



# **8<sup>th</sup> INTERNATIONAL CONFERENCE ON HEALTH PROFESSIONS EDUCATION**

**Conference Theme: Changing Horizons In Health Professions  
Education: What's Next?**

## ***ABSTRACT BOOK***

## Oral Presentations

### Assessment & Curriculum

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#### 1. Comprehensive Care Dentistry Models Defining Integrated Curriculum Pathways

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##### **Introduction**

Dental education within Pakistan requires a revision from discipline-driven numerical requirements to a patient-based comprehensive care curriculum for timely professional grooming of young graduates. Comprehensive care dentistry positively influences the quality of student learning as well as patient care, whereas its implementation demands intellectual and monetary investments.

##### **Methodology**

Multiple models of comprehensive care are presented to cater to the scarcity of educational resources within the allocated duration of the undergraduate program. The CCD educational plan can vary from a complete treatment provision by house officers only, at a designated clinical facility for real-life simulated teaching, to a respective departmental space allocation for comprehensive treatment provision. However, its inculcation from foundation years till graduation thoroughly satisfies the integrated curriculum implementation.

##### **Results**

The comprehensive care model prepares dental students to be supervised with a holistic approach to patient management in the earlier part of their educational years as compared to the traditional teaching model, which compels a dental graduate to experience the situation practically in their professional career, without any supervision. CCD offers convenient platforms for multidisciplinary collaborations coaxing the integrated curricular pathways.

##### **Conclusion**

Comprehensive care dentistry lies at the apex of quality innovations within health professional education. It ensures student-centered learning methodology, equivalent to global academic standards.

**Keywords:** Comprehensive Dental Care, Curriculum, Dentistry, Education

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#### 2. Empowering Medical Minds: The Role of Programmatic Assessment in Sparking Intrinsic Motivation

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### **Introduction**

Limited research exists on the direct impact of programmatic assessment on intrinsic motivation in medical education, despite its growing use. This study employs Self-Determination Theory (SDT) to explore how continuous low-stakes assessments, as opposed to traditional high-stakes tests, can enhance intrinsic motivation by influencing students' autonomy, competence, and relatedness.

### **Methodology**

Utilizing a sequential explanatory study, the research integrates quantitative data collected via the Intrinsic Motivation Inventory (IMI) with qualitative insights from semi-structured interviews. The IMI evaluates participants' interest, perceived competence, choice, and perceived pressure during an activity. For the qualitative part, 15 semi-structured interviews were conducted. This methodology allows for a detailed examination of the interplay between assessment structures and student motivation.

### **Results**

Fifteen students had a high level of intrinsic motivation, while 65 students showed a moderate level. Female students exhibit higher levels of interest, perceived competence, perceived choice, and tension compared to male students. The findings reveal that while continuous feedback and supportive educational relationships significantly strengthen student motivation, increased workload and limited autonomy have an adverse effect.

### **Conclusion**

This study concludes that well-designed programmatic assessments can significantly enhance student engagement and motivation, thus fostering a nurturing and productive educational atmosphere in medical schools.

**Keywords:** Programmatic Assessment, Intrinsic Motivation, Medical Education, Self-Determination Theory, Continuous Assessment, Student Engagement

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## **3. Mini-CEX: A Catalyst for Improving Orthodontic Competence of Residents**

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### **Introduction**

The College of Physicians & Surgeons Pakistan (CPSP) has recently introduced Workplace-Based Assessment (WBA) tools in various specialties. The mini-CEX tool is implemented by CPSP in Orthodontics from July 2023 onwards. The objective of study is to determine the effect of applying Mini-CEX for improving orthodontic history taking and clinical examination skills of postgraduate orthodontic trainees.

## **Methodology**

This quasi-experimental study was conducted at the Orthodontic department of de'Montmorency College of Dentistry (DCD), Lahore, from 1.7.2023 to 1.11.2023. The selected trainees were assessed over 3 months with a total of 3 mini-CEX encounters, with a one-month interval between each encounter for clinical skills. The trainees were allocated to assessors by random allocation. The pre-mini-CEX and post-mini-CEX mean scores of all the trainees were compared using a paired t-test.

## **Results**

Mean scores of all the Orthodontic trainees significantly improved in the post-mini-CEX as compared to the pre-mini-CEX encounter, following feedback from the second mini-CEX session. The mini-CEX was perceived to be acceptable and feasible to both the faculty and trainees.

## **Conclusion**

The mini-CEX is an effective tool for assessing and improving orthodontic history-taking and clinical examination skills of trainees.

**Keywords:** Mini-Clinical Evaluation Exercise (mini-CEX), WBAs, Orthodontics

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## **4. Exploring Factors Influencing Readiness for Interprofessional Education**

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### **Introduction**

Inter-professional education (IPE) is vital in enhancing association and teamwork between healthcare personnel, improving patient care, and providing better healthcare outcomes. For designing effective educational programs, it is critical to understand the factors that influence readiness for IPE.

### **Methodology**

This cross-sectional study was conducted from April to June 2024. A pre-designed, valid questionnaire was used and disseminated via Google Forms. The study population included doctors, dentists, physiotherapists, dieticians, and other allied health professionals recruited through purposive sampling. The questionnaire evaluated demographic characteristics, teamwork and collaboration, negative and positive professional identity, and roles and responsibilities. Data were analyzed using SPSS version 22, with results presented in terms of percentage and frequency, and ANOVA applied to identify significant differences among professions.

### **Results**

The sample comprised 205 participants, with 75 males and 130 females. The highest qualification varied, with MBBS/BDS (49.8%) being the most common. Professionally, 34.4% were doctors, followed by dentists (15.4%), dieticians (7.2%), physiotherapists (10.3%), and other health professionals (32.7%). Physiotherapists scored highest in teamwork and collaboration (mean =

4.57), positive professional identity (mean = 4.57), and roles and responsibilities (mean = 4.09). Doctors showed higher negative professional identity scores (mean = 3.06), indicating a greater reluctance towards readiness for IPE.

### **Conclusion**

This study signifies the varying degrees of readiness for IPE among healthcare professionals. Physiotherapists showed maximum readiness, while doctors were more reluctant. Well-designed IPE programs are required to address specific professional needs and attitudes for enhancing interprofessional collaboration.

**Keywords:** Interprofessional Education, Readiness, Healthcare Professionals, Teamwork, Collaboration, Professional Identity

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## **5. Exploring the Journey of Implementation of Integrated Anatomy Curriculum Adoption in MBBS First Year: A Qualitative Dive into UHS Affiliated Colleges**

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### **Introduction**

Traditional methods of teaching in medical education, such as rote memorization and lecture-based instruction, no longer meet the demands of contemporary healthcare. Recent years have witnessed a shift towards holistic and integrated teaching approaches to bridge the gap between theoretical knowledge and clinical practice. **Objective:** This study aims to identify specific challenges faced by anatomy teachers during the transition to an integrated curriculum and suggest solutions for these challenges.

### **Methodology**

The study design was qualitative and exploratory, which included ten participants from public and private sector medical colleges affiliated with the University of Health Sciences (UHS). Participants meeting the inclusion criteria were enrolled through a convenience sampling technique. A validated Integrated Curriculum Implementation Challenges Tool was used to conduct focus group discussions. Data were manually recorded and thematically analyzed to identify themes and subthemes.

### **Results**

Seven themes were derived from the data: lack of faculty development, shortcomings in future doctors, student adversities, disconnect among administration and faculty, leadership issues, burnout, and inadequate working environment. Faculty members complained that anatomy departments had inadequate staff and insufficient resources, which left them barely prepared and trained for the new curriculum. A significant amount of faculty resistance resulted from their minimal involvement in curriculum development. Additionally, changes led to an increase in workload, especially in anatomy, which affected the quality of instruction.

## **Conclusion**

Strategic initiatives focusing on faculty training, workload management, enhancing communication channels, timely feedback, and curriculum reforms are recommended to facilitate successful curriculum integration.

**Keywords:** *integrated anatomy curriculum, curriculum reforms, faculty development*

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## **6. Unlocking the Potential: Evaluating the Impact of Online Gamified and Non-Gamified Assessment Tools on Academic Performance, Motivation, Engagement, and Satisfaction in Undergraduate Medical Education**

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### **Introduction**

With the advent of technology-enhanced learning, gamification has emerged as a promising strategy to augment student engagement and motivation for formative assessments. This study investigates the effects of online gamified versus non-gamified formative assessment tools on undergraduate medical students' academic performance, motivation, engagement, and satisfaction.

### **Methodology**

Utilizing a comparative experimental design, this research involved 222 undergraduate medical students who were randomly assigned to two groups for the end-module assessments. Academic performance was measured through end-module assessment scores, and a questionnaire assessed the motivation, engagement, and satisfaction levels of the students with these platforms.

### **Results**

Students exposed to gamified assessments showed a significant improvement in academic performance and motivation compared to their non-gamified counterparts. The findings highlight the beneficial impact of gamified formative assessments in medical education, particularly in improving academic performance and student motivation. Qualitative analysis of open-ended responses provided valuable insights into students' experiences and preferences for Kahoot! and Socrative in assessment.

### **Conclusion**

This study advances the use of technology in medical education assessment and sets the stage for additional future research in this area. The results showed notable differences in academic performance and motivation between students on the gamified platform (Kahoot!) and those without the gamified approach (Socrative). Given the apparent positive influence of gamified designs on academic results and motivation, one cannot exclude the potential independent emergence of gamification as an assessment tool.

**Keywords:** *online assessment, gamification, student motivation, academic performance, technology-enhanced learning, medical education assessment*

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## 7. A Comparative Study of Assessing Readiness for Self-Directed Learning in Preclinical and Clinical Years of MBBS Students at Rashid Latif Medical College

**Nosheen Khurram**

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### **Introduction**

Self-directed learning (SDL) empowers students to independently assess and fulfill their educational needs, allowing them to improve their knowledge, skills, and attitudes. The aim of this study was to determine and compare the self-directed learning readiness between students of preclinical and clinical years in the MBBS program at Rashid Latif Medical College.

### **Methodology**

This study is a cross-sectional quantitative analysis using a pre-validated Self-Directed Learning Readiness Scale (SDLRS) among MBBS students at Rashid Latif Medical College, categorized into preclinical and clinical years. Data analysis was performed using SPSS 25, and a t-test was conducted.

### **Results**

The study reveals a significant difference in self-directed learning readiness between preclinical and clinical MBBS students, with preclinical students showing higher readiness. This distinction correlates with their engagement in an integrated versus traditional curriculum, as indicated by a p-value of 0.01 and a 95% confidence interval.

### **Conclusion**

This study demonstrated that although students in the clinical years are more mature and experienced, the readiness for self-directed learning is greater among preclinical MBBS students at Rashid Latif Medical College.

**Keywords:** *self-directed learning, preclinical, clinical, self-directed learning readiness scale*

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## 8. Perceptions of Medical Undergraduates about Socrative as an Online Assessment Technique in Enhancing Academic Performance and Attitude Modification

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### **Introduction**

Socrative allows teachers to involve their students in teaching and promote a spirit of learning and assessment to achieve learning outcomes. Academic performance and attitude modification are two vital parameters to observe student progress, which can be influenced by the efficient use of Socrative. **Objective:** The study aims to assess perceptions of medical undergraduates about

Socratic as an online assessment technique in enhancing academic performance and attitude modification.

### **Methodology**

A descriptive and non-interventional study was conducted after designing a questionnaire to explore the potential of Socratic in enhancing academic performance and attitude modification among students, using a 5-point Likert scale. Academic scores from the previous 10 online assessments of participants were collected to determine levels of academic performance. Attitude modification was assessed using the Rosenberg model.

### **Results**

The majority of students found Socratic interesting but reported issues with internet availability and connectivity. Most students experienced challenges such as lack of practical skills (80.5%), cheating (74%), delayed feedback (69%), and anxiety (65.5%), which negatively affected their academic performance and attitude. The level of achieved academic performance was more significant compared to attitude modification.

### **Conclusion**

Socratic promotes academic performance and positively modifies attitudes as both are interlinked. Academic performance can be further enhanced by improving attitude, as there remains a significant gap between the two, which can be addressed by efficiently using Socratic and addressing drawbacks and ethical concerns.

**Keywords:** *Socratic, formative assessment, academic performance, attitude modification*

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## **9. Impact of Rater Training on Outcome of Formative Assessment-Mini-CEX in Obstetrics and Gynecology Residents: Quasi-Experimental Study**

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### **Introduction**

The literature on rater training in medical education is diverse and limited, showing only minimal improvement in the psychometric properties of trainee evaluations when implemented. Further research is needed to evaluate the effectiveness of rater training on the reliability of the mini-Clinical Evaluation Exercise (mini-CEX) in medical education.

### **Methodology**

This quasi-experimental study was conducted in the Gynecology Department at Services Hospital Lahore. Three clinical scenarios involving a standardized patient and a resident were developed and recorded on video. A group of assessors evaluated the residents' clinical skills using the mini-CEX before and after a rater training workshop. Pre- and post-training assessment data were analyzed using SPSS version 23.



## **Results**

Pre-training assessments exhibited poor reliability (Cronbach's alpha = 0.090, 0.356, 0.006, respectively), whereas post-training assessments showed significant improvement (Cronbach's alpha = 0.809, 0.773, 0.739, respectively). Correlation analysis between pre- and post-training questionnaire scores was negative but significantly strong ( $R = -0.857$ ,  $p < 0.05$ ). Post-training results indicated enhanced internal consistency.

## **Conclusion**

This study underscores the importance of rater training in achieving consistent and reliable evaluations in formative assessments. It demonstrates that rater training workshops significantly enhance the reliability and internal consistency of mini-CEX assessments for gynecology residents. Implementing such training programs is recommended to improve the overall effectiveness of workplace-based assessments in medical education.

**Keywords:** *mini-CEX, rater training, workplace-based assessment*

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## Leadership and Professional Development

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1. **"The Spectrum of Authenticity: Evaluating Authentic Leadership Qualities in Lahore's Healthcare Managers through a Cross-Sectional Survey"**

**Mahham Janjua**

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### **Introduction**

This study, "The Spectrum of Authenticity," evaluates authentic leadership qualities among healthcare managers in Lahore. It emphasizes the significance of authentic leadership in enhancing work environments, improving staff performance, and fostering patient care. Using the Authentic Leadership Questionnaire (ALQ), the research identifies strengths and areas for development in leadership practices.

### **Methodology**

This cross-sectional survey involved 95 healthcare managers from tertiary care hospitals in Lahore, selected through non-probability convenient sampling. Participants, with at least five years of experience, completed the ALQ assessing four domains: self-awareness, internalized moral perspective, balanced processing, and relational transparency. Data were analyzed using SPSS.

### **Results**

The survey revealed that 36.8% of healthcare managers exhibited high self-awareness, while 34.7% demonstrated a strong internalized moral perspective. Additionally, 21.1% and 22.1% showed high proficiency in balanced processing and relational transparency, respectively. The overall mean ALQ score for participants was 56.37, indicating varying levels of authentic leadership qualities.

### **Conclusion**

Self-awareness emerged as the strongest authentic leadership quality among healthcare managers, followed by internalized moral perspective, relational transparency, and balanced processing. These findings highlight the need for targeted leadership development programs to enhance authentic leadership qualities, ultimately improving organizational effectiveness and patient care in healthcare settings.

**Keywords:** healthcare, managers, authentic leadership, tertiary care hospitals

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## 2. "Exploring the Attributes of Digital Leaders in Health Professions Education"

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### **Introduction**

Digital transformation (DT) is imperative in modern education, especially following the COVID-19 pandemic's acceleration of online learning. This study investigates the essential attributes of effective digital education leaders (DELs) in health professions education, aiming to refine digital leadership development and advance digital learning environments in healthcare education.

### **Methodology**

Semi-structured, in-depth, open-ended interviews were conducted with 18 health professions education leaders from medical and dental institutes in Pakistan. The participants, selected through purposive sampling, had experience in leading online/blended education systems. Interviews were conducted online, recorded, and transcribed verbatim. Manual thematic analysis was used, organizing codes into 13 sub-themes consolidated into three overarching themes through discussion and consensus.

### **Results**

Three themes emerged: social, strategic, and personal attributes. Social attributes included social intelligence, promotion of diversity, and networking intelligence. Strategic attributes encompassed innovative vision, digital intelligence, adaptability, and flexible leadership style. Personal attributes involved motivation, role modeling, openness, self-awareness, agility, and learning from errors.

### **Conclusion**

Healthcare educational institutions can use the identified attributes of DELs to inform the development of targeted training programs and aid in the strategic selection of leaders to drive digital transformation.

**Keywords:** digital leadership, e-leadership, leaders in the digital era, higher education, medical education, health professional education

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## 3. "Perspective of Women in Neurosurgery: Quantitative Study Interpreting Journey of Professional Identity Formation in Female Doctors of Low Middle-Income Country"

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### **Introduction**

Globally, there is a shift towards choosing medical and allied specialties over neurosurgery. In

Pakistan, where female medical students now outnumber males, this trend has led to a significant gap in the availability of qualified neurosurgeons.

### **Methodology**

This cross-sectional descriptive study was conducted at Allama Iqbal Medical College, Jinnah Hospital, Lahore, from May 20, 2024, to June 20, 2024. A validated questionnaire, adapted from an international study (Akhigbe & Sattar, 2014), was transformed into a Google Form. The questionnaire included demographics and items evaluating perceptions of neurosurgery, socioeconomic viewpoints, and training perspectives.

### **Results**

The study received 228 responses. Among participants, 55.7% were final-year students, and 44.3% were house officers. About 58.8% disagreed on considering neurosurgery as a career, while 97.8% found neurosurgical cases challenging and interesting. A significant 60.1% strongly agreed that neurosurgery involves long operating hours.

### **Conclusion**

Although neurosurgery is respected and holds interest, enrollment is low due to insufficient resources, the field's demanding nature, and perceived negative impacts on personal life.

**Keywords:** gender, bias, neurosurgery

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## 4. "Gender Disparity in Dental Clinics: A Cross-Sectional Study in Punjab, Pakistan"

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### **Introduction**

Gender bias remains pervasive across various sectors, impacting experiences and opportunities, especially within healthcare and dental clinics. This study explores gender disparities in dentistry, particularly in the underrepresentation of women.

### **Methodology**

Conducted from January 2023 to February 2024, this cross-sectional study surveyed clinical final-year dental students, house officers, and postgraduate trainees from private and public institutes in Punjab. A 23-item questionnaire examined demographics and perceptions of gender discrimination in dentistry.

### **Results**

A significant 53.2% of respondents acknowledged gender bias in dental clinics, with attitudes varying between genders. Over half of participants reported gender discrimination and job rejections, showing the impact on professional opportunities.

## **Conclusion**

The findings indicate a preference for male dentists and a perception of women as less competent. Addressing these inequities is essential for fair conditions and high-quality treatment.

**Keywords:** dentists, gender equity, Pakistan, women

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## 5. "The Impact of Neuroticism and Personality Traits on Burnout: Insights from Medical Students"

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### **Introduction**

Burnout is an extreme state of physical, emotional, and mental fatigue from persistent stress, impacting well-being and effectiveness. Personality traits may correlate with susceptibility to burnout.

### **Methodology**

A cross-sectional study surveyed undergraduate medical students with the Maslach Burnout Inventory and Big Five Inventory to examine the relationship between burnout and personality.

### **Results**

About 46% experienced high emotional exhaustion, 42% high depersonalization, and over 81% low personal accomplishment. Neuroticism correlated positively with burnout indicators, while extraversion appeared to increase resilience.

### **Conclusion**

Neurotic tendencies heightened burnout risk, indicating a need for close monitoring and support.

**Keywords:** burnout, emotional exhaustion, neuroticism, depersonalization, personal accomplishment

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## 6. Exploring the Role of Nonverbal Communication in Effective Communication: A Multicenter Comparative Analysis

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### **Introduction:**

This research explores the role of nonverbal communication (NVC) in professional settings. It examines how factors like experience, gender, and qualifications impact NVC skills. By

identifying these influences, the study aims to improve communication training and foster more effective, empathetic interactions in healthcare and academic environments.

**Methodology:**

This cross-sectional study involved 172 participants, including doctors, dentists, nurses, and educators. Data on nonverbal communication (NVC) skills were collected using a structured questionnaire with a 5-point Likert scale. Participants' NVC scores were categorized into four levels, and demographic information such as gender, experience, and qualifications was also gathered.

**Results:**

The average NVC score was  $176.47 \pm 17.16$ . Professionals demonstrated significantly higher NVC skills (19.1%) compared to learners (3.9%) ( $p = 0.006$ ). While gender and qualifications showed notable differences in NVC scores, they were not statistically significant. The findings emphasize the importance of professional experience in enhancing NVC skills.

**Conclusion:**

The study highlights that professional experience significantly enhances nonverbal communication (NVC) skills, with professionals showing superior competence compared to learners. While gender and qualifications showed some differences, experience was the most influential factor. These findings underscore the need for NVC training to improve communication across professional settings.

**Keywords:** nonverbal communication, interpersonal interactions, experience levels, professional development

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## 7. Ethical Training in Medical Education: Adapting to the Cultural Context of Pakistan

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**Introduction:**

Medical ethics training is essential in preparing healthcare professionals to uphold professionalism and integrity. In Pakistan, ethical training is often challenged by a lack of standardized curricula, resource constraints, and untrained faculty, necessitating culturally adapted ethics education that incorporates local values alongside universal principles.

**Methodology:**

This cross-sectional study surveyed 200 students and 40 faculty members from Shahida Islam Medical College. Data were collected via structured questionnaires assessing knowledge, attitudes, satisfaction, effectiveness, and cultural alignment with ethical training. Statistical analyses included chi-square tests and t-tests to compare demographic and professional group responses.

**Results:**

Faculty exhibited higher ethics knowledge scores (mean = 82.53) than students (mean = 79.55,  $p = 0.045$ ). Students predominantly held neutral attitudes, while faculty responses were polarized. Perceptions of cultural alignment also varied significantly, with half of the faculty members expressing strong agreement and half expressing strong disagreement.

**Conclusion:**

Our findings suggest the need for an ethics curriculum that transcends theoretical content to include practical, culturally sensitive applications. Bridging these gaps will enhance the relevance of ethical training, equipping healthcare professionals to address complex ethical challenges within the cultural context of Pakistan.

**Keywords:** ethical training, medical education, cultural adaptation, faculty perceptions, student attitudes, Pakistan

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## 8. Developing CPD Standards for Allied Healthcare Professionals in Pakistan

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**Introduction:**

Continuing professional development (CPD) is essential for enhancing the competency and proficiency of healthcare professionals worldwide. While mandatory standards for CPD exist in the United Kingdom and Australia, Pakistan lacks centralized standards for allied healthcare professionals. The study's objectives are to explore health professionals' perceptions regarding the development of CPD standards for allied health professionals in Pakistan and to develop CPD standards for allied health professionals in Pakistan.

**Methodology:**

Interviews with experts in allied healthcare professions were conducted using a Delphi study with three iterative rounds over six months at the University of Lahore from January to June 2024. Health professionals' viewpoints toward developing CPD standards for allied health professionals were acquired using semi-structured interviews and iterative rounds of questionnaires.

**Results:**

A total of 14 participants were interviewed, followed in rounds 2 and 3. Six themes emerged from the first round of qualitative analysis: CPD standards, competencies & standard development, barriers & challenges, interprofessional education, allied health professionals, and assessment. The study recognized several critical qualities, including clinical experience, communication skills, and cultural sensitivity. Additionally, time restrictions and budget limitations were acknowledged as challenges. Twenty-six statements, written as standards, were generated from the six themes in the second round.

**Conclusion:**

The study explores the perceptions of health professionals developing CPD standards for allied healthcare professionals in Pakistan. It emphasizes the need for stakeholder involvement, addressing potential barriers, and adaptability to changing needs in the local context of Pakistan. Proposed CPD standards for allied health professionals in Pakistan, informed by expert input, consider local context and learning needs. The study highlights the need for collaboration, innovative approaches, and ongoing research to inform evidence-based practices that enhance patient care and professional growth.

**Keywords:** CPD standards, Pakistan, healthcare professionals, evidence-based practices, patient safety, professional competence



### **1. Exploring Experiences of House Officers for Identifying Gaps in the Translation of Theoretical Knowledge into Practice in Prosthodontics: An In-Depth Qualitative Approach**

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#### **Introduction:**

Prosthodontics house officers face challenges in applying theoretical knowledge to clinical practice, creating a theory-practice gap that impacts patient care and education. Bridging this gap requires developing psychomotor skills and aligning theoretical knowledge with clinical procedures during prosthodontics house job training.

#### **Methodology:**

This qualitative study used a phenomenological approach. Data were collected through face-to-face semi-structured interviews. A purposive sampling technique was used to recruit 15 participants, and Braun & Clarke's steps guided the thematic analysis of the data.

#### **Results:**

Five themes emerged: translation of knowledge into practice, learning strategies for improving clinical skills, competency of prosthodontics house officers, role of clinical facilitator, and modified methodology for improving clinical skills.

#### **Conclusion:**

House officers in prosthodontic rotations experience various challenges, including insufficient theoretical knowledge and procedural difficulties. Facilitating factors such as support from facilitators, case discussions, feedback, reflective practice, early exposure to real patients, and working on phantom heads contribute to their growth, confidence, and professional development. Despite challenges, implementing strategies to bridge the theory-practice gap enhances the translation of theoretical knowledge into practical skills, providing comprehensive training for prosthodontics practitioners.

**Keywords:** knowledge translation, theory-practice gap, prosthodontics, dentistry, house officer, clinical facilitator.

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## **2. Undergraduate Clinical Education Environment Measure (UCEEM) of a Dental Program in Qassim University & University of Aljouf: A Bi-Institutional Study**

**Shahzad Ali Shah**

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### **Introduction:**

The Undergraduate Clinical Education Environment Measure (UCEEM) is widely used in medical and allied health sciences to assess students' perceptions of their clinical learning environments. This study evaluates the clinical education environment in two dental programs, examining its impact on teaching, learning, and student well-being.

### **Methodology:**

Data were collected via an online survey, which included demographics and the modified UCEEM questionnaire, consisting of 38 items grouped into five overarching dimensions.

### **Results:**

The response rate was 69.0%, with 88 males (59.9%) and 59 females (40.1%) aged 23-32 years. The mean total score was 138.45, with Qassim University's Ar-Rass campus students scoring significantly higher than those from Al-Jouf University ( $p = 0.00$ ). The Ar-Rass students rated experiential learning higher than Al-Jouf students, while gender differences in scores were not statistically significant.

### **Conclusion:**

A positive clinical learning environment and supervisory support are crucial in developing healthcare professionals' competence. Effective supervision significantly enhances students' learning experiences.

**Keywords:** undergraduate, dental education, clinical learning environment.

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## **3. Exploring Learning Preferences in Medical Education: An Investigative Study of Teachers and Students Utilizing the VARK Model**

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### **Introduction:**

Understanding various learning preferences is essential for effective teaching strategies. The VARK model (Visual, Aural, Read/Write, Kinesthetic) helps identify preferred learning modes, which can optimize teaching methods, especially in medical education.

**Methodology:**

A multicentered cross-sectional study was conducted over two months with 231 participants recruited through convenience sampling. Data collection was performed via an online VARK questionnaire, and analysis involved descriptive statistics and chi-square tests.

**Results:**

Most participants (70.1%) were female, and 45.5% held MBBS/BDS degrees. The predominant learning preference was unimodal (83.1%), with bimodal and trimodal preferences less common. Females tended to prefer unimodal learning. While learning preferences did not significantly differ with experience ( $p=0.58$ ), associations between experience levels, qualifications, and professional roles were significant ( $p=0.00$ ).

**Conclusion:**

Unimodal learning preferences are prevalent among medical tutors and students. Recognizing diverse learning styles is essential for tailoring educational approaches, ultimately contributing to a better healthcare system.

**Keywords:** VARK model, learning preferences, medical education, educational strategies, cross-sectional study, gender differences, professional roles.

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#### **4. Relationship Between VARK Learning Styles and Academic Backgrounds of Students of a Newly Established Medical College of Lahore, Pakistan**

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**Introduction**

Students enrolled in a newly established medical college in Lahore, Pakistan, come from diverse sociodemographic and academic backgrounds. Identifying students' learning style preferences can enable better facilitation and adaptation of teaching methodologies. The new UHS integrated curriculum, based on modules, requires a shift toward more student-oriented teaching and assessment methods. Recognizing preferred learning styles across academic backgrounds aids facilitators in making adjustments to support student learning and performance.

**Methodology**

This descriptive cross-sectional study was conducted from June to December 2023 on 1st-year MBBS students at Rashid Latif Khan University Medical College, Lahore. A sample of 100 students was targeted, with data collected from 91 students using the standardized VARK questionnaire, following IRB approval (IRB No: 002/23). Data analysis included SPSS Version 29, with mean, standard deviation, frequencies, and percentages calculated. Additionally, a chi-square test was used with  $p\text{-value} < 0.05$  as significant.

**Results**

The mean age of participants was  $19.57 \pm 0.8$  years, with a female predominance of 61 (67%). Most students had an F.Sc background (77, 84.6%), while others had completed A-Levels (14,

16.4%). Kinesthetic learning was the most common style (49, 53%), followed by auditory (30, 33%), visual (9, 9%), and reading/writing (3, 3%). Among A-Level students, kinesthetic (8, 57%) and auditory (6, 43%) learning styles predominated. F.Sc students similarly showed kinesthetic (49, 53.8%) and auditory (30, 33%) preferences, with the remainder favoring visual (9, 9.9%) and reading (3, 3.3%) styles.

**Conclusion:** Kinesthetic and auditory learning styles were preferred across academic backgrounds.

**Keywords:** VARK, learning styles, academic background, medical college

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## **5. Intrinsic Motivation Between Face-to-Face and Blended Learning in Surgical Clinical Education**

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### **Introduction**

The opportunistic nature of surgical clinical education presents challenges for effective teaching and training. Blended learning (BL) combines face-to-face (F2F) teaching with online resources such as forums, videos, and quizzes, which may enhance intrinsic motivation in surgical students. This study compares the intrinsic motivation of students in BL versus F2F teaching settings.

### **Methodology**

A quasi-experimental, crossover study was conducted in Surgical Unit I and II at Dow University Hospital, Karachi, from March to August 2014. A total of 31 students participated, with Group A in F2F teaching and Group B in BL for four weeks, switching units afterward. Both groups received the same content and schedule. The F2F group had real patient exposure and small group discussions, while the BL group had additional online learning. The Intrinsic Motivation Inventory (IMI) assessed motivation.

### **Results**

Fifty-eight students completed the IMI: 28 in F2F and 30 in BL. Significant differences were found in all four IMI subscales between groups, with BL students showing higher motivation ( $p < 0.01$ ), while F2F students experienced more tension ( $p < 0.048$ ).

### **Conclusion**

BL programs increased intrinsic motivation among surgical students, offering enhanced educational opportunities and faculty efficiency.

**Keywords:** blended learning, face-to-face learning, intrinsic motivation, surgical teaching

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## **6. Flip the Jigsaw for Improved Learning**

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### **Introduction**

The flipped classroom is a blended learning model frequently employed in health professions education. The jigsaw method, a collaborative strategy, is less resource-intensive than small group discussions. This study proposes merging the flipped classroom with the jigsaw technique to examine its impact on Master of Health Professions Education students.

### **Methodology**

The study, conducted at Shifa College of Medicine, received ethical approval from Shifa International Hospital's IRB. Pre-reading materials on curricular perspectives were shared via Google Classroom before the session. A 25-question pre-test was administered, followed by jigsaw activity with home and expert group discussions, and concluded with a post-test using the same questions. An independent-sample t-test was used for analysis.

### **Results**

Post-test scores significantly improved over pre-test scores ( $p=0.001$ ). Qualitative analysis revealed three themes: "the upside," "the flip side," and "the way forward."

### **Conclusion**

Merging flipped classroom with jigsaw activity resulted in improved learning of postgraduate students. Despite finding it time-consuming, students highly recommended this collaborative peer-learning method.

**Keywords:** flipped classroom, jigsaw activity, blended learning, collaborative learning

### **1. Assessing the Cognitive Impact of Multimedia Learning Resources in Undergraduate Anatomy Education: A Cognitive Load Theory Perspective**

**Hadia Zulfiqar**

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#### **Introduction**

Anatomy is a foundational subject in undergraduate medical education, essential for understanding clinical subjects. However, learning anatomy is often challenging due to its complex spatial relationships and detailed structures. Recently, cognitive load theory (CLT) has been applied to optimize multimedia learning in anatomy education. This study seeks to understand the effectiveness of multimedia learning approaches from the perspective of undergraduate medical students.

#### **Methodology**

This qualitative exploratory study involved 15 first- and second-year MBBS students in focus group discussions, using semi-structured interviews. Thematic analysis was employed to analyze data, identifying patterns related to cognitive load.

#### **Results**

The use of multimedia resources reduced cognitive load and enhanced learning when facilitators incorporated diverse multimedia tools, such as 3D videos, concept maps, and case scenarios. Students could apply anatomical knowledge more effectively in this context.

#### **Conclusion**

This study sheds light on anatomy students' experiences with cognitive load, highlighting the value of multimedia tools in reducing cognitive strain and improving learning outcomes.

**Keywords:** cognitive load, medical education, undergraduate, multimedia, anatomy

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### **2. Comparative Effectiveness of Medium Fidelity Simulation and Virtual Simulation in Enhancing Local Anesthesia Skills in Dentistry**

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#### **Introduction**

Administering local anesthesia (LA) is a crucial skill in dental practice to ensure patient comfort during procedures. This study compares the effectiveness of medium fidelity simulation (MFS) and virtual simulation (VS) in enhancing LA administration skills among final-year dental students

at Isra Dental College, aiming to identify which method better prepares students for clinical practice.

### **Methodology**

A randomized controlled trial (RCT) was conducted with 50 final-year dental students randomly assigned to either the MFS group, using 3D simulation models, or the VS group, which utilized a mobile application-based simulator. Both groups participated in two weeks of standardized lectures and practical sessions. Assessments included model-based and real patient evaluations, with validated questionnaires assessing skill levels. Descriptive analysis compared demographics, device usage, and online resource experience. SPSS was used for statistical analysis, with significance set at  $p < 0.05$ .

### **Results**

Both groups were comparable in age, gender distribution, and device usage. The VS group significantly outperformed the MFS group in clinical performance (mean ranks: 32.70 vs. 18.30,  $p < 0.001$ ). Although the difference in model-based performance was not statistically significant ( $p = 0.072$ ), a positive trend favoring VS was noted.

### **Conclusion**

Virtual simulation, particularly via mobile applications, was more effective than medium fidelity simulation in improving LA skills. These findings suggest that incorporating VS into dental curricula could enhance training outcomes, better preparing students for clinical practice and improving patient care.

**Keywords:** local anesthesia simulation, dentistry simulation, oral surgery simulation techniques, virtual simulation in LA skills, comparison of simulation techniques for LA

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## **3. Levels of Electronic Health (E-Health) Literacy Among Second-Year Medical Students from Rawalpindi Medical University: A Cross-Sectional Study**

**Sidra Hamid**

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### **Introduction**

E-health literacy is defined as the ability to effectively use digital health resources. Evaluating e-health literacy among medical students is crucial, as it prepares them to utilize digital resources efficiently. This study aims to assess the e-health literacy levels of second-year medical students at Rawalpindi Medical University (RMU).

### **Methodology**

A six-month cross-sectional study was conducted, assessing e-health literacy among 188 second-year medical students recruited through non-random convenience sampling. The data collected from their responses were analyzed using SPSS 27 to determine their ability to access and utilize online health resources.

## Results

Among the 188 medical students, 99.5% reported having internet access. Of those, 73.4% demonstrated good e-health literacy, 25.5% had average knowledge, and 1.1% had poor knowledge. Notably, 73.8% of students with internet access showed good e-health literacy.

## Conclusion

Most students efficiently use online health resources and possess a solid understanding of e-health. Both genders exhibited comparable abilities in utilizing digital health resources. Targeted support is recommended to help students with average or low literacy levels enhance their skills.

**Keywords:** e-health literacy, medical students, digital health resources, telemedicine, health informatics

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## 4. Virtual Patients Versus Standardized Patients for Improving Clinical Reasoning Skills in Ophthalmology Residents: A Randomized Controlled Trial

**Tayyaba Gul Malik**

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### Introduction

History taking and clinical reasoning are critical skills that require knowledge, cognition, and meta-cognition. Trainees must experience multiple encounters with different patients to practice these skills, but patient safety limits their exposure to critically ill patients. This randomized controlled trial evaluates the effectiveness of virtual patients (VP) versus standardized patients (SP) in developing clinical reasoning skills in ophthalmology postgraduate residents.

### Methodology

Postgraduate residents from two hospitals in Lahore, Pakistan, were randomized into either the VP group or the SP group and participated in clinical reasoning exercises for 30 minutes post-pretest. This was followed by a posttest, with a follow-up posttest one month later. Data were analyzed using IBM SPSS Version 25, employing repeated measures ANOVA to assess skill retention over time.

### Results

For the SP group, mean scores were  $12.6 \pm 3.08$  (pretest),  $16.39 \pm 3.01$  (posttest), and  $15.39 \pm 2.95$  (follow-up). For the VP group, mean scores were  $12.7 \pm 3.84$  (pretest),  $16.30 \pm 3.19$  (posttest), and  $15.65 \pm 3.18$  (follow-up), with a  $p$ -value  $< 0.00$ . However, the difference between the VP and SP groups was not statistically significant ( $p = 0.896$ ). There was no significant difference in clinical reasoning ability retention between the two groups.

### Conclusion

Virtual patients can effectively facilitate learning clinical reasoning skills in postgraduate ophthalmology residents within a safe environment. While both methods proved similarly useful, SPs are limited by their availability for repeated exercises.



**Keywords:** virtual patients, standardized patients, ophthalmology, clinical reasoning, pretest, posttest

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## **5. Exploring the Awareness and Perceptions of Medical Practitioners Towards the Utilization of Artificial Intelligence in Healthcare Service Delivery**

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### **Introduction**

Artificial Intelligence (AI) in healthcare offers solutions to workforce shortages by automating tasks, reducing workloads, and improving efficiency, thus alleviating burnout and enhancing overall service delivery in the face of global healthcare challenges. This study aims to assess the knowledge and perceptions of healthcare workers regarding the application of AI in healthcare services in Pakistan.

### **Methodology**

This questionnaire-based cross-sectional survey assessed healthcare workers' attitudes toward AI use among medical practitioners in Pakistan. Only healthcare professionals who consented to participate were included in the study, which was conducted from March 1 to May 1, 2024, following ethical approval from the institute's review board.

### **Results**

Out of 109 respondents, 52% (n = 57) had poor knowledge about AI, while 32% (n = 35) had good knowledge. Half of the participants (50%, n = 54) agreed that AI applications would improve their field of practice, whereas 4% (n = 4) strongly objected. Notably, 33.1% (n = 36) agreed that many healthcare workers could be replaced by AI in the foreseeable future, and 35% (n = 43) believed some employers might prefer AI over human specialists due to the absence of emotional exhaustion or physical limitations.

### **Conclusion**

Respondents demonstrated familiarity with AI's medical applications and its potential benefits in healthcare, though many expressed concerns about the possible future displacement of their roles by AI technology.

**Keywords:** artificial intelligence, healthcare, medical practitioners, perceptions

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## **6. Needs Assessment for Integration of Artificial Intelligence in Undergraduate Medical Education Curriculum: A Mixed-Method Study**

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## **Introduction**

Integrating AI into health professions education holds transformative potential, especially in personalized learning. However, challenges related to data privacy, ethics, and regulations pose significant obstacles. This study aims to conduct a comprehensive needs assessment for integrating AI into medical education.

## **Methodology**

This mixed-method study was conducted at Liaquat National Hospital & Medical College in Karachi. The quantitative component involved a cross-sectional survey of undergraduate medical students and faculty, while the qualitative component included focused group discussions and in-depth interviews. Quantitative data were analyzed using SPSS Version 23, and qualitative data underwent thematic analysis using NVivo.

## **Results**

The survey included 83 faculty members (53 females, 30 males) and 153 students (109 females, 44 males). AI knowledge was reported by 64% of faculty and 49% of students. Support for AI integration was 49% among faculty and 34.6% among students. Thematic analysis from interviews and discussions revealed six themes: AI in medical education, benefits and limitations, educational integration, ethical considerations, institutional support, barriers, and future recommendations.

## **Conclusion**

This study highlighted enthusiasm among faculty and students for AI in medical education, driven by its teaching benefits. Nonetheless, ethical concerns regarding data privacy necessitate attention. Collaborative efforts are vital to developing an ethical and effective AI curriculum for future physicians.

**Keywords:** needs assessment, artificial intelligence, medical education

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## **7. Awareness of Artificial Intelligence in Dental Education: A Cross-Sectional Study to Determine Knowledge and Barriers in the Application of AI in the Public Sector**

**Zainab Rizvi**

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## **Introduction**

Artificial Intelligence (AI), introduced in the 1950s, refers to machines capable of following rules, learning, and performing tasks akin to human behavior. The demand for AI in medical and dental education is rising, with calls for integration from both students and faculty. However, a significant percentage of medical students in Pakistan lack AI knowledge.

## **Methodology**

This cross-sectional study was conducted at DCD Lahore from January to March 2024, with Institutional Review Board approval. A self-structured questionnaire was developed based on

previous studies to collect data from 227 participants, including faculty and students. Data were analyzed using SPSS Version 22, with results presented as percentages and frequencies.

## **Results**

The study highlights that AI can be applied in dental education for teaching implementation, evaluation, and feedback. Similar to previous findings, 48.7% of students and 49.1% of faculty expressed a need for AI in learning and teaching. Additionally, 74.3% of students and 91.2% of faculty recognized AI's emerging role in dental education. However, respondents noted a lack of opportunities to acquire AI skills, identifying challenges such as faculty knowledge deficits and skill shortages, necessitating collaboration with healthcare and technical experts.

## **Conclusion**

This study examined the perspectives of students and faculty on AI knowledge and application at a public dental institute in Lahore, identifying barriers to learning and application. There is a strong interest in integrating AI into the undergraduate BDS curriculum.

**Keywords:** artificial intelligence (AI), health professions education (HPE)

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## **8. Attitude and Perception Regarding Applicability of Artificial Intelligence in Undergraduate Medical Education Among Teaching Faculty**

**Zubia Afzal**

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### **Introduction**

Current medical education does not adequately prepare future physicians for the impending AI revolution in healthcare. One of the main barriers to the limited use of AI in our educational institutions is that medical schools currently lack the faculty expertise required to teach AI in medicine. This qualitative analysis focuses on assessing the attitudes and perceptions of current medical faculty members regarding the use of AI in undergraduate medical education.

### **Methodology**

A purposively selected sample of 8 medical faculty members at Continental Medical College were interviewed in March 2024. They were selected for representation of both genders and various departments, including both basic and clinical sciences, to gather diverse viewpoints. Semi-structured questionnaires were used, and interviews were recorded and transcribed. Thematic analysis was performed to generate themes.

### **Results**

Four themes reflected the perceptions and attitudes of the medical faculty members towards the use of artificial intelligence (AI) at the undergraduate level: (1) fear of dependence on AI; (2) contradictory role of AI in the teaching and assessment of students; (3) fear of technology overshadowing medical education; and (4) the need for comprehensive planning for implementing

AI in medical schools. Their perceptions and concerns revolved around both faculty members and students.

### **Conclusion**

Incorporating AI into the healthcare sector in the future requires a deep understanding of potential challenges beforehand. Therefore, involving medical faculty in discussions before implementing changes to the medical school curriculum is essential. Addressing the lack of expertise in AI can be achieved by fostering interfaculty collaborations between healthcare experts and faculties of engineering and computer sciences.

**Keywords:** artificial intelligence, medical education, faculty perceptions, curriculum development, interprofessional collaboration

### 1. Learning Environment and Its Relationship with Quality of Life and Burnout Among Undergraduate Medical Students in Pakistan: A Cross-Sectional Study

**Saadia Shahzad**

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#### Introduction

Although a complex array of personal and professional factors influences student well-being, their satisfaction with specific features of the learning environment (LE) appears to be a critical factor. In the past few decades, researchers have laid the foundation for strengthening evidence for measuring the learning environment, thus highlighting the importance of regular measurements and evaluations to inform the necessary changes and improvements.

#### Methodology

**Objective:** To determine the association between the learning environment and well-being among students from public and private sector medical colleges in Lahore.

**Design:** Cross-sectional study.

**Setting:** Six public and private sector medical colleges.

**Participants:** A sample of 3,400 undergraduate medical students of both genders from all five classes. The learning environment was measured using the Johns Hopkins Learning Environment Scale (JHLES). Students' well-being (quality of life and burnout) was measured with validated and reliable questions. All undergraduate medical students currently enrolled in the graduation program were included.

#### Results

Overall JHLES scores were 82.0 for males and 81.6 for females. The mean quality of life score was  $7.0 \pm 1.9$ ; for burnout, emotional exhaustion and depersonalization mean scores were  $21.0 \pm 13.8$  and  $17.5 \pm 9.0$ , respectively. A significant correlation ( $<0.05$ ) was found between the overall JHLES mean score and quality of life, emotional exhaustion, and depersonalization. The logistic regression model showed that the odds of higher quality of life were lower with a higher level of class (AOR 0.679 [0.51–0.91],  $p < 0.01$ ) and with a higher JHLES score (AOR 0.9 [0.89–0.91],  $p < 0.0001$ ).

#### Conclusion

Students were less likely to have a high quality of life even if they gave a higher JHLES rating of the learning environment. They were more likely to experience higher emotional exhaustion with every successive higher class and being boarders (vs. day scholars), with minimal increases in depersonalization. Based on this study, policies can be developed to improve students' well-being. Further studies are suggested post-pandemic, with a broader scope of intrinsic and extrinsic factors influencing quality of life and burnout associated with the learning environment.

**Keywords:** emotional exhaustion, learning environment, medical students, quality of life, student burnout.

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## **2. Exploring Mentor and Mentee Experiences in a Formal Medical Undergraduate Mentorship Program: A Qualitative Study of a Private Medical School in Pakistan**

**Dr. Yusra Nasir**

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### **Introduction**

In undergraduate medical education, mentoring is pivotal, yet understanding the experiences of mentors and mentees remains deficient. This study explores their experiences, challenges, and successes in LNMC's formal mentorship program to enhance its outcomes, addressing the gap beyond mere mentor/mentee satisfaction studies.

### **Methodology**

The study at LNMC employed an exploratory qualitative case study approach with semi-structured interviews of clinical and basic sciences mentors, as well as focused group discussions with first, third, and final-year medical students. Conducted from October to December 2023, it involved purposive sampling and Braun & Clarke thematic analysis of three focused group discussions and eleven interviews.

### **Results**

Mentees' experiences revealed themes of mentorship relationships, key drivers, barriers, and enhancement recommendations. Mentors highlighted themes of interaction, vital aspects, challenges, and continuous improvement. Insights emphasized supportive environments, adaptable meeting frequencies, and individualized approaches. Challenges included clarity of purpose, scheduling, attendance, and administrative issues, underscoring the need for a structured yet flexible mentorship program.

### **Conclusion**

The study highlighted the importance of a supportive environment in LNMC's mentorship program. Mentees valued academic guidance, confidence building, and career planning, while challenges like scheduling conflicts suggested the need for refresher training, recognition, and incentives for mentors. Quality assurance mechanisms are crucial, offering guidelines to optimize mentorship in Pakistani medical colleges.

**Keywords:** mentorship program, undergraduate mentorship experiences, mentee, mentor.

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### **3. Assessing the Influence of Personal Development Reviews on Academic Performance: A Retrospective Analysis in Graduate Health Professional Education**

**Shanila Anwar**

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#### **Introduction**

Reflection is a cognitive process where thoughts are redirected for interpretation and analysis. This practice acts as a metacognitive tool, guiding future actions. According to John Dewey (1933), it involves an active, persistent, and careful consideration of any belief or supposed form of knowledge in light of the grounds that support it. Writing reflective journals positively impacts critical thinking, clinical reasoning, and academic performance.

#### **Methodology**

**Study Design:** Retrospective exploratory study.

**Study Setting:** Aga Khan University, Karachi, Pakistan.

**Duration:** 10-12 months.

**Sample Size:** 61 participants, selected through purposive sampling.

**Inclusion Criteria:** All PDRs of MHPE students from cohorts 2022 and 2023.

**Exclusion Criteria:** PDRs that were incomplete or not submitted on time.

**Data Analysis:** Descriptive statistics and inferential tests using SPSS 22. The Shapiro-Wilk test assessed normality, and Spearman's correlation analyzed the correlation between PDR and academic scores.

#### **Results**

Regression analysis indicated that PDR significantly predicts total score; each unit increase in PDR corresponds to a 2.046 unit increase in total score ( $p = 0.011$ ). The Shapiro-Wilk test showed PDR follows a nonparametric distribution. Spearman's rho correlation coefficient ( $r = 0.334$ ) indicates a moderate positive correlation between these two variables, with a p-value of 0.01, statistically significant at the 95% confidence level. Bivariate correlation results showed PDR scores from 3.00 to 5.00, with a mean and standard deviation of  $4.041 \pm 0$ . Total scores ranged from 75.38 to 90.56, with a mean and SD of  $83.592 \pm 3.576$ .

#### **Conclusion**

This study established a substantial relationship between reflective writing and academic performance. It emphasizes the value of reflective practices to encourage their implementation early in medical education, helping students develop effective self-learning habits and encouraging lifelong learning, ultimately improving their educational experience and professional development.

**Keywords:** reflective writing, reflective practices, reflective journals, medical education, assessments.

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## **4. Institutional and Individual Factors Influencing Resilience and Well-being in Medical Students**

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### **Introduction**

Resilience is crucial for medical students, enabling them to manage academic pressures and progress positively through their demanding training. While existing literature predominantly emphasizes individual attributes, the role of educational institutions in fostering resilience remains underexplored. This study aims to examine both individual and institutional factors contributing to resilience among medical students.

### **Methodology**

This study was conducted in two phases. In phase one, a scoping review was conducted. Databases including PubMed, Scopus, Google Scholar, and PsycINFO were searched using keywords and MeSH terms related to resilience and medical education. Studies published from 2000 to August 2023 in English were included, excluding review articles, letters, opinion papers, and editorials. In phase two, a phenomenological approach was employed, involving five focus groups and ten individual interviews with 45 medical students and 10 faculty and admin staff.

### **Results**

This study highlighted individual factors such as gender, personality traits, academic performance, financial constraints, health issues, and social interactions. Institutional factors included the learning environment, access to resources, support systems, mentoring, counseling, wellness services, and financial aid. A supportive, inclusive, and student-centric environment positively impacted resilience.

### **Conclusion**

The findings underscore the importance of both personal and institutional factors in shaping resilience and mental health among medical students. Strategies to foster emotional resilience, improve the learning environment, and provide comprehensive support systems are essential for reducing burnout and promoting psychological well-being. Addressing these factors holistically is crucial for supporting the psychological health and career satisfaction of medical students.

**Keywords:** resilience, medical students, learning environment, institutional factors, mental health, academic resilience, burnout prevention, support systems, phenomenological study.

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## **5. Exploring Workplace Motivation in Major Specialty Resident Doctors of a Public Hospital in Lahore Using Gagne's Multidimensional Workplace Motivation Scale (MWMS)**

**Ayesha Qamar**

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### **Introduction**

This study aims to explore the workplace motivation of resident doctors in general surgery and obstetrics/gynecology at a public hospital in Lahore. Using Gagne's MWMS, it assesses intrinsic and extrinsic factors that drive motivation, contributing to a better understanding of how motivation affects job performance, satisfaction, and patient care.

### **Methodology**

A cross-sectional study was conducted at Sir Ganga Ram Hospital, Lahore, involving 10 resident doctors from general surgery and obstetrics/gynecology. Data were collected using Gagne's MWMS to assess multiple dimensions of motivation, analyzed through descriptive statistics to identify trends and differences between specialties in motivation types and levels.

### **Results**

Findings indicated that intrinsic motivation and identified regulation were the most prominent factors driving workplace motivation across all departments, with surgery residents showing a higher

### **Conclusion**

This study offers significant insights into the motivational dynamics of resident doctors in a public hospital, revealing the critical interplay between intrinsic and extrinsic motivational factors. The findings indicate that addressing both dimensions of motivation is essential for enhancing job performance, satisfaction, and patient care. By implementing tailored interventions focused on these motivational aspects, it is possible to improve overall motivation levels and mitigate burnout among resident doctors, ultimately leading to better patient outcomes and a healthier work environment in public hospitals.

**Keywords:** workplace motivation, Gagne's Multidimensional Workplace Motivation Scale (MWMS), intrinsic motivation, extrinsic motivation, resident doctors, burnout prevention, job satisfaction.

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## Miscellaneous

### 1. Perceptions of Dental Students on the Use of Mock Debates to Enhance Their Oral Communication Skills

**Sana Iqbal**

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#### **Introduction**

Effective oral communication, combining verbal and non-verbal cues, is crucial in dentistry for accurate diagnosis, patient satisfaction, and quality care. However, digital communication reliance hinders face-to-face interactions. This study explores how mock debates at Riphah International University enhance dental students' oral communication, fostering professional competency and improving patient outcomes.

#### **Methodology**

This exploratory qualitative study examined dental students' perceptions of mock debates as a tool to enhance oral communication skills. Six students were selected through stratified purposive sampling based on debate performance. Data was collected via audio-recorded focus group discussions, analyzed using thematic analysis in NVivo. A validated discussion guide ensured relevance in student reflections.

#### **Results**

Six second-year BDS students participated in the study, with 4 females (66.6%) and 2 males (33.3%). Two coding techniques, descriptive and in-vivo coding, generated 120 codes in the first cycle and 55 codes in the second. Four key themes emerged: interpersonal competence, personal growth, comparative analysis, and challenges with solutions.

#### **Conclusion**

Debates serve as an effective interactive activity that enhances students' oral communication skills, promoting active participation and engagement. Our findings indicate that debates significantly improve speaking and listening abilities, making them a valuable pedagogical tool. We recommend incorporating debate-based activities into school curricula to foster communication proficiency.

**Keywords:** oral communication skills, mock debates, dental education, communication in healthcare, pedagogical tool

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## **2.The Perspectives of Medical Students of University College of Medicine and Dentistry on National and International Electives**

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### **Introduction**

Medical electives provide students with valuable opportunities to enhance their medical knowledge and gain practical experience in diverse healthcare settings. This study aimed to explore the perceived learning outcomes of medical electives among medical students and assess the achievement of their anticipated learning goals.

### **Methodology**

A cross-sectional survey was conducted among 113 medical students who had completed their electives. Students rated their level of achievement in each domain after completing their electives.

### **Results**

35 participants (31.0%) wanted to build their future in Pakistan, 42 (37.2%) wanted to build their future elsewhere while 36 (31.1%) were not sure about their future. 58.4% of participants opted for electives in their specialty they wanted to follow. Only 39.8% of participants said that their electives rotation helped them select their specialty. In contrast, the majority of participants said that their electives rotation helps them in their career enhancement, learning from advanced systems, and helped them overcome peer pressure.

### **Conclusion**

Medical electives offer valuable learning opportunities for students, enhancing their knowledge, skills, and professional development. While electives may not directly guide specialty selection, they contribute significantly to students' overall medical education.

**Keywords:**

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## **3. Buying Papers, Selling Integrity: Unmasking the Authorship Black Market in Health Professions**

**Muhammad Muneeb**

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### **Introduction**

Research excellence is pivotal for faculty development and promotion, with the Pakistan Medical and Dental Council (PMDC) mandating publications as a key criterion. However, a clandestine market selling authorship threatens to erode academic integrity and the very foundations of scholarly advancement in health professions education.

## **Methodology**

Through a rigorous six-month mixed-methods investigation, we tracked over 100 sold research papers across numerous journals - mapping them to over 500 unique buyers from 50 institutions across 10+ countries, and conducting confidential interviews with buyers, we unveiled the mechanisms facilitating this malpractice. Additionally, discreet inquiries were made to universities and PMDC regarding detection mechanisms.

## **Results**

Findings reveal a sprawling network of faculty members purchasing authorship to meet promotion requirements, exploiting loopholes. Interviews uncovered how buyers accessed these services and their motivations. In the absence of effective policies and mechanisms at both institutional and regulatory levels, this unethical practice is flourishing unchecked.

## **Conclusion**

The rampant sale of authorship nullifies the purpose of mandatory research for faculty promotions, casting a shadow over academic achievements. Institutions and the PMDC must urgently address this issue to preserve the integrity of scholarly work, ensuring that promotions reflect genuine contributions to health professions education.

**Keywords:** authorship for sale, paper mills, academic integrity, faculty development, unethical practices, PMDC

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## **4. Acceptance and Psychological Effects of Mandatory Extra Coaching Classes During Summer Vacations on Medical Students**

**Zaheer Ahmed**

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### **Introduction**

Medical students face stress, anxiety, and burnout due to academic pressures. Some schools offer voluntary summer coaching to enhance learning, though these sessions may increase stress or aid academic progress. Research shows medical education negatively affects students' psychological well-being, impacting their performance, relationships, and coping abilities.

### **Methodology**

This mixed-methods study combines a cross-sectional survey and in-depth interviews to assess medical students' acceptance and psychological impact of extra coaching classes. Quantitative data (PHQ-4 scale) and qualitative thematic analysis provide insights. Statistical tools analyze correlations, and interviews add depth to the findings.

### **Results**

The focus group revealed mixed reactions to mandatory summer coaching. While some students valued improved patient interaction and personalized teaching, others faced challenges like transport, food issues, and missed vacations. Psychological distress from hostel isolation was

noted. Suggestions included using evening classes for attendance and incorporating similar strategies into regular teaching.

### **Conclusion**

While the extra coaching classes effectively addressed attendance deficiencies and enhanced clinical skills, addressing logistical issues and mental health concerns is crucial for improving overall student satisfaction and well-being. Future interventions should integrate similar strategies into regular academic schedules and provide adequate support for students, particularly those in hostels.

**Keywords:** extra coaching classes, acceptance, psychological effects, vacations, medical students

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## **5. A 5-Year Longitudinal Evaluation of the Educational Environment at Liaquat University Using DREEM Scale: Impact of the CHPE Program**

**Hudebia Allah Buksh**

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### **Introduction**

The educational environment significantly influences the quality of medical education and student outcomes. In 2021, the Certificate in Health Professions Education (CHPE) program was introduced at Liaquat University, with the aim of enhancing teaching practices and improving the overall learning experience. This study evaluates the impact of the CHPE program on the educational environment over a five-year period, from 2020 (pre-CHPE) to 2024, using the Dundee Ready Education Environment Measure (DREEM) scale.

**Objective:** To assess the longitudinal impact of the CHPE program on the educational environment at Liaquat University and its constituent colleges through the DREEM scale over five years.

### **Methodology**

A longitudinal observational study was conducted between 2020 and 2024. The DREEM scale was administered annually to a sample of 250 students and faculty members. Baseline data were collected in 2020 (before CHPE), followed by yearly evaluations from 2021 to 2024. Descriptive and inferential statistical analyses were performed, including paired t-tests to compare pre- and post-CHPE scores and repeated measures ANOVA to assess trends over time. A p-value of  $<0.05$  was considered statistically significant.

### **Results**

The CHPE program's introduction in 2021 led to a significant improvement in DREEM scores. The mean overall DREEM score increased from 105.2 ( $\pm 12.1$ ) in 2020 to 148.7 ( $\pm 11.4$ ) in 2024 ( $p < 0.001$ ). Notable improvements were observed in students' perception of learning, which rose from 22.5 ( $\pm 5.2$ ) to 34.1 ( $\pm 4.8$ ) ( $p < 0.001$ ), and students' perception of teachers, which increased from 21.1 ( $\pm 4.7$ ) to 32.8 ( $\pm 4.3$ ) ( $p < 0.001$ ). Additionally, academic self-perception improved from 18.6 ( $\pm 3.4$ ) to 27.3 ( $\pm 3.2$ ) ( $p < 0.05$ ), and perceptions of atmosphere rose from 24.1 ( $\pm 6.0$ ) to 32.9

(±5.1). These results indicate a marked improvement in all areas of the educational environment, attributed to the faculty's enhanced teaching practices and the improved student experience following the introduction of the CHPE program.

### **Conclusion**

The CHPE program has had a substantial positive impact on the educational environment at Liaquat University. The significant improvement in DREEM scores over the five years demonstrates that faculty trained through CHPE are perceived as more effective, and students experience a more supportive and conducive learning atmosphere.

**Keywords:** CHPE program, DREEM scale, educational environment, faculty development, medical education, Liaquat University, longitudinal study.

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## Online Session

### 1. Psychometric Properties of the Persian Version of the Engaged Teachers Scale (ETS)

**Maryam Akbarilakeh**

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#### **Introduction**

Teacher engagement can be defined as the teachers' effort and attention to teaching professional tasks, adequate emotions, and commitment to relationships with students and colleagues in the classroom and school. The Engaged Teacher Scale (ETS) is a frequently used scale measuring teacher engagement, developed by Klassen et al. (2013) in the UK, and consists of four dimensions: Cognitive Engagement (CE), Emotional Engagement (EE), Social Engagement with Students (SES), and Social Engagement with Colleagues (SEC). Therefore, the aim of this study was to measure the psychometric properties of the Persian version of the Engaged Teachers Scale (ETS).

#### **Methodology**

A total of 123 teachers who worked at Shahid Beheshti University of Medical Sciences, Tehran, Iran, were included in this study. The study participants were selected using convenience sampling. The Persian version of a 16-item scale developed by Klassen et al. was validated by this study. Face and content validity index and reliability were assessed after translation and cultural adaptation, and construct validity was calculated by confirmatory factor analysis using PLS22.

#### **Results**

Of the 123 study participants, 74 (60.01%) were females and 49 (39.9%) were males. The mean age of the subjects was about 30–40 years. The majority of the study participants were general practitioners ( $n = 75$ ; 60.9%), and others were from different specialties. Content validity among 15 experts was 0.88. Confirmatory factor analysis for all 16 items loaded across four factors, and this four-factor scale showed a good fit in the Iranian community. Reliability using Cronbach's alpha was 0.79. The value of the root mean square error of approximation (RMSEA) was 0.0094 with the 99% confidence interval, and the goodness of fit index (GFI) value was significant.

#### **Conclusion**

The Persian version of the ETS had good validity and reliability in Iran and could be a useful tool for measuring the teacher engagement factors of faculty members that can be used by teachers and educational administrators.

**Keywords:** psychometric properties, cognitive engagement, emotional engagement, social engagement

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## **2. From Singularity to Plurality: Experience of Emergency Medicine Residents as Educators in a Multicultural Teaching Encounter at a Low Resource Tertiary Care Health Network in Pakistan**

**Saima Ali**

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### **Introduction**

The concept of “Residents as Educators (RAE)” was introduced at Vanderbilt University in 2008 to meet the health needs of the community by promoting competency-based learning that is administered by the existing workforce, embedded in the workplace. Since then, this model has been used by many clinical and non-clinical specialties, which have found it beneficial for their programs through increased efficiency in curriculum administration in a cost-effective and time-efficient manner.

### **Methodology**

The purpose of this study is to describe the perception of the emergency medicine (EM) residents at the Indus Hospital and Health Network as educators and the impact of their interaction with learners and co-facilitators from diverse cultural, ethnic, and educational backgrounds, while being learners themselves. A qualitative hermeneutic phenomenological study design was used, focusing on the lived experience of the residents as facilitators. Semi-structured interviews were conducted with the senior EM residents, and thematic analysis was used to identify latent and semantic themes and subthemes.

### **Results**

The following themes were identified:

1. Meaningful experience through communication: Communication skills came into play during class when they learned to be better listeners and interject only when needed.
2. Evolution of self: There was self-reported improvement in knowledge and its translation into clinical practice.
3. Respect for diversity and inclusivity: It was a humbling experience with the development of a global perspective towards disease and the determinants of health.
4. National pride: The resident educators reported feeling a sense of accomplishment and pride in teaching and representing their institute and country.

### **Conclusion**

Despite the crucial role played by the residents in developing and executing educational programs, there is a dearth of curricula that focus on the development of residents as educators. This study is transferable as more programs with multicultural participants are becoming the norm. The unique perspective provided by the residents can offer insights to improve such teaching and learning experiences for the educators as well as for the learners. Through the provision of proper instructional strategies and guidance, the residents can improve their skills and become efficient clinician educators, both nationally and globally.

**Keywords:** residents as educators, qualitative study, phenomenology



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### **3. Enhancing ICU Patient Care: A Mixed-Methods Study on the Impact of Simulation-Based Education on Healthcare Professionals' Mastery of Ventilator Graphics**

**Shagufta Yamin**

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#### **Introduction**

A strong command of ventilator waveform interpretation is essential for managing mechanically ventilated patients. Previously, a lack of understanding of the ventilator led to fear of using ventilators. Specially designed educational programs for healthcare professionals (HCPs) have provided expertise and confidence in managing patients on ventilators. Ventilator graphics are critical indicators of patient status. Despite this fact, respiratory therapists are crucial professionals in the ICU; understanding ventilator waveforms is important for the entire ICU team, where inappropriate settings can increase morbidity.

#### **Methodology**

In this mixed-methods study, a pre-and post-test designed workshop was conducted. 21 participants took a pre-test before and a post-test after the workshop. The study also analyzed the relationship between the participants' experience levels and their test scores using SPSS. Qualitative data was analyzed using thematic content analysis of 12 healthcare professionals working in ICUs, using convenient purposive sampling.

#### **Results**

Among 21 participants, nurses (45.5%), pediatric nurses (9.1%), respiratory therapists (4.5%), and respiratory therapy students (36.4%) participated in the simulation-based study. 50% had no prior experience with ventilator graphics. Pre-test scores ranged from 20%-90% (average 36%). Post-test scores ranged from 2%-18% (average 9%). There was a significant decrease in the post-test scores compared to the pre-test scores. Regarding qualitative results, five themes emerged:

- Ventilator management and patient synchrony
- Diagnostic challenges and techniques
- Role of respiratory therapists
- Impact of COVID-19 on ventilation
- Education and professional development

#### **Conclusion**

These findings indicate that while the workshop may not have universally enhanced participants' knowledge and understanding as initially intended, it is noteworthy that several individual participants demonstrated positive improvements in their post-test scores compared to their pre-test scores. This suggests that the workshop had a beneficial impact on certain participants, highlighting the potential effectiveness of the workshop.

**Keywords:** ventilator wavegraph, ventilator waveform interpretation

## Miscellaneous

### 1. Innovations in Health Professions Education: Designing Learning Environments Based on Cognitive Science for Enhanced Retention

**Ramsha Saleem, Meerab Atiq**  
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**Introduction:** The application of cognitive science principles to learning has been shown to improve retention, an essential aspect of healthcare education that often relies on rote memorization. This study aims to highlight the need for curriculum designs based on cognitive science to enhance student performance in healthcare education.

**Methodology:** A narrative review was conducted, selecting articles on the application of cognitive science in learning and healthcare education, as well as the challenges within healthcare curricula. Relevant articles were sourced from databases including PubMed, CINAHL, Cochrane Library, ScienceDirect, Google Scholar, and Scopus. The search strategy included terms such as "cognitive science + learning," "cognitive science + education," "difficulties + healthcare education," and "cognitive science + healthcare education."

**Results:** A total of 25 articles were selected and utilized to compile the data.

**Conclusion:** Strong evidence indicates that techniques based on cognitive science—such as repeated information retrieval, spaced retrieval, and multimodal processing—significantly enhance retention and strengthen cognitive schemas compared to passive learning methods. By integrating cognitive science principles into learning environments, healthcare students can revolutionize their educational experiences and enhance their careers.

**Keywords:** cognitive science, healthcare education, retention, innovation

## **Poster Presentations**

### **Curriculum and Assessment**

#### **1. Determining the factors affecting medical students' attendance: A cross-sectional study**

**Dr. Sobia Adnan**

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#### **Introduction**

Absence of students from the classroom is one of the emerging problems in the medical sciences in recent years. Failure to attend classes disrupts the dynamic teaching-learning environment and causes this environment to become boring and unpleasant. The aim of this study was to evaluate medical students' views on factors affecting their presence in classrooms at Continental Medical College.

#### **Methodology**

A descriptive cross-sectional study was conducted on medical students at Continental Medical College, Lahore. A non-probability convenience sampling technique was used. A pre-tested semi-structured questionnaire containing demographic questions and 13 items on factors affecting student attendance in classrooms on a five-point Likert scale was used to collect data. Data was evaluated using SPSS 25.

#### **Results**

All 13 questions were categorized into three domains: Compulsory, Learning Outcomes, and Motivation. Descriptive statistics showed learning outcomes as the major factor influencing students' attendance, followed by compulsory and motivation. Independent sample t-test showed no significant difference between both genders. One-way ANOVA test showed significant differences in all domains across years of study. Post Hoc Tukey HSD test showed that first-year students are more likely to view attendance as compulsory and beneficial compared to students in later years.

#### **Conclusion**

The results indicate that while gender does not play a significant role in students' perceptions of class attendance, the year of study does. First-year students tend to have stronger perceptions of the necessity and benefits of attending classes, which may decrease as they progress through their medical education. This information could be valuable for developing targeted strategies to maintain or improve attendance rates throughout the MBBS program.

**Keywords:** Student attendance, Medical education

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## **2. Tackling Global Health Issues with Creative Assessments to Cultivate Tomorrow's Innovators**

**Fatima Babar**

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### **Introduction**

This study delves into the importance of integrating global health topics in the medical curriculum to promote innovative solutions from students with the help of introducing assessment methods such as OSPEs and MCQs over traditional examination methods, which often rely on rote memorization and repetitive questions that can halt critical thinking.

### **Methodology**

A mixed-methods study will evaluate student-educator performance through surveys and testing. Pilot programs utilizing current global health issues as case studies will also be introduced. Interdisciplinary collaboration can develop real-world curricula for MCQs and OSPEs. Additionally, adopting initiatives like virtual reality can enhance competency, supported by a thorough literature review on integrating global health and innovative assessments in medical education.

### **Results**

Integrating global health topics and innovative assessments shows potential, with Danasekaran (2023) supporting the One Health approach. Collaborative learning enhances competencies (Hindin et al., 2023; Lee et al., 2023). Students using OSPEs scored 15% higher (Smith et al., 2022), 82% found global health relevant (Johnson & Lee, 2023), and VR simulations increased clinical confidence by 50% (Davis et al., 2023).

### **Conclusion**

The study emphasizes integrating global health topics and innovative assessment methods into medical education to foster critical thinking and clinical skills. By adopting interdisciplinary approaches and advanced technologies like virtual reality, students will be better prepared for real-world patient interactions, ultimately enhancing their confidence and competence in medical practice.

**Keywords:** Global health, Medical curriculum, Critical thinking, Innovative assessment, Virtual reality, Clinical skills, One Health approach, Collaborative learning.

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## **3. AI Chatbots as Educational Tools: Analyzing Their Impact on Retention and Application of Knowledge in Applied Anatomy**

**Hadia Zulfiqar**

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**Title: Introduction**

AI chatbots are emerging as prominent educational tools that are increasingly used in educational settings to facilitate learning and student engagement. They can provide personalized feedback and support, enhancing the learning experience for students. iGen students also prefer digitalization, as evident by the recent surge in the use of chatbots to complete various tasks.

**Methodology**

A qualitative analysis will be conducted to assess the effectiveness of AI chatbots in enhancing the retention and application of knowledge in applied anatomy.

**Results**

The results are expected to indicate the positive impact of AI chatbots on student engagement and knowledge retention.

**Conclusion**

The study aims to highlight the potential benefits of AI chatbots in medical education, particularly in enhancing students' understanding and retention of applied anatomy concepts.

**Keywords:** AI chatbots, Education, Knowledge retention, Applied anatomy, Student engagement.

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**4. From Classroom to Cloud: Comparative Effectiveness of Traditional and Online Learning After COVID Pandemic**

**Lala Rukh Bangash**

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**Introduction**

The COVID-19 pandemic forced medical education to shift rapidly to online learning, posing challenges for subjects requiring hands-on skills, like dissection, examination, and learning procedures. While e-learning offers flexibility, this shift has prompted research into the effectiveness of both traditional and online modalities in medical education.

**Methodology**

A systematic review will be conducted to evaluate the comparative effectiveness of traditional and online learning modalities in medical education post-COVID-19.

**Results**

These results suggest that the effectiveness of online learning in medical education varies. While some studies indicate that e-learning can lead to good exam performance and high satisfaction, others found no significant differences between the two. Still, others highlight the potential limitations of e-learning, reporting poor exam performance and low satisfaction.

## **Conclusion**

The heterogeneous results call for the conduction of more studies and a large-scale systematic review. The combination of the two modalities in the form of blended learning could be a way forward, offering a better solution by incorporating the advantages of both formats while addressing the challenges and minimizing the drawbacks.

**Keywords:** Traditional learning, Online learning, Medical education, COVID-19, Blended learning.

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## **5.AI-Based Sentiment Analysis of Student Feedback to Identify Areas of Curriculum Improvement**

**Prof. Dr. Azfar Farogh**

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### **Introduction**

Well-crafted curricula are essential in achieving educational goals. Traditional assessments focus on quantitative metrics like grades, potentially overlooking student experiences. By utilizing AI-based sentiment analysis on student feedback, this study aims to gain deeper insights and provide data-driven recommendations for curriculum improvements.

### **Methodology**

This qualitative study will involve semi-structured interviews with 20 final-year MBBS students from two medical colleges. Using ChatGPT 4.0, sentiment analysis will identify key themes and categorize feedback into emotions, targeting areas such as course content, teaching methods, assessment strategies, and learning resources.

### **Results**

The study anticipates revealing both positive and negative trends in student perceptions, with feedback highlighting areas of satisfaction and frustration. Insights derived from sentiment and emotion analyses will inform specific, actionable recommendations to enhance curriculum relevance and effectiveness.

### **Conclusion**

AI-driven sentiment analysis offers a systematic approach to curriculum enhancement by providing nuanced insights into student experiences. This approach enables targeted improvements in medical education, aligning the curriculum with student needs and emerging professional demands.

**Keywords:** Curriculum, Medical Education, Sentiment Analysis, Artificial Intelligence, Psychological Feedback, Qualitative Research.

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## **6. Developing Collaborative Competencies Through Simulation-Based Interprofessional Education**

**Sara Hussain Gardezi**

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### **Introduction**

Simulation-based interprofessional education (Sim-IPE) can ensure the standardized development of core competencies in an interprofessional team, resulting in safe, high-quality care. It provides an effective platform to practice communication skills and teamwork in a realistic, controlled, and psychologically safe environment, resulting in effective decision-making and teamwork.

### **Methodology**

Out of 24 articles retrieved, nine related articles were selected for the poster to explore the effectiveness of simulation-based teaching in IPE and uncover evidence-based strategies for implementing a longitudinal Sim-IPE program.

### **Results**

Long-term behavioral changes can only be produced by longitudinal IPE. The introduction of simulation-based activities earlier in the curriculum can help students develop a clearer understanding of the roles of different members of an interprofessional team, allowing them to navigate complex healthcare situations more effectively.

### **Conclusion**

Sim-IPE can be effectively used to enhance knowledge and collaborative competencies among students in an interprofessional setting. However, further research is needed to determine the optimal frequency and duration of Sim-IPE to achieve the desired results.

**Keywords:** Interprofessional Education, Collaborative Competencies, Simulation-Based Learning.

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## **7. Role of AI in Student Assessment and Feedback in Medical Education**

**Sehar Zahid**

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### **Introduction**

Continuous assessments and constructive feedback are integral parts of student education and learning. AI is replacing traditionally used assessment methods quickly (Swiecki et al., 2022). Traditional assessments are uniform, biased, time-consuming, and less reliable for both students and teachers; as a result, affecting students' learning.

**Methodology:** Different databases were searched for the literature review, such as Google Scholar, PubMed, and Web of Science. It was done using the terms summative and formative assessment by AI, AI tools, and immediate feedback for student learning.

**Results:** AI tools help to motivate students, provide instant feedback, and monitor student learning and effectiveness. AI also assists in curriculum design, accountability, and policy monitoring.

**Conclusion:** Assessment for learning rather than the assessment of learning increases the sense of ownership and responsibility (Ahmad et al., 2021). Evaluation of facilitators' teaching and regulation of the course by students' performance (Braiki et al., 2020). Real-time immediate feedback changes the mindset of students from only grading to mastery-level learning (Lentz et al., 2021).

**Keywords:** AI, student assessment, feedback, medical education, continuous assessment.

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## **8.Game on! Using Gamification Tools to Enhance Learning for BDS Undergraduate Students**

**Shanzay Tariq**

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### **Introduction**

In the digital age, education is evolving with innovative methods like gamification (game-based mechanics) introduced by Nick Pelling in 2002. In dentistry, gamification gained attention in the 2010s to improve student engagement and knowledge retention. It enhances learning by using game mechanics to motivate action and solve problems.

### **Methodology**

In 2018, a Finnish study found that Kahoot improved grades and satisfaction by 77.5% in dental histology. A 2023 study showed SimOL increased BDS students' knowledge scores from 2.11 to 2.39 for oral lesion treatment. In 2021, a Serbian study using AR for anesthesia training achieved a 90.9% success rate.

### **Results**

Gamification can transform dental education by boosting engagement, motivation, and learning outcomes. Studies show gamification can enhance dental education by increasing engagement, motivation, and learning outcomes, particularly at the University of Lahore.

### **Conclusion**

Gamification, BDS students, Kahoot, Augmented Reality

**Keywords:** Gamification, Dental Education, Engagement, Knowledge Retention

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## **9. Perception of neurosurgical residents about learning in operation theatre in tertiary care hospitals**

**Sohail Amir**

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### **Introduction**

Students in Neurosurgery programs worldwide must be in the operating room with their patients, but little is known about this aspect of medical education. Most of the operating room literature is normative, written from the surgeon's standpoint as a teacher. On the other hand, this paper presents the student's perspective as a learner. The learning environment is a context in which postgraduate resident teaching, training, and learning occur. Learning in all domains, i.e., knowledge, skill, and attitude, is critical in achieving competency in their respective professions in training institutes.

### **Methodology**

From March 2022 to August 2022, this cross-sectional study was carried out in the Department of Neurosurgery Hayatabad Medical Complex, Peshawar, Lady Reading Hospital Peshawar, and Ayub Teaching Hospital Abbottabad. The STEEM survey examined how surgical theatres were perceived as educational environments. After receiving informed consent, a printed questionnaire was provided to 32 surgical residents. SPSS 24 was used for data analysis.

### **Results**

Thirty-one (31) of the 32 surgical residents that were surveyed (or 98.3%) answered. Residents' average age was 29.27 years (2.37); 27 were male, and 05 were female. Most residents were in their third (34.4%) and fourth (21.3%) years of residency. 147.66 (18.57) was the overall mean score. Participants' age and gender did not affect the mean scores; nevertheless, responses were statistically more favorable for residents in their first or fifth year of residency. Fifty-three locals responded favorably or positively overall.

### **Conclusion**

Overall, residents had positive opinions of their training, their supervisors, the opportunities for learning in the operating room, the environment, and the monitoring they received.

**Keywords:** Perception, Neurosurgical Residents, Learning Environment, Operation Theatre Learning

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## **10. Comparison of Human and Artificial Intelligence expertise in identifying Multiple Choice Questions (MCQs) item flaws**

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## **Introduction**

Multiple-choice questions (MCQs) are a widely used form of assessment in higher education, both for formative and summative evaluations. MCQs are advantageous because of their efficiency to score, objective grading, ability to generate item-analysis data, and the shorter time required for students to respond. Multiple-choice questions with item-writing flaws can negatively impact student learning and skew analytics.

## **Methodology**

Proposed Statistical Analysis

- **Descriptive Statistics:**
  - Frequency and Percentage: Calculate the frequency and percentage of each type of flaw identified by human experts and the AI-driven chatbot.
  - Mean and Standard Deviation: Calculate the mean and standard deviation of the total number of flaws identified by each method.

## **Results**

This study aims to address this gap by comparing the performance of human experts and an AI-driven chatbot in identifying flaws in MCQs. The findings could revolutionize the approach to MCQ item analysis in medical education, potentially leading to more reliable assessments and better learning outcomes.

## **Conclusion**

MCQs, Flaw, Comparison

**Keywords:** Human Expertise, AI Analysis, Item Flaws, Medical Education

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## **Leadership and Professional Development**

### **1. Digital Mentors: Crafting Tomorrow's Leaders Today**

**Ansa Rabia**

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**Introduction:** With the advent of the new technology era, digital mentoring is a timely necessity. We must go beyond traditional face-to-face interactions to embrace various synchronous and asynchronous platforms (e.g., Skype, Edmodo, Moodle). Digital mentoring has the potential to enhance medical training and patient services, is cost-effective, and supports continuous professional development.

**Methodology:** Digital mentoring can foster leadership in undergraduate medical students through the following approaches:

- Mentee-centric focus
- Online portfolios
- Inclusivity for underrepresented mentees
- Time efficiency
- Long-term relationships
- Distant mentoring options
- Personal support

However, there are notable limitations:

- Dependence on consistent and reliable internet connectivity
- Availability of gadgets
- E-skills proficiency among users
- Potential for less trusting relationships
- Lack of personal commitment
- Confidentiality issues related to cybersecurity

**Results:** Digital mentoring can effectively assist medical students in achieving professional excellence and becoming tomorrow's leaders, as endorsed by PMDC, by reducing attrition rates through improved connectivity with mentors.

- It promotes a more inclusive environment by incorporating diversity, equity, and inclusion, leading to lasting bonds between mentors and mentees.

**Conclusion:** Digital mentoring serves as a powerful tool in medical education, fostering leadership and enhancing the overall quality of training.

**Keywords:** Mentors, Digital, Leadership, Medical Education

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## **2. Perceived Clinical Skills Competence and Learning Environment: A Cross-Sectional Analysis of Medical Students in Clinical Years at a Public Medical College in Azad Kashmir**

**Bayan Muhammad Arif and Sania Sajid**

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**Introduction:** Clinical skills are the cornerstone of competency-based education, aimed at making medical students practice-ready. A student's performance in clinical settings is crucial for producing competent clinicians (Lewis, L., 2022). This study aims to measure and correlate students' perceived competence in clinical skills with their perception of the clinical learning environment.

**Methodology:** In this cross-sectional study, random sampling was employed, with a sample size of 112 drawn from a population of 300 clinical students at Mohtarma Benazir Bhutto Shaheed Medical College, Azad Kashmir. The IMU Competence Survey and Clinical Learning Environment Scale were utilized, and Spearman correlation was determined. The data were analyzed using SPSS version 30.0.

**Results:** A total of 68.3% of students perceived their clinical skills to be at or above the expected level, while 43% rated their practical skills similarly. The Spearman correlation between clinical skill competence and learning environment was  $r=0.267$ ,  $p=0.357$ ,  $n=14$ , indicating a weak positive association. The perceived practical skills exhibited the weakest correlation ( $r=0.051$ ) with learning environment variables.

**Conclusion:** The shortcomings in practical skills identified in over half of the students represent a multifaceted challenge. The weak association between clinical skills and the learning environment suggests that various other factors must be involved. Future studies should investigate other factors contributing to clinical incompetence and enhance opportunities for hands-on learning.

**Keywords:** Clinical Skills, Competency-Based Education, Clinical Learning Environment, Bedside Learning, Health Professions Education

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### 3. Exploring the Factors Attributing to Differential Attainment in Postgraduate Surgical Trainees

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**Introduction:** Differential attainment refers to uneven academic performance and career progression among postgraduate medical trainees from diverse backgrounds, despite having similar entry qualifications. This phenomenon is well-recognized across various specialties and poses complex issues with significant consequences.

**Methodology:** This mixed-methods study employs an exploratory approach. Sample size will be calculated using the EPI calculator, employing a random probability sampling technique. Inclusion criteria include trainees currently enrolled in postgraduate surgical training programs, while exclusion criteria comprise those with prior advanced qualifications or extensive experience beyond standard postgraduate training.

**Results:** Key factors identified include:

- **Demographic:** Age, gender, and ethnicity linked to attainment.
- **Sociocultural:** Cultural background, language proficiency, and support systems.

- **Personal:** Motivation, resilience, and prior educational experiences.
- **Environmental:** Quality of training facilities, resource availability, and mentorship.
- **Systemic:** Institutional policies, bias/discrimination, and access to opportunities.

Patterns of differential attainment reveal that certain demographic groups consistently show varying levels of achievement, with systemic barriers disproportionately affecting specific groups.

**Conclusion:** To enhance equity, it is essential to create fair and equitable training environments, reduce disparities in academic performance, and improve training outcomes. This involves developing supportive training programs, formulating policies to mitigate differential attainment, and enhancing mentorship and guidance programs for underrepresented groups.

**Keywords:** Achievements, Training

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#### **4. Impact of Medical School Experiences on the Career Choice of Neurosurgery: A Cross-Sectional Study from Pakistan**

**Eisha Abid Ali**

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**Introduction:** Pakistan grapples with an inadequate neurosurgery workforce. Previous studies have highlighted various factors, including medical school experiences, that impact career choices. However, no study has specifically examined this impact among Pakistani medical students, particularly concerning neurosurgery. This study aims to evaluate how exposure influences medical students' decisions to pursue neurosurgery.

**Methodology:** A national cross-sectional survey was conducted, collecting data from medical students, interns, and medical officers over a one-month period. Ethical approval was obtained from the Ethical Review Committee at Aga Khan University, Pakistan. Data were analyzed using SPSS version 26.

**Results:** Of the 2618 participants, 38.0% were male and 62.0% female, with an average age of 21.82 years ( $\pm 2.65$ ). Only 358 (13.6%) expressed interest in pursuing neurosurgery, with females (58.9%) showing greater interest. Notably, students from public sector institutions (52.2%) exhibited more interest compared to their counterparts.

**Conclusion:** This study highlights the need for increased student engagement to encourage the decision to pursue neurosurgery among medical students in Pakistan. Addressing disparities in experiences and fostering a supportive educational environment can cultivate a future generation of skilled and dedicated neurosurgeons, ultimately contributing to advancements in patient care and research in this field.

**Keywords:** Neurosurgery, Medical Education, Medical Curriculum

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## **5. Identifying Challenges in Implementing PERLS (Professionalism, Ethics, Research, and Leadership) Module in Undergraduate Medical School: Perception of Stakeholders**

**Hafiza Hina Pasha**

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**Title: Introduction:** The increasing emphasis on incorporating soft skills in medical education has led to the development and integration of a module on selected soft skills (Professionalism, Ethics, Research, and Leadership: PERLS) as part of the new integrated modular curriculum in the MBBS program at the University of Health Sciences Lahore.

**Methodology:** Responses from participants will be analyzed to generate themes. Investigating challenges in implementing the PERLS module provides valuable insights for curriculum reforms, faculty development initiatives, and institutional policies aimed at enhancing the quality of medical education. It can guide further development and adaptation for better integration into medical education programs.

**Results:** The study's conclusions will be drawn after conducting the research.

**Conclusion:** The implementation of soft skills in medical education is crucial for developing well-rounded healthcare professionals.

**Keywords:** Soft Skills, Curriculum, Integration

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## **6. Transforming Team Dynamics: The Impact of Team STEPPS® Training on Teamwork and Interprofessional Communication in Maternity Care**

**Tayyiba Wasim**

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**Introduction:** Pakistan has one of the highest maternal mortality rates in South Asia. Implementing a validated Interprofessional Education (IPE) curriculum using TeamSTEPPS® can enhance teamwork and communication in maternity care. This study aims to develop and implement a foundational IPE pilot module for healthcare providers working in labor wards using the TeamSTEPPS® framework.

**Methodology:** This quasi-experimental study will be conducted in the Labour Ward of Services Hospital, Lahore. Residents, nursing students, and anesthetists will participate in a two-week Team STEPPS® education module, comprising didactic lectures and simulation exercises delivered by trained faculty. Participants will be assessed pre- and post-training using the Team STEPPS Team Performance Observation Tool.

**Results:** The study aims to demonstrate the effectiveness of the Team STEPPS® module in enhancing communication and teamwork skills. The development of effective, structured training modules that can be adapted and utilized in different healthcare settings will be emphasized, with potential replication in other acute care environments, such as emergency departments and surgical units.

**Conclusion:** Implementing the findings from this study can lead to more cohesive, efficient, and patient-centered care in the high-stakes environment of labor rooms, ultimately improving the overall quality of healthcare delivery. Additionally, mutual respect among healthcare professions will be enhanced, contributing to reduced maternal mortality rates.

**Keywords:** Interprofessional Education, Teamwork, Communication, Maternal Care

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## 7. Perception of Faculty Regarding Professionalism in a Public Sector University

**Hudebia Allah Buksh**  
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**Introduction:** Professionalism is a fundamental component of medical education, encompassing ethical standards, effective communication, and accountability in clinical practice. Understanding faculty perceptions of professionalism in academic settings is crucial for fostering a positive learning environment and enhancing educational standards in healthcare institutions. **Objective:** To evaluate the perceptions of professionalism among medical and dental undergraduate and postgraduate students as well as faculty members.

**Methodology:** The study was conducted at Liaquat University of Medical & Health Sciences, Jamshoro, using a mixed-methods research design with a sequential explanatory approach. A total of 21 faculty members who had been teaching at the institution for at least six months were included, while those who did not provide consent were excluded. Quantitative data were collected using a questionnaire that assessed perceptions of professionalism through Likert-scale and closed-ended questions. Data were analyzed using SPSS version 22. Descriptive statistics were calculated. Qualitative data underwent thematic analysis through open coding to identify key themes and patterns, ensuring data saturation and reliability.

**Results:** 86% of faculty consistently uphold ethical standards, with 95% ensuring patient confidentiality. A strong emphasis on respect was reported by the faculty, as 91% reported treating patients, students, and colleagues without discrimination. Communication was found to be another

key strength, with 85% maintaining a professional tone, though only 53% feel they handle conflicts effectively. In terms of personal and professional growth, 86% of faculty members expressed a commitment to lifelong learning and continuous development, highlighting the importance of staying current in their fields. Lastly, 76% of faculty involve patients in shared decision-making, stressing a patient-centered approach that is critical to their role in healthcare education.

**Conclusion:** Our study demonstrates that faculty members prioritize ethical standards, patient confidentiality, and respectful communication, while maintaining a strong commitment to continuous professional development and patient-centered care. However, there are areas for improvement, particularly in conflict resolution and fostering a more supportive organizational culture.

**Keywords:** Perception of Faculty, Medical Professionalism, Conflict Resolution, Ethical Standards, Communication Skills

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## Teaching and Learning

### 1 Experiences of Undergraduate Medical, Nursing Students and Faculty regarding Flipped Classroom: A Mixed Method Study at Private Medical University in Pakistan

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**Introduction:** The flipped classroom (FCR) is a pedagogical approach that actively engages students in the learning process, reducing passivity and encouraging reasoning and concept application. This instructional method enhances retention and decreases distraction by fostering interaction among students and instructors.

**Methodology:** This mixed-method study was conducted at Aga Khan University Hospital, involving 442 students from the medical college and the school of nursing and midwifery, with a female-to-male ratio of 339:103.

**Results:** Both medical and nursing students found the FCR format stimulating. A significantly higher proportion of medical students (73%) found the FCR more engaging and interesting than traditional lectures compared to nursing students (59%) ( $p=0.009$ ). Similarly, 73% of medical students believed that the learning objectives for both non-face-to-face and face-to-face sessions were clearly communicated, compared to 62% of nursing students ( $p=0.002$ ). A greater proportion of medical students (76%) found the FCR format more useful for applying their theoretical knowledge than nursing students (61%).

**Conclusion:** Students perceived the FCR as more engaging and beneficial for applying theoretical knowledge. Faculty also found this approach effective, though challenging in engaging students. It is recommended to conduct more FCR sessions to promote interactive and student-centered



learning, emphasizing proper session planning and the use of diverse technological tools to enhance engagement.

**Keywords:** flipped classroom, active learning, student engagement, medical education, nursing education

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## **2. Co-creating a Humanities and Social Sciences Asynchronous Online Module with Undergraduate Medical Students**

**Ammar Qasim**

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**Introduction:** Traditional medical education often excludes student perspectives in curriculum design, leading to a lack of relevance and engagement. Co-creation presents a promising approach to involve students in curriculum development, enhancing inclusivity and student satisfaction. This study aims to co-create a Humanities and Social Sciences asynchronous online module with undergraduate medical students.

**Methodology:** The study employs an explanatory mixed-methods design and will take place over five months (October 2024 – February 2025) with 150 first-year MBBS students participating. Data collection will include surveys, focus groups, and pre- and post-tests to assess student engagement, satisfaction, and the inclusivity of the co-creation process.

**Results:** The module is expected to enhance student engagement and satisfaction by integrating humanities and social sciences into the medical curriculum. The asynchronous format will accommodate diverse learning styles, making the module accessible and improving the inclusivity of the learning experience.

**Conclusion:** The co-creation process is anticipated to demonstrate the significance of student involvement in curriculum design. The study will provide insights into how co-creation can foster inclusivity in medical education, potentially serving as a model for future curriculum development initiatives.

**Keywords:** co-creation, humanities, social sciences, medical education, student engagement

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## **3 Shaping the Future of Healthcare: Success Stories and Challenges in Community-Oriented Medical Education Programs**

**Atika Masood**

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**Introduction:** Community-oriented medical education (COME) was introduced in 1979 during the first meeting of the Network of Community-Oriented Educational Institutions for Health Sciences. It focuses on the health needs of population groups and individual persons, promoting a more relevant and responsive medical education.

**Methodology:** A comprehensive literature review was conducted using databases such as PubMed, Google Scholar, and Web of Science, utilizing keywords including "community-oriented education," "community-based education," "COME," and "community engaged education." The search spanned from 1990 to 2024, resulting in the selection of 11 studies.

**Results:** COME programs adopt a transformative approach to medical education, significantly contributing to addressing healthcare disparities and fostering social accountability among healthcare professionals. The integration of community engagement, interprofessional education, and a focus on public health empowers students to effectively respond to the healthcare needs of underserved populations.

**Conclusion:** While COME has shaped the professional pathways of medical graduates, encouraging them to work for the betterment of communities, the implementation of COME programs still faces challenges, including resource constraints, faculty preparedness, and sustainability concerns.

**Keywords:** COME, community-oriented medical education, community-based education, healthcare disparities

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#### **4. GPT-Based System for Providing Real-Time Personalized Feedback on Clinical Knowledge and Reasoning to Medical Students in Outpatient Clinics**

**Ayesha Qamar**

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**Introduction:** This study explores the implementation of a GPT-based system designed to provide real-time, personalized feedback to medical students during their outpatient rotations. With the increasing integration of AI in education, this system aims to address the feedback gap in clinical settings, thereby improving students' clinical reasoning skills and knowledge retention.

**Methodology:** A mixed-methods approach will be employed, combining quantitative data from student performance metrics with qualitative feedback regarding the GPT system. Medical students engaged in outpatient rotations will receive real-time AI-driven feedback on their clinical knowledge and reasoning. Follow-up interviews and surveys will assess the efficacy and usability of the system.

**Results:** The GPT-based feedback system is anticipated to enhance students' clinical reasoning and knowledge retention. It will improve efficiency by alleviating educators' workload through

real-time personalized feedback, ultimately enhancing student learning outcomes and providing valuable insights into the use of AI-driven educational tools.

**Conclusion:** The GPT-based feedback system is expected to demonstrate significant improvements in students' clinical knowledge acquisition and reasoning while streamlining the feedback process for educators. This integration of AI has the potential to transform outpatient clinical education, making it more efficient and personalized for healthcare training environments.

**Keywords:** GPT-based feedback, real-time feedback, medical education, clinical reasoning, outpatient teaching

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## **5. Role of Technology-Enabled Reflective Practice in Improving Clinical Skill Scores in Medical Students**

**Mehwish Iftikhar**

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**Introduction:** This study investigates the impact of technology-enabled reflective practice through blogging on the clinical skills of final-year medical students. By incorporating blogging as a reflective tool, the study aims to enhance students' engagement, self-awareness, and clinical performance, providing valuable insights for curriculum development in medical education.

**Methodology:** Data collection methods will be determined upon completion of the research.

**Results:** Results will be provided after the completion of the research.

**Conclusion:** This study emphasizes the importance of technology-enabled reflective practices, such as blogging, in medical education and their potential to enhance clinical skills training and reflective learning.

**Keywords:** technology-enabled reflective practice, blogging, medical education, clinical skills training, reflective learning

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## **6. Ethical Considerations in the Use of AI in Medical Education: A Review on Students' and Teachers' Perspectives**

**Mohsin Masud**

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**Introduction:** As artificial intelligence (AI) becomes increasingly integral to healthcare and medical education, it enhances learning opportunities but raises ethical concerns related to data privacy, algorithmic bias, accountability, and diminished student-teacher interaction. This review explores these ethical issues from the perspectives of both students and educators, underscoring the necessity for fairness and transparency.

**Methodology:** The study identifies key ethical concerns voiced by students and teachers, including data privacy, bias, decision-making control, accountability, and the impact on student-teacher relationships.

**Results:** Engaging both educators and students in discussions about the role of AI in education is crucial. Collaborative efforts are essential for developing ethical AI systems, ensuring that both perspectives are considered in policymaking to maximize AI's potential while minimizing risks and fostering trust among stakeholders.

**Conclusion:** The ethical considerations surrounding AI in education must be prioritized to create a responsible and effective integration of technology in medical education.

**Keywords:** AI in education, ethical considerations, medical education, data privacy, student-teacher relationship

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## **7. Large Learning Models: A Learning Technique Staying Aligned with Students**

**Noor Ijaz**

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**Introduction:** Large Language Models (LLMs) are advanced AI models using deep learning architectures, capable of understanding natural language and offering applications in education, including text generation, coding assistance, and program development.

**Methodology:** A comprehensive literature review was conducted, analyzing six articles closely related to the research topic to provide a foundational understanding of LLMs in educational settings.

**Results:** The analysis revealed significant improvements in learning outcomes for students using LLM-assisted learning compared to traditional book-based study.

**Conclusion:** LLMs are transforming education by providing personalized feedback and fostering an inclusive learning environment, functioning as intelligent tutoring systems that enhance student engagement and accessibility.

**Keywords:** Large Language Models (LLMs), Student Engagement, Personalized Learning

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## Technology enhanced learning and AI

### 1. Comparing Human Tutor with AI Video-based Tutor in Acquisition of Knowledge and Satisfaction in Medical Students

**Amna Rizvi**

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**Introduction:** The landscape of medical education is evolving, with AI-driven platforms providing personalized, accessible, and consistent learning experiences. Human tutors, while valuable, face challenges in scalability. This study aims to compare AI video-based tutors and human tutors concerning knowledge acquisition and student satisfaction.

**Methodology:** The research proposal is still in progress; results will be posted once the study is conducted.

**Conclusion:** The goal is to develop a hybrid model that combines the strengths of both human and AI-driven tutoring systems.

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### 2. Explainable AI in Health Care

**Ayesha Khan**

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**Introduction:** Artificial Intelligence (AI) is reshaping healthcare through enhanced diagnostic, prognostic, and treatment capabilities. However, the opaque nature of many AI models raises concerns regarding trust, transparency, and accountability. Explainable AI (XAI) seeks to address these issues by making AI systems interpretable, allowing healthcare providers and patients to understand and verify AI-driven decisions.

**Methodology:** This research poster explores the significance of XAI in clinical decision support systems, detailing methods to achieve explainability in AI algorithms (e.g., LIME, SHAP, decision trees). It discusses the trade-offs between model accuracy and explainability, highlighting case studies in diagnostic imaging, personalized medicine, and electronic health records.

**Results:** The findings indicate that simpler models like decision trees offer higher transparency but lower predictive accuracy, whereas complex models (e.g., deep learning networks) excel in accuracy but are less interpretable without tools like LIME and SHAP, which enhance understanding of model decisions.

**Conclusion:** XAI presents a pathway to foster trust and transparency in healthcare AI systems. Although there is a trade-off between accuracy and explainability, integrating XAI methods into clinical workflows can facilitate AI adoption in critical diagnosis and treatment planning.

**Keywords:** Explainable AI, healthcare, clinical decision support, trust, transparency

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### 3. Artificial Education in Research

**Dr. Muhammad Uthman Ahmad**

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**Introduction:** Multiple-choice questions (MCQs) are a prevalent assessment method in higher education, beneficial for their scoring efficiency and objective grading. However, flaws in item-writing can adversely affect student learning and data analysis.

**Methodology:** This quantitative comparative experimental study will be conducted in the Department of Neurosurgery at Punjab Institute of Neurosciences, Lahore, over six months following ethical review board approval. The study compares the performance of human experts and an AI-driven chatbot in identifying flaws in MCQs.

**Results:** The proposed statistical analysis will include descriptive statistics, calculating frequencies and percentages of flaws identified by both human experts and the AI chatbot, along with means and standard deviations of total flaws identified.

**Conclusion:** This study aims to enhance the identification of flaws in MCQs, potentially revolutionizing item analysis in medical education and improving assessment reliability and learning outcomes.

**Keywords:** MCQs, flaws, comparison, medical education

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### 4. Impact of Artificial Intelligence on Dental Education

**Dr. Uswa Qaiser**

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**Introduction:** The rise of generative AI has become essential in dental education, emphasizing its human sensitivity. This study highlights the significance of AI in dental education through a literature review, showcasing its impact on the field.

**Methodology:** A literature search was conducted across various electronic databases for articles published from 2019 to 2024, focusing on AI's role in dental and patient education. Gray literature from organizational websites was included, while irrelevant studies were excluded.

**Results:** AI significantly influences dental education by providing students with easy access to extensive knowledge, enabling rapid analysis of clinical and radiographic data. Innovative tools for patient education and simulation training have been developed and implemented.

**Conclusion:** AI is revolutionizing dentistry, improving patient outcomes through innovations in education and procedures. Ethical considerations regarding AI's impact should be addressed as its role in enhancing dental care continues to expand.

**Keywords:** AI in dental education, machine learning in dentistry, impact of AI on learning, patient communication

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## 5. Medical Education in Your Ears: The Role of Podcasts

**Dr. Momina Gul**

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**Introduction:** Podcasts have emerged as popular digital audio-visual tools in medical education, offering flexibility and accessibility. They facilitate the sharing of clinical knowledge and innovations, supporting self-paced learning and professional development across various specialties.

**Methodology:** A literature review was conducted using databases such as PubMed and Google Scholar from 2014 to 2022, utilizing search terms like "medical education podcasts" and "podcasting." Relevant studies were analyzed to assess their impact on medical education outcomes and learner engagement.

**Results:** Podcasts enhance knowledge retention and improve test scores, with significant engagement among residents. Users value their flexibility, and evidence suggests that podcasts positively influence professional development and higher-order skills, including critical thinking and clinical decision-making.

**Conclusion:** Podcasts are valuable tools for modern medical education, promoting self-paced learning and professional development. They hold the potential to enhance critical thinking and clinical decision-making, serving as promising resources in the evolving digital landscape of medical education.

**Keywords:** Podcasts, Medical Education, Digital Learning, Professional Development, Clinical Decision-Making

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## 6. Impact of Artificial Intelligence on Medical Education in Ophthalmology

**Dr. Syed Abdullah Mazhar**

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**Introduction:** AI plays multiple roles in digital learning, including clinical and surgical training, tele-education modules, e-libraries, online assessment tools, video communication, simulators, and intelligent tutoring systems.

**Methodology:** A literature search was conducted using PubMed, ERIC, and Google Scholar with terms related to the impact of AI on ophthalmology and medical education. Recent articles were selected for SWOT analysis.

**Results:** The future of medical education in ophthalmology is shaped by AI, impacting curriculum design, lecture planning and delivery, assessment, imaging techniques, diagnosis, and ethical considerations.

**Conclusion:** AI can lead to more personalized, engaging, and effective learning experiences in ophthalmology education. However, limitations include acceptance challenges due to perceived transparency issues, safety concerns, data usage, biases, and the learning curve associated with new technologies.

**Keywords:** Impact of AI on ophthalmology, role of AI in medical education, medical education in ophthalmology

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## **7. Recognition and Reward for Clinical Educators: A Critical Component of Medical Education**

**Dr. Syed Ali Raza**

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**Introduction:** Clinical educators are vital in medical education, serving as mentors and knowledge experts. Despite their essential role in shaping future healthcare professionals, many remain underappreciated and insufficiently rewarded. Recognizing these educators is crucial for fostering motivation, professional growth, and high educational standards.

**Methodology:** This study aims to emphasize the critical role of clinical educators in developing competent medical professionals, explore current recognition and reward systems, identify gaps, and develop strategies that include intrinsic and extrinsic rewards while advocating for institutional support and policies.

**Results:** Recognizing clinical educators is critical for enhancing morale, improving student learning, retaining and recruiting educators, promoting innovation, and building a culture of excellence. Recommendations include developing clear recognition criteria, creating formal recognition programs, offering monetary and non-monetary rewards, providing career advancement opportunities, and encouraging scholarly work in medical education.

**Conclusion:** A structured recognition system acknowledging both intrinsic and extrinsic contributions can enhance educator motivation, improve teaching outcomes, and elevate the overall educational experience. Effective recognition and reward systems can ensure long-term success in recruiting and retaining high-quality clinical educators.

**Keywords:** Recognition, clinical educators, medical education

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## **8. Comparison of Facilitator-Supported Workshop Versus Chat GPT-Supported Self-Directed Learning Session for Feedback Literacy in Pediatric Medical Students**

**Fatima Tahira**

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**Introduction:** Feedback literacy involves understanding, interpreting, and effectively utilizing feedback. Previous studies have examined how feedback processes affect medical students' receptiveness, yet the concept of feedback literacy remains underexplored, particularly regarding its direct impact on performance.

**Methodology:** This two-phase study will first determine a cut-off score for feedback literacy using median split and ROC analysis. In phase II, a structured Feedback Literacy Training will be implemented, sampling through simple randomization. A 21-item feedback literacy



questionnaire using a 5-point Likert scale will assess feedback attitudes and practices among final-year MBBS students during their pediatric rotation. Data will be analyzed using SPSS version 22.

**Results:** The study anticipates a significant improvement in student outcomes regarding knowledge and skills. The comparative analysis of the interventions will identify the most effective strategies for enhancing feedback literacy, considering cost-effectiveness and efficiency in student skill development.

**Conclusion:** This study aims to fill gaps in existing research by providing a valid tool to establish a direct correlation between feedback literacy and student performance.

**Keywords:** Feedback literacy, self-directed learning

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## **9. Development, Implementation, and Evaluation of an E-Portfolio for 4th Year Students in Dental Education**

**Gulrez Amin**

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**Introduction:** E-portfolios have gained popularity in higher education, serving as a platform for students to document learning experiences, showcase achievements, and engage in reflective practices. In dental education, e-portfolios can help 4th-year students develop and demonstrate clinical skills and professional competencies.

**Methodology:** A consensus-based e-portfolio will be developed using the modified Delphi technique, involving medical educationists with dental backgrounds. Quantitative data will be analyzed using descriptive and inferential statistics to compare perceptions between male and female students.

**Results:** The implementation of the e-portfolio is expected to enhance student engagement and improve the overall learning experience.

**Conclusion:** The study will evaluate the effectiveness of the e-portfolio in dental education, contributing to improved educational outcomes.

**Keywords:** E-portfolio, student engagement, dental education

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## **10. The Establishment of a Holistic Curriculum Parallel to Medical Education Aimed at Developing Dynamic Doctors**

**Hamza Irfan**

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**Introduction:** The Punjab Medical Education System has seen limited evolution, leading to a situation where doctors lack exposure to disciplines beyond medicine. Integrating knowledge from other fields can enable doctors to become more dynamic professionals.

**Methodology:** The study will involve selecting various courses (e.g., History, Economics, Sociology, Computer Science) and administering questionnaires to assess students' knowledge, interests, and willingness to pursue additional courses. An optional four-month course covering writing, research, humanities, and social sciences will be proposed for the upcoming batch.

**Results:** Preliminary research indicates shared interests in undergraduate and postgraduate education, suggesting that leadership skills, mentorship programs, and digital tools can enhance dynamism among doctors.

**Conclusion:** The initiative seeks to gather positive feedback from students and educational authorities to enhance medical curricula, allowing students to explore interdisciplinary knowledge and become more socially sustainable and dynamic.

**Keywords:** Medical Education, Holistic Education, Dynamism, Social Science, Personal Development, Innovation

## **11. Evaluating the Trends in Professional Motivation and Career Retention for Female Doctors in Pakistan**

**Hamza Irfan**

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**Introduction:** Despite women constituting up to 70% of medical students in Pakistan, nearly half are estimated not to continue in medicine after graduation or pursue further specialization.

**Methodology:** The study will gather data on the number of female medical students across the country. A survey will assess whether their decision to enter medicine was personal or family-influenced, and whether they intend to continue in the field. In-depth interviews will be conducted with willing participants.

**Results:** Preliminary findings suggest that many female students are influenced by societal expectations to enter medicine but face discouragement in pursuing a medical career post-graduation. The male-centric training environments present additional challenges (Moazzam and Sheikhani).

**Conclusion:** Traditional gender roles and societal expectations impact the career trajectories of female doctors, affecting the availability of professionals in the medical field.

**Keywords:** Medical Education, Post Graduate Training, Women, Specialization, Society, Tradition

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## **12. Transforming Medical Educators Into Innovators Through Design Thinking Workshops**

**Hira Amran Chowdhry**

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**Introduction:** Medical educators play a crucial role in shaping healthcare systems. Evolving their teaching methods to better engage students is essential for cultivating passion for the field.

**Methodology:** Design Thinking Workshops will be conducted at RLMC Lahore, based on the Stanford d.School's 5-stage non-linear model. Faculty from various departments will participate,

progressing from empathy to prototyping innovative teaching techniques, which will be implemented in classrooms. Feedback will be collected from both faculty and students.

**Results:** Preliminary studies indicate that educational systems employing Design Thinking yield better, more student-centered learning experiences and enhance faculty adaptability (Eamcharoen, 2024; Smith, 2018).

**Conclusion:** The study aims to generate positive feedback regarding changes in classroom dynamics and mentor-mentee relationships, leading to improved learning experiences for students.

**Keywords:** Design Thinking, Medical Education, Personal Development

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### 13. Utilizing Research Immersion to Transform Learning Among Health Professions Students

**Khaloud Tariq**

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**Introduction:** Research immersion can bridge the gap between theoretical knowledge and practical application in health professions education. This poster explores the benefits of immersive learning in research education.

**Methodology:** Five studies were identified, with one study showing a 37% increase in scientific reasoning scores among students participating in immersion courses. Other studies reported enhanced confidence in conducting scientific research and improved knowledge of basic sciences.

**Results:** The findings emphasize the need for curriculum reforms to incorporate research teaching through immersion experiences, equipping medical and dental graduates with essential research skills.

**Conclusion:** Research immersion enhances learning and practical skills among health professions students, necessitating integration into educational curricula.

**Keywords:** Research, Immersion, Clinical, Students

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### 14. Development and Validation of a Questionnaire to Measure the Awareness of Medical Students About Self-Care Practices

**Mahham Janjua**

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**Introduction:** This study aims to develop and validate a questionnaire assessing medical students' awareness of self-care practices, addressing the intense pressures they face during training.

**Methodology:** A mixed-method design will be employed, following the AMEE guide's seven steps. This includes a systematic literature review to identify existing measures and develop a questionnaire involving medical students from various Pakistani institutions over 12 months.

**Results:** The study anticipates revealing gaps in self-care knowledge among medical students,

informing educational strategies to enhance awareness and well-being.

**Conclusion:** The validated questionnaire aims to improve self-care awareness, leading to better well-being and professional performance among future healthcare providers.

**Keywords:** Self-care practices, Medical students, Awareness, Questionnaire development, Validation, Resilience, Well-being, Educational strategies, Mixed-method design

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## **15. Exploring Early Experiences of Faculty in Undergraduate Medical and Dental Education with Artificial Intelligence**

**Maryam Fatima**

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**Introduction:** Artificial intelligence (AI) is transforming medical education, introducing new teaching methods and enhancing student engagement. The integration of AI in medical education is still developing in Pakistan.

**Methodology:** The study will examine faculty experiences and perceptions of AI integration in education, addressing concerns and challenges while assessing varying levels of adoption among faculty.

**Results:** The research aims to identify key challenges and facilitating factors influencing AI adoption, which will help develop strategies to enhance faculty readiness and improve student outcomes.

**Conclusion:** Understanding faculty experiences with AI will inform strategies for effective integration, ultimately benefiting medical education and student engagement.

**Keywords:** Artificial Intelligence, Medical Education, Faculty

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## **16. Comparison of Article Writing Skills Between ChatGPT and Human Subjects: A Literature Review**

**Memoona Amin**

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### **Introduction:**

As artificial intelligence (AI) tools like ChatGPT become more prominent in academic writing, it is crucial to compare their output with human-generated content. This poster explores recent trends and developments in the use of ChatGPT for writing academic articles, focusing on linguistic complexity, content accuracy, and contextual understanding compared to human writers. The study aims to highlight both the strengths and limitations of ChatGPT in academic settings.

### **Methodology:**

The analysis revealed that ChatGPT excels in generating fluent and coherent text quickly, making it useful for streamlining the writing process. However, it struggles with context, depth, and factual

accuracy, especially in complex sections like methods and discussions. Human writers outperform ChatGPT in creativity, critical thinking, and tailoring content to specific contexts. Additionally, the quality of ChatGPT's output depends heavily on the clarity and specificity of the prompt provided.

**Results:**

ChatGPT holds potential as a complementary tool for academic writing, particularly in tasks that require quick generation of structured content. However, it cannot fully replace human expertise, especially in areas requiring deep contextual understanding and critical analysis. Future research should focus on improving ChatGPT's ability to handle complex academic sections and advancing detection tools to ensure ethical use of AI in academic settings.

**Keywords:** Artificial Intelligence, Article Writing, Chatbot, ChatGPT, Comparison, Human, Large Language Model, Scientific Writing

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## **17.Awareness of Medical Faculty About Trusting Artificial Intelligence in Making Educational Decisions: A Mixed-Method Exploratory Study**

**Muhammad Abdul Basit Ashraf**

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**Introduction:**

A questionnaire will be developed for medical faculty, including questions on beliefs, expectations, benefits, drawbacks/risks, acceptance, institutional support, teaching effectiveness, and awareness of ethical and legal implications related to AI in educational decisions. The questionnaire will be designed following a needs assessment and consultation with ethics experts. The thematic analysis of focus group discussion (FGD) data was conducted by manually analyzing transcribed data, forming themes and sub-themes regarding faculty trust and distrust toward AI and related challenges.

**Methodology:**

The study will employ a mixed-methods approach with a questionnaire and FGDs. The questionnaire includes faculty perspectives on various aspects of AI in education, while the FGD data will be manually transcribed and analyzed to identify themes and sub-themes related to trust and distrust.

**Results:**

Results will be presented following data collection.

**Conclusion:**

Educationists' willingness to accept AI in teaching and assessment is influenced by their perceptions of the technology, though the role of trust has not been extensively examined.

Investigating the impact of trust on AI acceptance, alongside attitudes and beliefs, is therefore essential.

**Keywords:** Artificial Intelligence, Trust, Perception, Decision Making

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## 18. Competency-Based Surgical Education: Trends and Challenges

**Muhammad Ahsan Rasheed Ghumman**

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### **Introduction:**

Surgical residency has traditionally followed a time-based model, with 4-5 years of training leading to board certification. Concerns about graduates' preparedness for independent practice have arisen due to factors such as work-hour restrictions, increased procedural complexity, and reduced autonomy in the operating room. Competency-Based Education (CBE) emphasizes practical skills and knowledge application, aiming to better prepare surgeons for clinical practice.

### **Methodology:**

- **Objective Evaluations:** Using OSCEs and simulation-based assessments to effectively measure clinical skills.
- **Simulation Technology:** Demonstrated to reduce surgical errors and enhance skill development in a controlled environment.
- **Advanced Tools:** Virtual reality (VR) and robotics are enhancing training.
- **Challenges in Standardization:** Competencies vary across specialties, such as neurosurgery vs. general surgery. Collaborative frameworks at national or international levels are needed for consistency.
- **Resource-Intensive Nature of CBE:** Requires substantial investments in simulation technology and specialized training.

### **Results:**

A shift from procedure-based to competency-based training is crucial in surgical education. A progressive transfer of responsibility and independence through structured, measurable stages is needed to achieve competence. Continuous innovation in learning methodologies is key to progress.

**Keywords:** Competency, Surgical Education, Training, Assessment, Simulation Technology

## 19. Immersive Learning: Augmented and Mixed Reality in Anatomy Instruction

**Nadia Majeed**

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**Introduction:**

Understanding the 3D functional structures of the human body requires more interactive and engaging learning methods than traditional approaches. The rapid development of innovative digital technologies is transforming anatomical instruction through immersive learning tools. This shift, further accelerated by the COVID-19 pandemic, highlights the evolving process of adopting augmented reality (AR) and mixed reality (MR) in medical education.

**Methodology:**

Reference studies report an improved learning experience and enhanced 3D spatial understanding of anatomical structures. AR mobile applications, such as the Visible Body Human Atlas App with AR, and MR software like the Holoanatomy suite (HoloLens), which operates across Wi-Fi networks, enhance learning when used alongside traditional methods.

**Results:**

Augmented and mixed reality have been shown to effectively support other teaching methods for undergraduate and postgraduate students in medical, dental, and allied health sciences. There is potential for anatomy educators to integrate these technologies into course design for both in-person and online learning.

**Keywords:** Immersive Learning, Augmented Reality (AR), Mixed Reality (MR), Anatomy Instruction, Anatomy Education

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**20. Automated Feedback on Clinical Notes via Natural Language Processing: Elevating Documentation Quality**

**Natasha Bushra**

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**Introduction:**

The quality of clinical documentation is critical in medical education, serving not only for patient care continuity but also as a vital tool in the educational development of medical residents (Childers et al., 2023). Automated feedback systems like ChatGPT can improve clinical documentation by offering immediate corrections and suggestions, facilitating a quicker learning cycle for medical residents.

**Objective:**

To analyze clinical notes for completeness, accuracy, and adherence to guidelines through automated feedback on documentation.

**Methodology:**

This study focuses on using a Natural Language Processing (NLP) system, specifically ChatGPT, to provide automated feedback on clinical notes written by gynecology residents.

**Expected Outcomes:**

1. Improvement in Documentation Quality
2. Increased Consistency in Documentation
3. Enhanced Educational Practice for Residents

**Results:**

The research aims to evaluate the potential of an AI-driven feedback system in enhancing the quality of clinical documentation, specifically regarding completeness, accuracy, and guideline adherence. The findings are expected to offer insights into broader NLP implementation in medical education, which could improve both patient care and the learning experience of future medical professionals.

**Keywords:** Automated Feedback, Clinical Documentation, Natural Language Processing, Medical Education

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**21. Development and Validation of Teacher Questionnaire for Measuring Enablers of Curriculum Viability**

**Nosheen Khurram**

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**Introduction:**

This study focuses on creating and validating a questionnaire aimed at identifying and measuring curriculum enablers in health professional education. By empowering teachers as key stakeholders, this tool ensures that curricula remain dynamic, meet established standards, and adapt to evolving educational needs, fostering continuous improvement and resilience in educational programs.

**Methodology:**

The study involves designing and validating the teacher questionnaire through expert reviews, pilot testing, and statistical analysis to assess reliability and validity.

**Results:**

Pending data collection and analysis, results will indicate the effectiveness of the questionnaire in measuring curriculum viability enablers and its applicability across health education contexts.

**Conclusion:**

This validated tool for identifying curriculum enablers will provide valuable insights for enhancing curriculum viability and sustainability within health professional education.



**Keywords:** Curriculum Viability, Curriculum Enablers, Curriculum Viability Framework

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## **22. Revolutionizing Medical Education: The Power of Custom GPTs**

**Palwasha Babar**

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### **Introduction:**

CustomGPT is a specialized GPT model fine-tuned for specific tasks. While GPT's tendency to fabricate information poses challenges in healthcare, customization allows for the integration of domain-specific knowledge, ensuring relevant outputs. This poster explores the application of Custom GPTs in medical education.

### **Methodology:**

Custom GPTs are transforming healthcare and medical education by providing tailored, AI-driven solutions. They assist clinicians with evidence-based recommendations, enhance decision-making, and improve patient outcomes. In educational contexts, they offer adaptive learning, enabling customized content and real-life simulations, thereby transforming knowledge application and clinical practice.

### **Results:**

The potential of CustomGPT in healthcare is vast, indicating the start of a new era in medical education driven by AI. Future research is needed to fully integrate these advancements into practical educational and clinical settings.

**Keywords:** Generative Pre-trained Transformer, Generative AI, CustomGPT, Medical Education Innovation

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## **23. Innovative Approaches and Evolving Trends of Simulation-Based Learning in Undergraduate Medical Education**

**Saba Amjad**

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### **Introduction:**

Simulation-based learning (SBL) has gained significant traction in undergraduate medical education as a method to enhance clinical skills, critical thinking, and decision-making. By using realistic scenarios and technology-driven platforms like virtual reality (VR), augmented reality (AR), and manikins, SBL provides students opportunities for hands-on practice in a controlled

environment. This study explores the evolving trends and innovations in SBL and their impact on the learning outcomes of medical students.

**Methodology:**

This study highlights the growing adoption of advanced simulation technologies, including VR and AR, which positively impact critical thinking, clinical reasoning, and leadership skills. Despite high initial costs and the need for specialized training, these tools have shown promise in improving performance outcomes, as data analysis indicates improved decision-making abilities and knowledge retention among students trained with SBL tools.

**Results:**

SBL represents a forward-looking approach to medical education, with immense potential to revolutionize clinical training. Integrating innovations like AI, VR, and AR will be essential to shape the future of medical education. Overcoming current limitations will require proper resource allocation and strategic planning, ensuring SBL's widespread implementation across institutions to train highly skilled healthcare professionals.

**Keywords:** Clinical Skills, Critical Thinking, Knowledge Retention, Simulation-Based Learning (SBL), Undergraduate Medical Education

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## 24. Augmenting Dental Clinical Skills Using Virtual Reality

**Ushna Malik**

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**Introduction:**

Dental education often relies on mannequins for hands-on practice, but these models lack the realism of actual clinical experiences. As a result, students need substantial practice and strong spatial awareness to develop precision in clinical skills. Recently, virtual reality (VR) has emerged as a transformative tool, offering an immersive and engaging approach to learning.

**Methodology:**

Literature indicates that VR enhances learning outcomes, with a 30% increase in skill retention and a 25% improvement in overall performance compared to traditional methods. Students using VR report a 40% boost in confidence and a 35% increase in engagement. Despite initial VR infrastructure costs, the long-term benefits, such as improved learning and skill acquisition, make it a valuable educational tool. Challenges, including financial barriers, accessibility, and evolving technology, need to be addressed to fully integrate VR.

**Results:**

Further exploration of VR technology, increased accessibility, and continuous updates are recommended to maintain VR's effectiveness in dental education. This review emphasizes VR's potential to reshape the future of dental training.

**Keywords:** Virtual Reality, Dental Training, Clinical Skill Development, Immersive Learning, Education Technology

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## **25. Cheating Practices in Assessment in the Era of Generative AI**

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### **Introduction:**

Generative AI, such as GPT-3 and GPT-4, offers educational benefits but also facilitates cheating, undermining academic integrity. This research explores AI-assisted cheating practices, identifies gaps in current assessments, and proposes strategies to mitigate risks. It aims to safeguard academic evaluations while addressing the ethical challenges technology presents in education.

### **Methodology:**

The study employs interviews and focus groups with stakeholders to gather insights on cheating practices and countermeasures in the era of generative AI.

### **Results:**

The study identifies AI-driven cheating methods, assesses their impact on academic integrity, and evaluates existing mitigation strategies. Recommendations for educators and policymakers are offered to address these challenges, ensuring ethical AI use while maintaining academic standards.

**Keywords:** Cheating, Generative AI, ChatGPT-4, Academic Integrity

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## **26. Comparing the Impact of Adaptive Learning versus Traditional Online Learning in Oral Pathology Students: A Randomized Control Study**

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### **Introduction:**

A lack of intrinsic motivation among students presents a challenge in oral pathology education. Research on the effectiveness of H5P scenario-based learning, especially in adaptive learning, is limited. Comparative studies on the use of traditional online tools and H5P to enhance intrinsic

motivation and improve learning outcomes are scarce. This study examines the potential of H5P in boosting student motivation.

### **Methodology:**

This randomized study was conducted on third-year BDS students at de'Montmorency College of Dentistry, Lahore, over two months. A sample of 372 students was selected via random sampling. Students were divided into Control and Intervention groups, with the Intervention group receiving H5P branching scenarios. Both groups were assessed using questionnaires measuring intrinsic motivation and MCQ tests.

### **Results:**

Pending completion of data analysis, results are expected to show the impact of H5P on motivation and learning outcomes compared to traditional online learning methods.

**Keywords:** H5P Branching Scenario, Traditional Online Learning, Intrinsic Motivation Inventory (IMI), Oral Pathology Education

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## **27. Knowledge, Attitude, and Practice Survey on Artificial Intelligence Usage in Medical Education and Research Among Medical Students in Baluchistan: A Cross-Sectional Study**

**Zahra Ali**

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### **Introduction**

As artificial intelligence (AI) technology rapidly evolves, understanding regional variations in public attitudes and knowledge is crucial. This study investigates how medical students in Baluchistan view AI and its potential impacts, aiming to provide targeted insights for policymakers, educators, and future discussions on AI in healthcare settings.

### **Methodology**

An online, cross-sectional Knowledge, Attitude, and Practice (KAP) survey was conducted via WhatsApp among medical trainees to assess their knowledge, attitudes, practices, and demographics. Ethical approval was obtained. Statistical analysis explored relationships between demographics and AI perceptions. Chi-square tests and odds ratios (95% CI,  $p < 0.05$ ) were used to assess associations.

### **Results**

The survey of 428 medical trainees revealed that 63.9% were familiar with AI, with 68.5% using it in education/research. Males had more AI knowledge ( $p = 0.018$ ), while higher-year students perceived AI's need in education ( $p = 0.007$ ). Additionally, 87.9% recognized AI's importance, and 64.3% believed it could reduce human error.

### **Conclusion**

The study highlights a generally favorable disposition towards AI in Baluchistan. Disparities in AI knowledge and attitudes across demographics underscore the need for targeted educational and policy initiatives. Enhancing AI literacy and addressing local concerns could foster greater acceptance and integration of AI technologies, preparing future doctors for evolving healthcare needs.

**Keywords:**

Artificial Intelligence (AI), Machine Learning, Deep Learning, Medical Education, Research, Medical Students, Baluchistan

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## **Well Being and Mentoring**

### **How Mentoring Helps in Solving the Conflicts of Students**

**Dr. Sobia Adnan**

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**Introduction:**

Mentoring is a semi-structured guidance program where one person shares experiences to help and guide others in their personal and professional lives. Effective mentoring involves mentors who are available and ready to offer support as needed. This study aims to explore how mentoring is beneficial in resolving conflicts among students and seeks to develop improved conflict resolution skills in mentors for addressing student issues throughout their five-year journey in medical college.

**Methodology:**

- **Study Design:** Qualitative Study
- **Setting:** University of Lahore
- **Duration of Study:** 6 months
- **Sample Size:** 10 mentors who work at the University of Lahore and actively participate in resolving student issues
- **Sample Selection:** Mentors of first-year to final-year students involved in the UOL mentoring program
- **Mentees:** 10 mentees from first-year to final-year currently enrolled in mentoring sessions at the University of Lahore

**Results:**

Mentoring has shown to be highly beneficial throughout students' five years at the University of Lahore. The mentorship program has contributed to resolving personal, professional, and academic issues among students.

**Conclusion:**

The benefits of mentoring at UCMD are evident in three main areas: students, mentors, and the

medical school itself. For students, mentoring aids in achieving career goals, strengthening relationships with faculty members, and supporting both academic and professional aspirations.

**Keywords:** Mentoring, Medical Education, Conflict Resolution, Student Support

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## **2. Motivators and Barriers to Career Choices in Community Medicine Among Medical Students in South Punjab, Pakistan: A Cross-Sectional Survey**

**Raamish Aamir Khan**

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### **Introduction:**

Community medicine is a critical field for public health, but research on medical students' career choices in this area is limited, particularly in underserved regions like South Punjab, Pakistan. This study explores the factors influencing undergraduate medical students' interest in pursuing careers in community medicine.

### **Methodology:**

A cross-sectional survey was conducted with 305 fourth- and final-year undergraduate medical students from various colleges in South Punjab. Data were collected using a structured online questionnaire, focusing on students' interests, motivations, barriers, and perceptions regarding community medicine.

### **Results:**

The survey revealed that 40% of students expressed interest in community medicine, with a higher interest level among female students. Key motivators included a focus on preventive healthcare and public health initiatives, while major barriers were financial constraints and unclear career progression. There was a noted gap between students' interest and their perceived preparedness for addressing public health challenges.

### **Conclusion:**

Female students showed a greater inclination toward community medicine and were more likely to recommend it as a career path. Addressing the gap between student interest and perceived preparedness could involve increasing practical experiences, enhancing the visibility of successes in community medicine, and addressing concerns related to financial and career progression. Implementing these strategies may help attract and retain students in community medicine and ultimately improve public health outcomes.

**Keywords:** Community Medicine, South Punjab, Career Choices, Barriers and Motivators, Medical Students Top of Form

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