 100,000), Indonesia (1.37 to 2.52), and Malaysia (1.06 to 1.95), with projections indicating further rises through 2035. In contrast, Singapore exhibited declining ASMRs across all risk categories, with metabolic ASMR falling to 0.31 per 100,000 in 2021 and projected to reach 0.27 by 2035. Behavioral and environmental ASMRs followed similar patterns, with male populations experiencing higher burdens and Singapore consistently showing the lowest rates.

Conclusion AF/AFL in ASEAN populations is increasingly driven by modifiable metabolic and behavioral risks, with males disproportionately affected. Burdens rose sharply in Indonesia, Vietnam, and Malaysia, while Singapore achieved notable declines, reflecting effective public health strategies. Projected trends to 2035 signal escalating mortality and morbidity without targeted interventions. Prioritizing sex-specific, risk-factor-focused prevention is essential to curb AF/AFL-related health disparities and guide evidence-based policy and resource allocation across the region.

Keywords :Atrial fibrillation and flutter, age-standardized death rates, Disability-adjusted life years, Years of life lost, and Years lived with disability, forecasting mortality.

S2 Sacral Schwannoma: A Rare Case Report with Clinical Insights

Name of Authors: Muhammad Usman¹, Taimoor Ali¹, Muhammad Hamza¹, Umer Farooq Khawaja¹, Aymen Khawar¹, Abdul Wassay¹ Department of Neurosurgery,

Affiliation: PAF Hospital, Fazaia Medical College, Islamabad - Pakistan

ABSTRACT

Background Schwannomas are benign peripheral nerve sheath tumors that commonly arise from spinal nerve roots. The most common genetic cause is an autosomal dominant disorder comprising of NF2 gene mutation (Merlin protein) autosomal dominant disorder, and very rarely SMARCB1/INI1 mutation. Sacral schwannomas are rare, often presenting with non-specific symptoms, leading to delayed diagnosis. Their deep location and proximity to vital structures pose significant diagnostic and surgical challenges.

Case presentation We present a case of a 21-year-old female who presented to us with complaints of left leg pain, mild numbness in the perianal region and occasional difficulty in passing stool. MRI lumbosacral spine showed left S2 contrast-enhanced, about 4×3 cm lesion causing the scalloping of the S2 vertebral body. This clinical presentation justified the cause of her symptoms. After optimization, surgical excision done which resulted in symptomatic relief.

Conclusion In our case, the scalloping of S2 and the histopathology report, along with total excision of the lesion, led to our patient's symptomatic relief. Sacral schwannomas are rare and can mimic other sacral pathologies like perineural cysts, metastatic lesions, chordoma, and meningioma. Early recognition and complete surgical excision remain the cornerstone of treatment, with generally favorable outcomes. This case highlights the importance of considering schwannoma in the differential diagnosis of sacral masses to facilitate timely management.

Keywords: Sacral Schwannoma, Perianal numbness, Vertebral body scalloping, Chordoma.

Comparative Clinical Outcomes of Valve-in-Valve TAVI Versus Surgical Explanation for Failed Transcatheter Aortic Valve Implants:

A Systematic Review and Meta-Analysis

Name of Authors: Sadia Tameez ud Din

Affiliation: Foundation MU

ABSTRACT

Introduction Valve-in-Valve TAVI and surgical explanation are two widely used methods to manage failed transcatheter aortic valves. Both methods differ significantly in invasiveness and long-term complications. Previous studies are mostly focused on use of ViV-TAVI in management of failed surgical valves. On the other hand, this review study compares the current data on the clinical outcomes of individuals who receive surgical explanation vs valve-in valve TAVI following failed transcatheter aortic valve.

Methodology A thorough search was done for relevant studies on PubMed, EMBASE, SCOPUS, Cochrane Library and Clinicaltrials.org. The search included cohort studies from inception to 25/06/2025. The mean differences for continuous and risk ratios for dichotomous outcomes were combined using RevMan 5.4.1 software, with a 95% confidence interval using the random effects model. The Newcastle-Ottawa Scale was used to ensure quality assessment of cohorts.

Results The pooled meta-analysis showed a statistically significant lower incidence of stroke (OR 0.33, 95% CI 0.17, 0.63, $I^2=0\%$, $P=0.0009$), major bleeding (OR 0.08, 95% CI 0.06, 0.11, $I^2=0\%$, $P<0.00001$), new-onset A-fibrillation (OR 0.21, 95% CI 0.16, 0.28, $I^2=0\%$, $P<0.00001$) and a shorter length of postprocedural hospital stay (MD -5.67, 95% CI -7.47, -3.87, $I^2=0\%$, $P<0.00001$) in the patients who underwent ViV-TAVI. On the other hand, surgical explanation benefited by lower risk of major vascular complications (OR 0.1220, 95% CI 3.73, 39.87, $I^2=0\%$, $P<0.0001$), major valve event-free survival and 5-year survival. Incidence of new pacemaker implants (OR 1.24, 95% CI 0.35, 4.36, $I^2=80\%$, $P=0.74$), acute kidney injury (OR 0.49, 95% CI 0.21, 1.17, $I^2=50\%$, $P=0.11$) and all-cause mortality (OR 0.89, 95% CI 0.48, 1.67, $I^2=25\%$, $P=0.72$) in both groups showed no statistically significant difference.

Conclusion ViV-TAVI showed distinct short-term procedural benefits, including significantly lower rates of stroke, hemorrhage, atrial fibrillation, and hospital length of stay. Surgical explanation may improve hemodynamics and durability, although it has a higher early risk. Treatment decisions must therefore be individualized by a multidisciplinary team.

Keywords: Valve in valve TAVI, aortic valve implants, surgical explanation, hemorrhage, atrial fibrillation

Patient-Centered Care evolved into the Hybrid Health Systems

Name of Authors: Muzaina Atif.

Affiliation: Bahria University College of Medicine

ABSTRACT

Introduction Health systems globally face rising demands from increasing populations, chronic diseases, and inequitable access. Traditional models of delivering care often fail to meet these challenges. The integration of innovative technologies with existing clinical pathways offers a unique opportunity to transform healthcare into a more patient-centered care one, that is an accessible, and efficient system. This study explores how evolved health systems - blend digital platforms with in-person care - and reshape the delivery of care, improve outcomes, and reduce disparities.

Methodology A mixed-methods design was adopted, combining a scoping review of 45 peer-reviewed studies with a qualitative analysis of interviews from 20 healthcare providers across primary, secondary, and tertiary care levels. Quantitative metrics on patient engagement and clinical outcomes were synthesized, while thematic analysis was employed to explore frontline perspectives on innovation-driven integration.

Results Findings revealed that hybrid care models increased patient adherence by 27% and reduced missed appointments by 34%. Providers reported improved coordination across specialties and faster clinical decision-making with integrated digital records. Challenges included digital literacy gaps in vulnerable populations and resistance to workflow redesign among healthcare staff.

Conclusion & Recommendations Hybrid systems that unite digital innovation with traditional care pathways can significantly enhance patient-centered healthcare. To ensure equity, investments must focus not only on technology but also on training, accessibility, and community engagement. Policy frameworks encouraging interoperability and incentivizing integration are crucial to sustain transformation.

Keywords :Health system integration, hybrid care, digital innovation, patient-centered care, healthcare equity

Quantifying the Impact of Urban Green Wall Installations on Microclimate Regulation and Particulate Matter (PM_{2.5}) Sequestration in a Dense City Center

Name of Authors: Muhammad Muaaz

Affiliation: Bahria University College of Medicine

ABSTRACT

Introduction Rapid urbanization exacerbates the Urban Heat Island (UHI) effect and air pollution, posing significant public health risks. While green infrastructure is a proposed solution, empirical data on the immediate, quantifiable impact of vertical greening systems (green walls) in ultra-dense urban canyons is limited. This study measured the effects of a newly installed extensive green wall on ambient temperature, relative humidity, and particulate matter concentration.

Methodology A pre-post intervention study was conducted over six months in a dense urban canyon (aspect ratio H/W > 2) in a major metropolitan city. A 150 m² modular green wall system with drought-tolerant succulents (*Sedum* spp.) was installed on a south-facing building facade. Microclimate variables (temperature, relative humidity) and PM_{2.5} levels were simultaneously collected at 1-meter and 10-meter distances from the wall, and at a control site, using calibrated wireless sensors. Data was analyzed using paired t-tests and linear regression models.

Results Preliminary results indicate a statistically significant ($p < 0.01$) mean reduction of 1.8°C in ambient temperature at the 1-meter distance during peak insolation hours (12:00-16:00) compared to the control site. Relative humidity increased by an average of 5.2%. PM_{2.5} concentration showed a 15% reduction ($p < 0.05$) at the 1-meter distance following rainfall events, suggesting a synergistic wash-off effect with the vegetation's filtering capacity.

Conclusion & Recommendations extensive green walls can effectively mitigate microclimatic extremes and reduce particulate pollution in densely built environments, even with a relatively small surface area. Urban planners and policymakers should integrate vertical greening into mandatory building codes and sustainability frameworks to enhance urban resilience and public health.

Keywords: Urban Heat Island, Particulate Matter, City Planning, Conservation of Natural Resources, Environmental Monitoring

Understanding Individual Choice: A Comparative Analysis of Pharmacological and Non-Pharmacological Interventions in Primary DysmenorrheaA Cross-Sectional Study within Twin Cities of Pakistan (Islamabad, Rawalpindi)

Name of Authors: Barina Mustafa, Bareera Waheed.

Affiliation: Wateem Medical college

ABSTRACT

Introduction Primary dysmenorrhea (PD), defined as painful menstruation without underlying pathology, is the most prevalent gynecological complaint among young women [1]. It adversely affects academic performance, daily activities, and quality of life [2]. Management strategies vary, ranging from pharmacological interventions (NSAIDs, acetaminophen, hormonal therapy) to non-pharmacological approaches (heat therapy, exercise, yoga, herbal remedies) [3]. While pharmacological methods provide rapid relief, concerns about side effects and accessibility drive many women toward alternative or combined approaches. This study aimed to compare pharmacological and non-pharmacological strategies, identify factors influencing treatment choice, and assess effectiveness and satisfaction among women with PD.

Methodology A cross-sectional analytical study was conducted over six months among 369 females aged 15-30 years in Islamabad and Rawalpindi. Convenience sampling was applied, and the sample size was calculated using Open Epi with a 95% confidence interval, 5% margin of error, and anticipated frequency of 53.5% [2]. Data were collected through a structured questionnaire assessing intervention type, usage frequency, perceived effectiveness, speed of relief, satisfaction, and influencing factors. Statistical analysis was performed to evaluate associations between intervention type and reported outcomes.

Results Pharmacological interventions were the most used (74%), primarily NSAIDs like mefenamic acid and ibuprofen, valued for rapid relief. However, only 26% found them highly effective, and 38% reported side effects such as gastrointestinal discomfort and fatigue. Non-pharmacological methods (43%), including heat application, herbal remedies, yoga, and exercise, were associated with higher satisfaction (67%) and better long-term outcomes. Combination therapy was reported by 31% and often resulted in improved satisfaction. Significant associations were found between non-pharmacological interventions and pain relief ($p=0.000$) and between both intervention types and rapid relief ($p=0.000$). Key factors influencing choice included perceived effectiveness (76%), accessibility (61%), previous experience (52%), and peer or healthcare provider advice (48%).[2]

Conclusion Pharmacological methods remain widely used for Primary dysmenorrhea [1], but non-pharmacological approaches provide higher satisfaction and long-term benefits[2]. Integrating both strategies within patient-centered, culturally sensitive care and increasing awareness of safe non-pharmacological options may optimize outcomes and adherence.[3]

Keywords: Primary Dysmenorrhea; Pharmacological Therapy; Non-Pharmacological Therapy; Menstrual Pain; Patient Satisfaction

Tigecycline for Extensively Drug-Resistant Typhoid: In vitro Evidence and Clinical Relevance

Name of Authors: Samaha Khalid, Malik Aon Ali Abbas.

Affiliation: Foundation Medical University

ABSTRACT

Introduction *Salmonella enterica* serovar Typhi, a Gram-negative bacillus causing enteric fever, poses an increasing global health threat due to rising antimicrobial resistance. The emergence of extensively drug-resistant (XDR) strains, resistant to nearly all first- and second-line antibiotics, has left azithromycin and carbapenems as the last remaining options. This study evaluates the in-vitro susceptibility of XDR *S. Typhi* to tigecycline, a broad-spectrum agent effective against MDR pathogens, to inform treatment choices and strengthen resistance surveillance.

Methodology This retrospective cross-sectional study was conducted at Fauji Foundation Hospital, Rawalpindi, from July 2024 to June 2025. A total of 99 XDR *S. Typhi* blood culture isolates were analyzed from patients aged 1-70 years, selected through consecutive non-probability sampling. Among these, 60 isolates underwent tigecycline susceptibility testing using EUCAST disk diffusion using Mueller-Hinton agar. Since specific breakpoints are lacking for *S. Typhi*, non-species-related breakpoints were applied. Data analysis was performed using SPSS v27.0.

Results Of the 99 XDR *S. Typhi* blood culture isolates that were obtained, pediatrics accounted for 57.6%, medicine for 29.3%, and surgery for 13.1%. Males made up 56.6%, with the 1-10 age group predominating (47.5%) and followed by the 11-20 age group (31.3%). 2024 had a peak in infections in April (18.2%) and May (17.2%). The XDR status was confirmed by the fact that all isolates were resistant to ampicillin (66.7%), ceftriaxone (69.6%), chloramphenicol (79.4%), ciprofloxacin (78.4%), and co-trimoxazole (77.4%). In addition to imipenem (100%, n=80) and meropenem (100%, n=59), tigecycline demonstrated 100% susceptibility (n=60), demonstrating its effectiveness against XDR *S. Typhi*.

Conclusion

Tigecycline exhibited complete in vitro efficacy against XDR *S. Typhi* isolates, supporting its potential role in managing resistant infections, especially among pediatric cases. Maintaining the utility of last-line agents demands strong antimicrobial stewardship and further research into resistance mechanisms and optimized dosing in resource-limited settings.

Keywords : Extensively Drug-Resistant (XDR) Typhoid, Tigecycline, *Salmonella Typhi*, Antimicrobial Resistance (AMR), In vitro Susceptibility

Title: The Diagnostic Accuracy of AI-Driven Eye Movement Analysis for Neurological Disorders: A Systematic Review

Name of Authors: Laiba Nabeel
Affiliation: Bahria University Medical College

ABSTRACT

Introduction Neurological disorders like Parkinson's (PD) and Alzheimer's (AD) are often detected late. Artificial intelligence (AI) offers a novel approach by diagnosing these conditions through subtle eye movement alterations. This review assesses the diagnostic accuracy of AI models using eye-tracking for neurological disorders.

Methodology This systematic review followed PRISMA guidelines. We searched PubMed, IEEE Xplore, and arrive for studies published from 2015-2025. Included studies used AI to diagnose PD, AD, or schizophrenia via eye-tracking. Data on sample size, AI model, and accuracy metrics were extracted. Quality was assessed using QUADAS-2. Analysis involved narrative synthesis of accuracy, sensitivity, and specificity.

Results Twenty-three studies with a total pooled sample of 4,892 participants were included. AI models, primarily convolutional neural networks and support vector machines achieved a mean pooled accuracy of 88% (range: 82-95%) in differentiating patients from healthy controls. For Parkinson's disease, saccade velocity was the most predictive feature, with a mean sensitivity of 89% and specificity of 91%.

Conclusion AI-based analysis of eye movements demonstrates high diagnostic accuracy for neurological disorders. To translate this promise into clinical practice, future research must prioritize larger, multi-center trials and standardized validation protocols.

Keywords Artificial Intelligence, Eye-Tracking, Neurological Disorders, Diagnosis, Systematic Review

Ascaris Lumbricoids in Augmented Urinary Bladder: A case report and review of the literature

Name of Authors: Makhdoom Mohammad Shozab Naeem Ahmad.
Affiliation: Fazaia Medical College

ABSTRACT

Introduction Soil-transmitted helminth infections, such as ascariasis, are common in developing countries and affect over a billion people worldwide. ⁽¹⁾ *Ascaris lumbricoides* infests the lung as a larva and the colon as an adult ⁽²⁾, although it has also been seen to migrate to the biliary tract, pancreas, peritoneum, and thoracic cavity. ⁽³⁾ The presence of *Ascaris* in the urinary system is extremely unusual, with only a few reports. We present a case of bladder ascariasis after augmentation cystoplasty and Mitrofanoff for neurogenic bladder.

Methodology A 30-year-old man with a history of high-pressure neurogenic bladder due to transverse myelitis underwent augmentation cystoplasty with Mitrofanoff. He had good postoperative recovery, even with catheters in situ, and he washed his bladder frequently. Later, he experienced slight urethral irritation with no other lower urinary tract symptoms and discovered a live 3-4 cm worm called *Ascaris lumbricoides* coming from the urethral meatus. Cystoscopy revealed no more worms or connection with the gut. He was treated with albendazole and currently completely healthy.

Conclusion Urinary ascariasis is extremely rare. Previously reported cases frequently featured fistulous communication or were associated with hematuria, flank discomfort, or obstructive uropathy. Our patient is remarkable in that the infestation developed after augmentation cystoplasty, with no signs of a fistula or any severe symptoms. This is the first recorded instance of bladder ascariasis in such a scenario.

Keywords Augmentation cystoplasty, *Ascaris lumbricoides*, Urinary tract Ascariasis

CONFERENCE ORGANIZING COMMITTEES

Conference coordinator: Dr Arshia Bilal

S. No	Committee	Faculty	Staff
1.	Invitation & Reception	Brig. Dr. Rizwan Hashim (Patho) Col. Shahzad Azam (Patho) Dr. Tahira Ayub (DME) Dr. Maryam Aziz (DME) Dr. Kanaz (Patho) Dr. Naima (Patho) 3 rd year/Final Year students	Mr. Ibrar (Patho) Mr. Fayyaz (Patho) Mr. Attaulah (Patho)
2.	Publication	Dr. Saleha Afridi (CM) Dr. Humera Usman (Biochem) Dr. Sobia Waqas (Physiology) Dr. Anzalna Asifa (Pharma) Dr. Fareeha Zafar (Anatomy)	Mr. Zahid Ur Rehman (Biochemistry)
3.	Scientific Review committee	Ms. Kanwal Qaisar (Principal Nursing College) Dr. Arshia Bilal (CM) Dr. Muhammad Usman (Neuro) Col Dr Nadia Latif (Physio) Dr. Ammara (Medicine) Dr. Umair Saeed (Patho) Dr. Zaryab Haider (CM)	Mr. Abdul Moiz (Physio) Mr. Imran (Nursing College) Mr. Wajahat Iqbal
4.	IT Committee	Dr. Maryam Sohail (Assessment Cell) Dr. Anum (Assessment Cell)	Mr. Shad Ahmed Ms. Tehniat Mr. Hamza Mr. Salman
5.	Admin + Security + Food + Hall Décor + Marquee arrangements	Dr. M. Inzamam Khalil (CM) Gp. Capt. Syed Farhat Ali Mr. Waqas + Mr. Rehman Abbas + Mr. Maratib Ali	Mr. Azmat Ali (Admin)
6.	Stage & Media Committee	Dr. Mahwish Akhtar (CM) Dr. Huzaifa Ali (Pharma) Dr. Ibrahim (Patho) Ms. Samavia Masood (CM) 3 rd year/Final year	Mr. Tariq (Patho)
7.	Result Compilation	Dr. Hina Zaid (Anatomy) Dr. Iffat Noreen (CM) Dr. Faryal Ishtiaq (Anatomy) Dr. Shoah Waheed (Anatomy) Dr. Urooj Ali (Anatomy)	Mr. Ataf (Anatomy)
8.	On Spot Registration	Dr. Nimra (Pharma) Dr. Shandana (Pharma) + Students	Mr. Adnan Younas (Pharma)
9.	Poster exhibition	Dr. Bushra Anwar (Patho) Dr. Farida Khurram (Patho) Dr. Zainab Mohsin (Anatomy) Dr. Zoha Khan (Physiology)	Mr. Touseef (Skill Lab)
10.	Discipline Committee	Dr. Anwar Ahmed (Forensic) Dr. Utban Ahmed (Forensic) Dr. Ayesha Afzal (Forensic) + coopted members + students of 3 rd year/final year students	Faisal Hayat Awan (Forensic)
11.	Hall In charge	Dr. Sadia Moazzam (Physio) Dr. Bushra Ghulam (Bio chem) Dr. Umme Farwa (Patho) Dr. Shahida (Physio) Dr. Ruqgia Bilal (Anatomy)	
12.	Rapporteurs	Dr. Maleeha Salik (Biochemistry)	Auditorium plenary session
		Dr. Farwah Aslam (Physio)	Hall A
		Dr. Amina Batool (Pharma)	Hall B
		Dr. Fizza Najeeb (Patho)	Hall C
		Dr. Maham Nasir (Anatomy)	Hall D
		Dr. Shazrah (Physio)	Hall E
13.	Report Compilation	Dr. Sadia Shoukat (Anatomy)	

COMPILED BY PUBLICATION COMMITTEE
Dr. Saleha Afridi (Community Medicine)
Dr. Humera Usman (Biochem)
Dr. Sobia Waqas (Physiology)
Dr. Anzalna Asifa (Pharma)
Dr. Fareeha Zafar (Anatomy)
Mr. Zahid Ur Rehman (Biochemistry)
Fazaia Medical College, Air University, Islamabad