HP3J

HEALTH PROFESSIONS EDUCATOR JOURNAL

THE UNIVERSITY OF LAHORE

SOME
SOCIETY OF MEDICAL EDUCATIONISTS

ABOUT THE JOURNAL

Health Professions Educator Journal
is a joint Journal of
The University of Lahore,

Lahore, Pakistan

&

Society of Medical Educationists

Health Professions Educator journal (HPEJ) aims at promoting research in medical and allied specialties in the field of education. HPEJ is an open access journal publishing original peer-reviewed research articles in relation to the training of healthcare professionals, including undergraduate, postgraduate, and continuing education. The journal has a focus on teaching and learning, curriculum development, faculty development, evaluations of performance, assessments and evidence-based medicine.

DISCLAIMER

GUEST EDITORIAL

Establishing Departments of Medical Education: A Major Challenge for Medical and Dental Colleges in Pakistan

Gohar Wajid[1]

The past few decades have witnessed numerous trends in transforming medical education including the development of educational frameworks, competency-based education and increased demands for compassion and care from the healthcare providers (Maniate, 2017). Globalization has intensely jolted the process of medical education, leading to a more complex procedure for the development of physicians (Rizwan, Rosson, Tackett, & Hassoun, 2018). There is increasing realization that the complex medical education system be driven by professional educationists with well-established educational infrastructure in medical colleges. This has resulted in escalating trend for the establishment of departments of medical education in the medical and dental colleges to run educational affairs. These departments form essential component of infrastructure to provide effective and high quality educational services in education institutes. The scope of these departments has been well recognizedglobally (Khalid, 2013).

In Pakistan, exponential increase in the number of medical and dental colleges, especially in the private sector has brought new challenges to policy makers and regulators. Ensuring the quality of medical education in over 150 medical and dental colleges has increased the volume of workload on the Pakistan Medical and Dental Council (PM&DC) several folds over the past few decades. On one hand, there is increasing competition among medical colleges to deliver high quality education and on the other hand, there is intense pressure on the PM&DC to transform rapidly to meet the challenges of the 21st century educational system. The establishment of departments of medical education in medical and dental colleges and their effective functioning plays a crucial role in ensuring the quality of medical education at the institutional and national levels. Until recently, there was no concept of such departments in Pakistan. The PM&DC took the right step to make the establishment of these departments mandatory in all medical and dental colleges in Pakistan (Khalid, 2013).

Most medical and dental colleges have established these departments, albeit on papers. Most medical colleges are struggling to equip the departments with appropriate staff and empower them with the role and functions, they are supposed to perform. Mental acceptance and commitment of senior management including deans, play a crucial role in empowering these 'infant DMEs' to take their roots in the existing educational system (Albanese, Dottl, & Nowacek, 2001). Appropriate funding of these departments is absolutely crucial. The management of the college must ensure the provision of funding for the initial years until the department becomes self-supporting (Batool, Raza, & Khan, 2018).

Shortage of qualified and trained medical educationists in the country makes the job even more challenging. (Davis, Karunathilake, & Harden, 2005) suggest a multi professional team from different professional backgrounds, including medical and educational expertise as the basic requirement for running a well-functioning DME. An ideal skill mix of human resources for a DME includes health professionals, organizers, thinkers, innovators and motivators(Davis et al., 2005). In Pakistan, DMEs are likely to start performing better, once PM&DC issues clear guidelines for staff requirements and strictly enforces regulations to employ full time and qualified educationists.

In Pakistan, another major educational challenge is defining the role and responsibilities of DMEs. The department should have an all-embracing function including teaching, research, and service provision and nurturing the carriers of the academic staff. However, the balance of these activities may vary in individual departments.A DME has the capacity to perform a range of functions in an educational institute. These functions may include faculty development, curriculum development and monitoring, a spectrum of teaching and learning activities, assessment related functions, research and development, and quality assurance and accreditation of the institute. The DME may be asked to plan educational activities or even implement the mandated activities as formal legal requirement.

A stronger and well-functioning Department of Medical Education at the PM&DC level is highly recommended to perform educational governance and regulations related functions at the national level. This department has heavy

responsibility to provide technical assistance to the PM&DC leadership, develop a nexus of DMEs in the country and fulfil training needs of DMEs at the institutional level. PM&DC leadership fully recognizes these challenges and the Chairman of PM&DC recently announced in a medical education conference about the establishment of such department at the PM&DC office. It is envisaged that the establishment and strengthening of DMEs in the PM&DC, medical universities and medical colleges will play a pivotal role in raising the quality of medical education in the country.

References:

Albanese, M. A., Dottl, S., & Nowacek, G. A. (2001). Offices of research in medical education: accomplishments and added value contributions. Teaching and learning in medicine, 13(4), 258-267.

Batool, S., Raza, M. A., & Khan, R. A. (2018). Roles of medical education department: What are expectations of the faculty? Pakistan journal of medical sciences, 34(4), 864.

Davis, M. H., Karunathilake, I., & Harden, R. M. (2005). AMEE Education Guide no. 28: The development and role of departments of medical education. Medical teacher, 27(8), 665-675.

Khalid, T. (2013). Faculty perceptions about roles and functions of a department of medical education. J Coll Physicians Surg Pak, 23(1), 56-61.

Maniate, J. M. (2017). Trends and opportunities in medical education: Aligning to societal needs and expectations. Archives of Medicine and Health Sciences, 5(2), 154.

Rizwan, M., Rosson, N., Tackett, S., & Hassoun, H. (2018). Opportunities and challenges in the current era of global medical education. International journal of medical education, 9, 111.

1.   *Visiting Professor Medical Education*

EDITORIAL

From Prescriptive Curriculum to Accreditation Standards

Rehan Ahmed Khan[1,2]

Curriculum is defined as an educational experience(Kern, Thomas, & Hughes, 2010). It is not just syllabus but how a syllabus is selected, organized, taught and assessed? It includes 'Mission and Outcomes', 'Faculty Development', 'Student Support', 'Governance' and 'Curriculum renewal'(Harden & Education, 1986). The quality of the curriculum is ensured by certain standards(Bendermacher, oude Egbrink, Wolfhagen, & Dolmans, 2017). These standards are either global as developed by World Federation of Medical Education (WFME) or National for e.g. in UK by General Medical Council, in USA by Accreditation Council for Graduate Medical Education etc. These standards provide an outline for the institutions to develop a curriculum(Karle, 2006). This approach provides flexibility, innovation, contextuality and variation but at the same time ensures uniformity of quality unlike the prescriptive curriculum provided by the regulatory body which bounds the institutes to follow same curriculum irrespective of their resources and expertise.

In our country for a very long time, MBBS curriculum was more of a syllabus. The curriculum which is available on website of the regulatory authority is discipline based, has 120 pages, of which 113 contains syllabus only("MBBS Curriculum PMDC," 2005). Pakistan Medical and Dental Council (PM & DC) took a good initiative in 2009, when it allowed five medical schools to develop and implement an integrated curriculum. This resulted in awareness about curriculum models other than discipline based in the country. It also initiated a debate about which system of curriculum is better: traditional (discipline based) or modular integrated. During the same time, WFME and Foundation of Advancement in Medical Education and Research (FAIMER), USA announced that by 2023, medical students of a country, whose national accrediting agency is not recognized by WFME, would not be allowed to take USMLE exams. In Pakistan, meeting the basic quality standards set by WFME by the national accreditation body was confused by many with the development and implementation of integrated curriculum only; not realizing that the main emphasis was on the development of contextually relevant standards to provide good quality education. This myth was broken in 2016 in statement issued by WFME, saying "WFME has always stated that every country or school should develop their own contextually relevant version of the standards." It was emphasized by the WFME that national regulator should have their own contextual standards. The letter said, 'The choices of an individual school should comply with the local regulator or accreditation body. That body, if it wishes to apply for WFME recognition, should set out standards that are appropriate to its own constituency which may be mapped on to those of WFME.' Regarding Integration, it was made clear in the same statement, that 'integration is quality development standard' which is higher than the basic standard(World Federation for Medical Education, 2015). WFME describes the basic quality standards in nine areas relating to curriculum as basic standards (minimum) and quality standards (excellence). This quality development standard is optional for schools that have attained the basic standard.(World Federation for Medical Education, 2016)

PM & DC has taken a positive and progressive step to develop its own 'National standards', that are now available on its website, developed by medical educationists and subject experts in collaboration with Higher Education Commission (HEC), Pakistan. These standards on one hand will improve the quality of curriculum at the national level and on the other hand will equate it with global standards. This will also pave the way for the country to be recognized by WFME and hence maintain the opportunity for our medical students to train abroad.

These national accreditation standards, however have given rise to some confusion in medical fraternity about developing a curriculum by medical schools of their choice. In Pakistani medical education system, Universities will have to play a decisive role by bridging the gap between the standards given by regulatory body and the development of curriculum by the medical schools.

Assessment here, is one of the main issues, which varies according to curriculum model. In a discipline-based curriculum, the assessment is subject based, whereas in Integrated system-based curriculum, assessment is done

according to body systems. If a University can cater for different assessment systems, it can provide the affiliated medical schools with the flexibility of deciding the curriculum design. However, if resources of a university limit it to single system of assessment, the University can still give leverage to its affiliated medical schools to develop a curriculum that meets the standards set by the national accreditation body.

There is also some confusion regarding the differing content taught in the medical school across the country, if a medical school is given the autonomy to develop a curriculum. It should be made clear that there always has been a basic standard syllabus provided by the National accreditation body which will remain as the minimum criteria to be fulfilled while meeting the criteria of the national curriculum standards.

It is pertinent to share here that from 2019 medical schools will be accredited not on infrastructure alone (mainly) but also on the quality of its curriculum; assessed based on the new proforma designed according to the national accreditation standards 2018. This will improve the quality of medical education tremendously in our country.

1 Prof. of Surgery & Assistant Dean Medical Education, Riphah International University

2 Visiting Prof. Medical Education, University of Lahore.

References

Bendermacher, G. W. G., oude Egbrink, M. G. A., Wolfhagen, I. H. A. P., & Dolmans, D. H. J. M. (2017). Unravelling quality culture in higher education: a realist review. Higher Education, 73(1), 39–60. http://doi.org/10.1007/s10734-015-9979-2

Harden, R. M., & Education, C. M. (1986). Ten questions to ask when planning a course or curriculum. Medical Education, 20, 356–365. http://doi.org/10.1111/j.1365-2923.1986.tb01379.x

Karle, H. (2006). Global standards and accreditation in medical education: a view from the WFME. Academic Medicine, 81(12), s43–s48. http://doi.org/10.1097/01.ACM.0000243383.71047.c4

Kern, D., Thomas, P., & Hughes, M. (2010). Curriculum development for medical education: a six-step approach. JHU Press. Retrieved from https://scholar.google.com.pk/scholar?hl=en&q=curriculum+development&btnG=&as_sdt=1%2C5&as_sdtp=#6

MBBS Curriculum PMDC. (2005). Retrieved December 10, 2017, from http://www.pmdc.org.pk/LinkClick.aspx?fileticket=EKfBIOSDTkE%3D

World Federation for Medical Education. (2015). Basic Medical Education WFME Global Standards for Quality Improvement. Retrieved October 2, 2018, from http://wfme.org/publications/wfme-global-standards-for-quality-improvement-bme/?wpdmdl=831

World Federation for Medical Education. (2016). Basic Medical Education WFME Global Standards for Quality Improvement. Retrieved October 3, 2017, from http://wfme.org/news/structure-programmes-medical-education-wfme-standards-integration/

1. *Professor Of Surgery/Assistant Dean Medical Education, Riphah International University.*

2. *Visting Professor Medical Education, University Of Lahore.*

ORIGNAL ARTICLE

The impact of regular breakfast intake on cognitive performance and emotional status of adolescent undergraduate medical students

Amrah Javaid[1,4], Iqbal Munir[2], Muhammad Eraky[3]

ABSTRACT

Background: Breakfast consumption, being the first meal of the day can be useful for better health outcomes and educational performance. Enhancement of academic capabilities of students is an essential factor that has a significant effect on their future life.

Aim: A cross-sectional survey was designed to find out the effects of regular or irregular breakfast eating habits on cognitive performance and emotional status of adolescent Saudi Arabian medical students.

Methods: In this cross-sectional study, ninety female medical students of Princess Nourah bint Abdulrahman Women University, Riyadh were recruited with an average age of 18-19 years. The students were divided into two groups A and B. Group A included 60 students who took breakfast on the day of study; whereas group B comprised of 30 students who did not take breakfast on study day. Students were tested using Test Performance Assessment Quiz to test their cognitive ability. A proforma based on positive or negative emotions of student was filled by each student. The response rate of students was 98%.

Results: The mean BMI of group A was lower as compared to group B, but was statistically insignificant. Academic performance and positive emotions of students taking breakfast were significantly higher ($P<0.001$) compared to students skipping breakfast. Moreover, negative emotions in subjects taking breakfast were significantly less ($P<0.001$) than student taking breakfast infrequently or skipping it.

Conclusion: The academic performance as well as subjective wellbeing of adolescents may be enhanced and improved by early recognition and correction of their meal habits. There is a need to encourage adolescents to take breakfast on regular basis during the period of rapid development of brain and body to avoid health issues in future.

Key Words: *Breakfast, adolescent, academic performance, cognition*

Introduction: Breakfast is considered to be the most significant meal of the day, as it gives nourishment and energy especially in young age. It may be related with a number of advantages like good performance in class, decent behaviour and positive attitude (Liu, Hwang & Dickerman2013). Consumption of quality breakfast is also associated with constructive outcomes, the healthy status of body weight and lifestyle-related factors. Moreover it also affects the learning ability of adolescents regarding performance in their academics, and cognitive activities (Adolphus, Lawton, & Dye, 2013).

Childhood and young age is a critical time in which best nutritional support and healthy lifestyle patterns are needed. The habit of taking breakfast in routine may have longterm beneficial effects on health as well as mood and emotions (Huang, Wahlqvist, Lee, & Chiang, 2018). Irregular consumption of breakfast is related with misbehaviours, like poor attitude with teachers and colleagues and bad habits like smoking. An inverse relationship was observed between frequency of taking breakfast and mental health condition by a study. It was found that students taking breakfast infrequently are depressed and may be slow in mental activities compared to students taking regular breakfast (Cartwright, Wardle & Steggles 2003).

Adolescence is associated with increased level of hormones, rapid body growth and psychological changes (Christie & Journal 2005). Studies have demonstrated that consumption of breakfast is related to better brain function and cognitive presentation (Pivik, Tennal &Chapman 2012, Hoyland & Dye 2009). Additionally, it was reported that breakfast may be associated with school or college activities like regular attendance, respectable behaviour in class, attainment of more success and affection with institute (Grantham-McGregor, 2005).

Researchers demonstrated that breakfast intake affects particular components of cognitive function, like the level of memory and attention in class room(Nabb, 2006). It is reported that quality of breakfast may be related to volumes of white and grey matter of brain as well as with intelligence quotient (IQ)(Taki et al., 2010). Breakfast also helps to maintain the level of blood glucose which may affect efficient cognitive processing pertaining to neuro-hormonal perturbations(Widenhorn-Müller, Hille & Klenk 2008).

1. *Department of Basic Medical Sciences, Princess Noura Bint Abdul Rahman University, Riyadh, KSA*
2. *Department of Nuclear Medicine, King Fahad Medical city, Riyadh, KSA*
3. *Academic Initiatives Directorate, Imam Abdulrahman Bin Faisal University, Damam, KSA*
4. *Department of Medical Education, University of Lahore, Pak*
    Correspondence:
    Dr. Amrah Javaid
    dramrahjavaid80@gmail.com

In view of important associations between breakfast intake and academic performance, a cross-sectional survey was designed to find out the significance of regular or irregular breakfast eating habit and cognition performance in adolescent Saudi Arabian medical students.

Research question: Are there any effects of regular or irregular breakfast eating habits on cognitive performance and emotional status of adolescent medical students?

Aim: To find out the effects of regular or irregular breakfast eating habits on cognitive performance and emotional status of adolescent Saudi Arabian medical students.

Methods: This cross-sectional study was conducted on 90 female medical students of Princess Nourah bint Abdul Rahman Women University, Riyadh. The students were divided into two groups A and B. Group A included 60 students who took breakfast on the day of study and goup B included 30 students who did not take breakfast on study day. Students were tested using Test Performance Assessment Quiz to test their level of cognition. A proforma based on positive or negative emotions of student was filled by each student. Informed consent of students was taken. The response rate of students was 98%.

The study was approved by Institutional Review Board and Ethical Committee.

Measures: The height, weight and hip measurements of all students were measured and BMI was calculated.

Breakfast routines: Reports on student's breakfast consumption routine, time, quantity and regularity were assessed by using performa (Annexure 1)

Cognition: Test Performance Assessment Quiz to test the cognition level of student was based on ten questions related to their subject in a calm and quiet classroom during college timings (Annexure 2 and 3).

Statistical methods: Data was entered and analyzed by SPSS 20. Variables were expressed as mean, standard deviation (SD), and percentages. Correlation between variables was calculated using Spearman's Coefficient Correlation. $P<0.05$ was taken as significant.

Results: Mean age of group A and group B was 18.9 and 18.8 year respectively. BMI of group A was lower as compared to group B but this shows no significant difference. The percentage of students taking breakfast sometimes was 22.2%, mostly 27.7% and always 15.5% while 1.11% never took breakfast in group A. The percentage of students never skipping breakfast was zero%, sometimes 13.3%, mostly 13.3% and always 6.6%. Overall 65.4% students took breakfast regularly while among group B, 33.2% did so. Academic performance of group A was significantly higher ($P<0.001$) compared to academic performance of group B. Positive emotion of group A was

significantly more ($P<0.001$) compared to group B; On the other hand, negative emotions in group A were significantly less ($P<0.001$) than group B (Table & Figure).

Discussion: Our study reports that breakfast consumption is associated with increased intellectual ability, attention and academic presentation. Children and adolescents who take breakfast infrequently are undernourished. They exhibit

Table 1: Demographic characteristics of adolescents with habits of usage of breakfast

Variables	Consumption of breakfast study day (group A (n=60)	Noconsumption of breakfast study day (group B) (n=30)
Mean age (Year)	18.90±0.09	18.85±1.1
BMI (Kg/m2)	18.84±1.86	22.11±2.7
Consumption of breakfast in routine (% age)	Never 1.11 Sometimes 22.2 Often 27.7 Almost always 15.5	Never 00 Sometimes 13.3 Often 13.3 Almost always 6.6
Academic performance (Score)	91.76±11.61	51.0±17.14**
Emotional status (+ve)	30.90±5.12	08.30±5.21**
Emotional status (-ve)	07.04±5.06	25.0±3.84**

decreased attendance, and less attention in the class, as well as they face more health related problems in comparison with children and adolescents who take breakfast frequently (Taha, 2017).

According to our study, the BMI of students taking breakfast regularly or frequently was less compared to students who usually skip breakfast. A number of studies have documented that skipping breakfast on a regular basis may be related to increased body mass index (BMI) (Song, Chun & Obayashi, 2005). It has been demonstrated that this is most probably due to muddled eating among adolescent girls associated with modern life style (Becker, 2004). Result of a study suggests that the association among skipping of breakfast, eating pathology, and increased BMI may be relatively complex. However, it may be possible that eating pathology mediates the link between skipping breakfast and obesity (Becker, 2004). We also observed in this study that most of the Saudi students used to take breakfast frequently. It has been reported that the habit

Figure 1: Comparison of negative emotional status in students who skip breakfast with the students who take breakfast frequently.
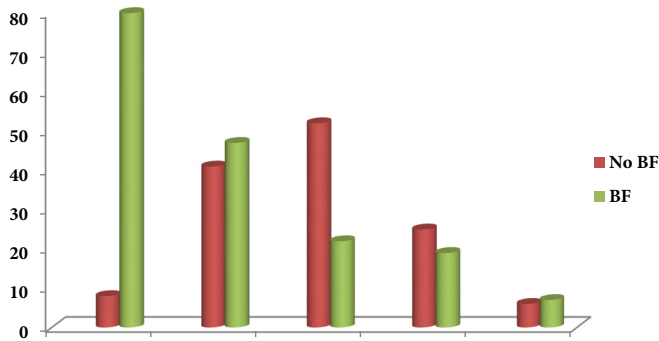
of eating breakfast either occasionally or infrequently was related with decreased functioning of brain and poor quality of life (Chen, Sekine, Hamanishi, Yamagami, & Kagamimori, 2005). An irregular meal pattern with skipping of breakfast is indirectly linked with serious health issues (Niemeier, 2006). During the period of adolescence, the developmental changes related with psychological, physical and social patterns are different from other phases of life (Onyiriuka, Umoru, 2013). Healthy eating behaviour including regular breakfast in the period of adolescence is a basic requirement for psychosocial development, physical growth and cognitive activities, and it may also prevent diet-related diseases in later ages (French, Lin, Nutrition, & 2003).

Our data observed high scores on academic performance tests in students, who frequently consume breakfast as compared to students who take breakfast infrequently. Our study is in consensus with other studies which demonstrated a dose-response effect between the frequent use of breakfast and good academic performance among adolescents (Nutrition 2007). Better cognitive activities and intellectual performances also depend on good quality of diet, intake of vitamins and minerals, along with regular exercise (Adolphus et al., 2013) On the other hand children who take breakfast infrequently are usually less active and have a poor level of cardio-respiratory fitness (Hallström, Labayen and Ruiz, 2013). According to a study, one of the significance of breakfast is to restore the low level of blood glucose (the energy source of brain) after long period of over night fasting, in addition to its beneficial effect on cognitive activities and academic performance(Mahoney, Taylor & Kanarek, 2005).

There is a direct relationship between behaviour, cognitive activities and academic performance. An increase in mental concentration after taking breakfast, in comparison to non-consumption of breakfast, may be a mirror of increased attention during academic lessons. In the same way, changes in cognitive activity may also affect the academic performance in a cumulative style. The usefulness of taking breakfast on

cognitive performance is usually short term. With regular consumption of breakfast, these temporary changes in cognitive function during class lessons may consequently translate into enhancement of the ability to remember class lessons.

Our study observed that adolescents who take breakfast frequently have less negative emotions than those who take breakfast infrequently. A study demonstrated that skipping of breakfast and risk of depression are related with decreased calorie intake (Hall, Tejada-Tayabas, & Monárrez-Espino, 2017). Another study stated that there are two physiological changes observed in case of skipping breakfast. One is 50-400% increase level of brain-derived neurotrophic factor engaged with emotional and cognitive functions with fasting, which may lead to negative emotions especially depression (Plasticity, 2017). Another factor is rise in level of hormone Ghrelin, in fasting condition which is related with mood swings (Spencer & Xu, 2012). Studies based on taking breakfast and mental health reported an inverse relationship between the frequency of taking breakfast and status of mental health. It has been demonstrated that students taking infrequent breakfast have poor mental health and develop negative emotions including anxiety and psychosocial poor function .

Limitations of study: The scores of the students can be affected by student's own academic performance across the year, also in comparison with their scores in other subjects regardless of their taking breakfast on that day. Study did not take the information on the quantity and type of food taken in breakfast and did not include male students.

Conclusion: Our study confirmed positive association between frequency of breakfast intake, academic performance and emotional status of a group of Saudi Medical students. However, there is a need for increased awareness among students and parents regarding the effects of taking breakfast on academic performance and emotional status in both female and male adolescent

References: Adolphus, K., Lawton, C. L., & Dye, L. (2013). The effects of breakfast on behavior and academic performance in children and adolescents. Frontiers in Human Neuroscience, 7.

Becker, A. E. (2004). Television, Disordered Eating, and Young Women in Fiji: Negotiating Body Image and Identity during Rapid Social Change. Culture, Medicine and Psychiatry, 28(4), 533–559.

Cartwright, M., Wardle, J., Steggles, N., Psychology, A. S., & 2003, undefined. (n.d.). Stress and dietary practices in adolescents. Psycnet.apa.org.

Chen, X., Sekine, M., Hamanishi, S., Yamagami, T., & Kagamimori, S. (2005). Associations of lifestyle factors with

quality of life (QOL) in Japanese children: a 3-year follow-up of the Toyama Birth Cohort Study. Child: Care, Health and Development, 31(4), 433–439.

Christie, D., Journal, R. V.-B. B. M., & 2005, undefined. (n.d.). ABC of adolescence: Adolescent development. Ncbi.nlm.nih. gov.

French, S., Lin, B., Nutrition, J. G.-J. of the A. of, & 2003, undefined. (n.d.). National trends in soft drink consumption among children and adolescents age 6 to 17 years: prevalence, amounts, and sources, 1977/1978 to 1994/1998. Jandonline. org.

Grantham-McGregor, S. (2005). Can the Provision of Breakfast Benefit School Performance? Food and Nutrition Bulletin, 26(2_suppl2), S144–S158.

Hall, L., Tejada-Tayabas, L. M., & Monárrez-Espino, J. (2017). Breakfast Skipping, Anxiety, Exercise, and Soda Consumption are Associated with Diet Quality in Mexican College Students. Ecology of Food and Nutrition, 56(3), 218–237.

Hallström, L., Labayen, I., Ruiz, J., E. P.-P. health, & 2013, undefined. (n.d.). Breakfast consumption and CVD risk factors in European adolescents: the HELENA (Healthy Lifestyle in Europe by Nutrition in Adolescence) Study. Cambridge.org.

Hoyland, A., Dye, L., reviews, C. L.-N. research, & 2009, undefined. (n.d.). A systematic review of the effect of breakfast on the cognitive performance of children and adolescents. Cambridge.org.

Huang, L.-Y., Wahlqvist, M. L., Lee, M.-S., & Chiang, P.-H. (2018). Dietary quality linkage to overall competence at school and emotional disturbance in representative Taiwanese young adolescents: dependence on gender, parental characteristics and personal behaviors. Nutrition Journal, 17(1), 29.

Liu, J., Hwang, W., Dickerman, B., development, C. C.-E. human, & 2013, undefined. (n.d.). Regular breakfast consumption is associated with increased IQ in kindergarten children. Elsevier.

Mahoney, C., Taylor, H., Kanarek, R., behavior, P. S.-P. &, & 2005, undefined. (n.d.). Effect of breakfast composition on cognitive processes in elementary school children. Elsevier.

Nabb, S., behavior, D. B.-P. &, & 2006, undefined. (n.d.). The influence on cognition of the interaction between the macro-nutrient content of breakfast and glucose tolerance. Elsevier.

Niemeier, H., … H. R.-J. of A., & 2006, undefined. (n.d.). Fast food consumption and breakfast skipping: predictors of weight gain from adolescence to adulthood in a nationally representative sample. Jahonline.org.

Nutrition, L. L.-P. health, & 2007, undefined. (n.d.). Is breakfast consumption related to mental distress and academic performance in adolescents? Cambridge.org.

Onyiriuka, A., Umoru, D., of, A. I.-S. A. J., & 2013, undefined. (n.d.). Weight status and eating habits of adolescent Nigerian urban secondary school girls. Scielo.org.za.

Pivik, R., Tennal, K., Chapman, S., Behavior, Y. G.-P. &, & 2012, undefined. (n.d.). Eating breakfast enhances the efficiency of neural networks engaged during mental arithmetic in school-aged children. Elsevier.

Plasticity, C. P.-N., & 2017, undefined. (n.d.). Brain-derived neurotrophic factor, depression, and physical activity: making the neuroplastic connection. Hindawi.com.

Song, W., Chun, O., Obayashi, S., S. C.-J. of the A., & 2005, undefined. (n.d.). Is consumption of breakfast associated with body mass index in US adults? Jandonline.org.

Spencer, S., Xu, L.,M. C.-B., & 2012, undefined. (n.d.). Ghrelin regulates the hypothalamic-pituitary-adrenal axis and restricts anxiety after acute stress.

Taha, Z., Exercise, A. R.-A. J. of N. and, & 2017, undefined. (n.d.). The Effect of Breakfast on Academic Performance among High School Students in Abu Dhabi. Knepublishing. com.

Taki, Y., Hashizume, H., Sassa, Y., Takeuchi, H., Asano, M., Asano, K., & Kawashima, R. (2010). Breakfast Staple Types Affect Brain Gray Matter Volume and Cognitive Function in Healthy Children. PLoS ONE, 5(12), e15213.

Thompson-McCormick, J.,J. T.-A. P. journal of, & 2010, undefined. (n.d.). Breakfast skipping as a risk correlate of overweight and obesity in school-going ethnic Fijian adolescent girls. Ncbi.nlm.nih.gov.

Widenhorn-Müller, K., Hille, K., Klenk, J., Pediatrics, U. W.-, & 2008, undefined. (n.d.). Influence of having breakfast on cognitive performance and mood in 13-to 20-year-old high school students: results of a crossover trial. Am Acad Pediatrics.

ORIGNAL ARTICLE

Challenges of faculty development in private medical colleges

Qundeel Zahra[1,4], Usman Mahboob[2], Fatima Aslam[3]

ABSTRACT

Background: Faculty development is the basic pillar in success of building and dynamic functioning of a medical college, aiming to produce pre-eminent medical graduates and to provide most advanced and state-of-the- art health care facilities. It is designed to equip and educate medical teachers about their roles and responsibilities.

The challenges faced by the private medical colleges are lack of awareness about the subject, meagerness of human and financial resources. There is also resistance to change and aversion to acceptance of the innovations and strategies that must be used in teaching of medical graduates.

Aim: The aim of our research project was to explore the challenges faced by the private medical colleges in their faculty development programs.

Methods: We included in our study medical educationists who are responsible for or concerned with the faculty development programs in private sector. Telephonic interviews were organized and recorded for an average of 15 to 20 minutes. Thematic analysis was done on the transcript of the interviews.

Results: From these interviews seven main themes were identified. Most of the respondents put emphasis on lack of human and financial resources, resistance from senior faculty members and top management, working methodology, lack of encouragement, appreciation and incentives, majority of faculty member's lack in foreign exposure and experience.

Conclusion: Faculty and administration of the private medical colleges should understand the importance of faculty development and the role of independent and fully equipped department of medical education. Owners of private medical colleges should be encouraged towards investing in this specialty as this will further improve the quality and standard of their institution. Also, the regulatory bodies should play their role in implementing and conducting faculty development programs.

Key words: *faculty development, private medical colleges, challenges, medical graduates, human and financial resources.*

Introduction: "There is no such thing as curriculum development, only staff development" as quoted by Prof. Ronald in 6th Asia-Pacific Medical Education Conference held in Singapore

For any organization to successfully conduct outcome based educational activity, faculty development is the most important key to success. As faculty members directly influence the teaching and learning of medical graduates and play a vital role in curriculum planning and assessment so faculty development is important for both personal and professional growth of the faculty members(Baker et al., 2017). It is a process that ensures the systematic improvement of skills including leadership, interpersonal relationship, patient doctor relationship, communication skills and skills obligatory to be involved in academic (Al-Eraky, Donkers,

Wajid, & Van Merrienboer, 2015), literary activities leading to professional success and personal development (Sorinola, Thistlethwaite, Davies, & Peile, 2017). The advancements in medical field, increasing demands from health care providers and everyday challenges faced by medical practitioners makes it imperative to establish FDP at organizational level (Yvonne Steinert et al., 2016).

They should devise their strategies for initiating and constantly evaluating these programs, the instructional methodologies, leadership skills, research activities, personal competence enhancement, improvement of interpersonal and communication skills and last but not the least, the organizational development itself (Y Steinert, Naismith, & Mann, 2012).

For the attainment of well-established FDP Boyce describes a framework for a faculty development program that includes support for faculty improvement in assessment of teaching (Lancaster, Stein, MacLean, Van Amburgh, & Persky, 2014). This process requires managerial support, infrastructure, human resource, economic issues well addressed, most importantly the faculty involvement are the basis which lead to a successful FDP (Leslie, Baker, Egan-Lee, Esdaile, & Reeves, 2013). This should be evaluated and assessed on regular intervals by regulating bodies and stakeholders

1. *Department of Ophthalmology, Superior University, Pak*
2. *Institute of Health Professions Education and Research, Khyber Medical University, Pak*
3. *Behavioral Sciences & Psychiatry, Pak*
4. *Department of Medical Education, University of Lahore, Pak*
    Correspondence:
    Dr. Qundeel Zahra
    drqundeelzahra@gmail.com

involved in the successful execution of these programs. All these activities and programs are important in relation to improvement of the knowledge, skills and attitude of faculty (Baker et al., 2017).

The benefits of establishing FDP is to upskill the faculty to coach medical graduates with mastery as a researcher, an educator and a competent clinician (Lee, Dong, Yeo, Gwee, & Samarasekera, 2018).

These programs should meet the needs and requirements of faculty development and should be planned in coherence with the other activities of the faculty (Anwar & Humayun, 2015).

Role of private medical colleges:

There is an emerging trend of private medical (Lee et al., 2018; Goswami & Sahai, 2015) colleges seen in Pakistan in the recent past years. Only in Punjab, thirty-two (32) private sector medical colleges that are recognized by the Pakistan Medical and Dental Council (PMDC) came into existence in recent years. Many criticize this trend and ask about the infrastructure, faculty competency and their role in providing health facilities (Biggs, 2013), but it is the need of the hour as the number of doctors required for the enormous and growing population of our country is increasing.

Pakistan is not meeting the standard of WHO recommended doctor to patient ratio that is; 2.5 per 1000 ("WHO | Density of physicians, 2018).

According to PMDC total registered medical practitioners basic and specialists (till 28th Feb 2018) are 232986. which in physician density ratio terms is 0.978 according to PM&DC (PM&DC,2014)

To reach this standard, private medical college's role comes in to play, because it is very difficult to meet the recommended criteria of WHO only by medical graduates from government institutions (Choudhury, 2016).

There is an ongoing debate that the overall standard of the medical graduates is falling (Akhtar, 2018), as private medical colleges are concerned with their profits and not with the quality of medical graduates. There are many different reasons for which this perception has been made some of which includes:

1. There is no proper design and implementation of faculty development program at organizational level.
2. Lack of human resource.
3. Multiples roles of faculty members with no defined job description.
4. Lack of finances for conducting workshops and seminars, sabbaticals, scholarships and study grants, integrated programs.
5. Most of faculty members are personally motivated for self-

improvement but they are not supported by the organization.
6. Resistance from senior faculty members.
7. Lack of rewards and respect, job instability, no timely promotions and no opportunities for self-improvement are provided by the organization.

There are many challenges faced by private medical colleges, in order to achieve the standards in faculty development. To find out these challenges the following question must be answered;

What are the challenges in faculty development in private medical colleges?

Methods: An interpretivist qualitative research approach was chosen and data analysis was done from the informed data collection.

Five professionals were randomly included in this study who were holding master's degree or doing PhD in medical education, who are actively involved in the faculty development and have the experience of teaching in private medical colleges. They were contacted via emails and were sent the questionnaire and formal appointments were taken on phone calls for the telephonic interviews (Rahman, 2015). On the given date and time, they were called for the telephonic interviews. All respondents were informed that these phone calls will be recorded.

All interviews lasted for an average of 15 to 20 minutes. After recording all the calls, the data was transcribed from each recorded phone call.

After transcription the data was coded and themes were identified out of the (qualitatively analyzed) coded data. These themes were identified by comparing the transcribed data of each respondent. Major common themes were then identified for further discussion.

Ethical approval was taken from ethical review board of UOL on a formal ethical form provided by UOL.

Results: A total of 07 codes were generated from the interviews. The codes were categorized under seven themes as shown in table 1. Most of the participants pointed towards resistance from the senior faculty members and members from basic medical science departments, as they are not ready/willing to accept the change and also they are of the point of view that no innovation or change is present in the strategies put forward in current medical education syllabi.

They also put emphasis on the lack of finance and human resource. This is one of the biggest challenges which would not let change flourish as to bring any change workshops, seminars and other ways of teaching have to be conducted which is not possible without human and financial resource. If faculty members who are already performing their duties as subject specialists in any department, are not encouraged and

Table 1: Themes And Representative Quotes

Themes	Representative Quotes
Resistant attitude towards the change	"Seniors are resistant to change, to innovation, they think they know everything, seniors in basic sciences, no participation, not accepting, no flexibility, leadership participation of faculty" (participant 2)
Financial and time constraints for an additional work	"overburdened, time is a big constraint, own initiative or volunteer work, not get any relaxation from the primary duty, additional burden, Voluntary work & extra effort, finances, enough resources to arrange these workshops, work for profit, resources, faculty knows but they are so busy like that a feedback form and you are not getting it back, do not have fulltime medical educationist, top management "
Lack of encouragement and team work	"Majority of the younger lot is very much interested in getting more & more information not encouraged, no incentive, Interpersonal relationship in the depts., not get any positive response reward or encouragement from the senior faculty, no team work"
Optimistic approach and ray of hope	", technique and new practices of M.E, passage of time things are getting better, in private sector there is flexibility people are ready to contribute even if they are supposed to work at home (office related) they are ready to do it. In Pakistan experience is good encouraging"
Working methodology for the development of the subject	"more format more scientific way, new techniques should be in cooperated, require formal training, Higher authority could be activated, take senior management on board, be very subtle, involve stake holders, gradual change, start a grass root level"
Lack of Incentives and appreciations from top management	"top management has to play an encouraging role, appreciation, recognition of volunteer work, relaxation and motivation of the faculty"
Foreign training	"Majority have no foreign training"

not given incentives then they would not be able to perform these additional duties and the faculty will be overburdened by additional responsibilities.

Participants also pointed towards the importance of interpersonal relationship amongst the departments, faculty members and organization. All the stake holders including faculty, students, administration and top management must be brought under one umbrella to achieve the goals.

Some respondents also suggested that this discipline should be made compulsory by PMDC for the Doctors involved in the teaching of medical students and the medical institutions must identify the subject as a separate department and develop the awareness that medical education departments are the back bone of a medical institution.

Discussion: The overall rise of professionalism, individual awareness and expectations of health facility delivery standards has now made it a compulsion for every medical college to upgrade its faculty and resources to meet the rising standards, as medical colleges are directly linked with the health care provision and improvement of the overall health standards of the society.

In Pakistan or any other country for that matter, the government run medical colleges are not always sufficient to meet the ever-increasing needs of the health care of community, therefore private sector medical colleges have to play a very important role to meet those demands.

Government run medical colleges and privately run medical colleges both have the responsibility to train medical graduates according to international standards (Meundi, 2016). In order to do that many regulatory bodies are monitoring these medical colleges and ensuring the quality standards (Potts, 2016).

Like any other domain of a medical college, one of the most important is their faculty. A competent faculty is the backbone of any educational institution and medical colleges are no exceptions. With continuous innovations in health care facilities and rising standards in healthcare profession the medical faculty needs to improve themselves to meet these standards, But for every individual to cope up with these standards the institution has to play its role which in our opinion is the leading role (Yvonne Steinert et al., 2016).

In this current study we tried to explore the difficulties private medical colleges are facing in order to develop a competent faculty.

Not surprisingly most of the participants are pointing towards the issue of non-acceptance of the tools and techniques of today's modern world from the existing senior faculty members for the teaching and training of the medical graduates. Every new system faces this difficulty, as most of the times new system has yet to prove itself. Decades old practices

and techniques cannot be overturned in days. For these new systems to replace old ones a lot of effort will have to be made, like convincing the old faculty about the innovations in medical education and newer techniques by engaging them in the workshops and seminars as demonstrated by Lee et al., (2018) in their study.

Majority of the research participants talked about a very important issue regarding the lack of available resources both in terms of finances and human resource (which too requires financing). In their viewpoint as the private medical colleges are being run for profit like a business (Davey, Davey, Srivastava, & Sharma, 2014; Singh & Devi, 2018). the owners are not yet convinced that investing in the department of medical education is lucrative. They are reluctant in spending the required amount of resources in this domain. Most of the times they assign other departments and other faculty members to do this work with no additional financial or resource incentive.

After interviewing the participants another very disappointing fact surfaced which is the non-appreciation of the subject. A medical professional dedicating his/her entire working hours to medical education is not considered to be very important so most of the work in this domain is being done on part time basis alongside with their basic and primary specialty like surgery, medicine or any other. This demotivating attitude is also one of the major reasons due to which these medical colleges are unable to focus on faculty development related activities.

Other than all the major challenges which we discussed above, the issue of awareness about this domain is also lacking. Majority of faculty members are unaware of what the subject really is and what level of impact it can create on the standards of medical education (Khalid, 2013)

Conclusion: In this era of rapidly evolving medical education strategies and technology we must upgrade our medical colleges and healthcare facilities to keep pace with this rapid global change. All the stake holders must be educated that medical education (faculty development) should be prioritized like any other major specialty. No proper job description and overburdening the faculty by giving them additional responsibilities; without incentives creates resistance towards the subject because no one would like to be overburdened, without encouragement and incentives. They must establish proper medical education departments and hire faculty developing experts and put emphasis on all other aspects of medical education.

This research will create awareness amongst private medical colleges and its management about the faculty development programs; and by establishing well equipped medical

education department and hiring highly trained faculty, the private organizations can also produce competent and professional medical graduates

Limitations: We selected private sector not the government sector and a smaller number of participants only because we had logistic issues as it is a self-funded research so to approach all the senior faculty members to take appointments and interview them was not possible due to time constraints. Also, to use other research methods like focused group we needed human and financial resources.

References:

Akhtar, M. (2018). Medical Education in Pakistan We need competent full - time well paid accountable medical teachers devoted to academics. Medical Education in Pakistan, 1–4.

Al-Eraky, M. M., Donkers, J., Wajid, G., & Van Merrienboer, J. J. G. (2015). Faculty development for learning and teaching of medical professionalism. Medical Teacher, 37(sup1), S40–S46. https://doi.org/10.3109/0142159X.2015.1006604

Anwar, M. I., & Humayun, A. (2015). Faculty development---Looking through different lenses. Pak Armed Forces Med J, 65(1), 110–117.

Baker, L., Leslie, K., Panisko, D., Walsh, A., Wong, A., Stubbs, B., & Mylopoulos, M. (2017). Exploring Faculty Developers' Experiences to Inform Our Understanding of Competence in Faculty Development. Academic Medicine, 93(2), 265–273. https://doi.org/10.1097/ACM.0000000000001821

Biggs, J. S. G. (2013). The Social Responsibilities of Medical Colleges in Pakistan. Journal of the College of Physicians and Surgeons Pakistan, 23(12), 2–4.

Choudhury, P. K. (2016). Role of Private Sector in Medical Education and Human Resource Development for Health in India. Institute for Studies in Industrial Development, 51(3), 1–6.

Davey, S., Davey, A., Srivastava, A., & Sharma, P. (2014). Privatization of medical education in India: A health system dilemma. International Journal of Medicine and Public Health, 4(1), 17. https://doi.org/10.4103/2230-8598.127116

Goswami, S., & Sahai, M. (2015). Problems and Challenges in Medical Education in India. European Journal of Contemporary Education, 11(11), 31–37. https://doi.org/10.13187/ejced.2015.11.31

Khalid, T. (2013). Faculty perceptions about roles and functions of a department of medical education. J Coll Physicians Surg Pak, 23(1), 1–2. https://doi.org/01.2013/JCPSP.5761

Lancaster, J. W., Stein, S. M., MacLean, L. G., Van Amburgh, J., & Persky, A. M. (2014). Faculty development program models to advance teaching and learning within health science programs. American Journal of Pharmaceutical Education,

78(5), 1–9. https://doi.org/10.5688/ajpe78599

Lee, S. S., Dong, C., Yeo, S. P., Gwee, M. C., & Samarasekera, D. D. (2018). Impact of faculty development programs for positive behavioural changes among teachers: a case study. Korean Journal of Medical Education, 30(1), 11–22. https://doi.org/10.3946/kjme.2018.77

Leslie, K., Baker, L., Egan-Lee, E., Esdaile, M., & Reeves, S. (2013). Advancing faculty development in medical education: A systematic review. Academic Medicine, 88(7), 1038–1045. https://doi.org/10.1097/ACM.0b013e318294fd29

Meundi, A. D. (2016). Role of Medical colleges in Tuberculosis control, 4(2), 26–28. Retrieved from file:///C:/Users/Harshvardhan/Downloads/ROLE OF MEDICAL COLLEGES IN TUBERCULOSIS CONTROL.pdf

PM&DC. (n.d.). Pakistan Medical & Dental Council > Statistics. Retrieved May 24, 2018, from http://www.pmdc.org.pk/Statistics/tabid/103/Default.aspx

Potts, J. R. (2016). Assessment of Competence: The Accreditation Council for Graduate Medical Education/Residency Review Committee Perspective. Surgical Clinics of North America, 96(1), 15–24. https://doi.org/10.1016/j.suc.2015.08.008

Rahman, R. (2015). Comparison of telephone and in-person interviews. Interdisciplinary Undergraduate Research Journal, 1(1), 10–13. Retrieved from http://knowledge.e.southern.edu/jiur/

Singh, M., & Devi, R. (2018). We need to discuss India ' s reliance on private medical colleges Quality of medical education and private medical colleges in. BMJ, 2–3.

Sorinola, O. O., Thistlethwaite, J., Davies, D., & Peile, E. (2017). Realist evaluation of faculty development for medical educators: What works for whom and why in the long-term. Medical Teacher, 39(4), 422–429. https://doi.org/10.1080/0142159X.2017.1293238

Steinert, Y., Mann, K., Centeno, A., Dolmans, D., Spencer, J., Gelula, M., & Prideaux, D. (2016). A systematic review of faculty development initiatives designed to improve teaching effectiveness in medical education: 10 year update BEME Guide No. 8. Medical Teacher, 38(8), 796–786. https://doi.org/10.1080/01421590600902976

Steinert, Y., Naismith, L., & Mann, K. (2012). Faculty development initiatives designed to promote leadership in medical education. Medical Teacher, 34(6), 483–503. https://doi.org/10.3109/0142159X.2012.680937

WHO | Density of physicians (total number per 1000 population, latest available year). (2018). WHO. Retrieved from http://www.who.int/gho/health_workforce/physicians_density/en/

ORIGNAL ARTICLE
Analyzing the teaching skills of interns to assess the quality of teaching.

Kinza Aslam[1,4],Rehan Ahmed Khan[2], Mohammad Annas Aslam[3]

ABSTRACT

Background: In Pakistan, interns are often involved in teaching tasks. Interns are placed at the lowest level in the hierarchy of teachers and are often hired with little or no teaching experience and usually with no formal teacher training during the course of their undergraduate program.

Aim: To analyze the level of teaching skills of interns, so appropriate measures can be taken if required to improve the standard of teaching.

Methods: This cross-sectional study was conducted at University College of Dentistry, The University of Lahore from April to June 2017.The Medical Education Teaching Readiness Questionnaire (METRQ) was used to assess how different experiences contributed to respondent's knowledge, skills and attitudes of medical teaching. Fifty first year interns in dentistry were requested to fill out the questionnaire and the results were analyzed statistically using SPSS 21.

Results: Forty (80%) interns thought the acquisition of basic teaching skills such as planning 'what to teach' was extremely important, however they were not prepared well enough to teach. Observing their teachers was extremely helpful for skill development for 38 (76%) respondents while receiving feedback on their own teaching was helpful for only 1 (2%) respondent. Most of the parameters judged as teaching characteristics such as enthusiasm, motivation, competence etc. took a dip at the time of graduation. The same characteristics showed markedly better values after gaining some teaching experience during internship.

Conclusion: METRQ can act as an important tool to conduct needs assessment for designing teacher-training programs or for assessing the current status of individuals who are teaching in the health professions. Teacher training programs are the need of the hour so teaching quality and in turn the quality of education can be improved.

Keywords: *Aptitude, Cross sectional studies, Needs Assessment, Teacher training.*

Introduction: "Great teaching is defined as that which leads to improved student progress"(Coe, Aloisi, Higgins, & Major, 2014). It is important to understand that teaching is a dynamic and complex task, one that requires a blend of hard work, grip over core knowledge and enthusiasm if knowledge and skills are to be imparted effectively (Vaughn, Ph, & Baker, 2001). As the focus of teaching has now shifted from teacher centered to student-centered activities, the conventional method of on the job teacher training seems inadequate and outdated. In addition to being a lecturer which was considered to be a teacher's primary role, 11 other roles have been identified for a teacher (Harden & Crosby, 2000). In order to achieve

an optimal learning environment, multiples roles must be fulfilled simultaneously.

This study aims to analyze how various experiences in medical education contributed to the knowledge and skill development of interns as teachers.

Methods: This cross-sectional study was conducted at University College of Dentistry, The University of Lahore from April till June 2017. The sampling was purposive and 50 interns were requested to fill out the Medical Education Teaching Readiness Questionnaire – The Intern's Perspective (Henry, Haworth, & Hering, 2006).Sample size was calculated using OpenEpi with a 95% confidence interval. Only first year interns were included in the study and preference was given to interns from different medical colleges.

METRQ is a pre-validated and reliable questionnaire and it aims to analyze how experiences during medical college shaped the teaching skills of interns. It consists of 9 sections with a variety of response formats such as multiple-choice questions; fill in the blanks, 7-point likert scale options and yes/no responses. The questionnaire was used after taking proper permission from the authors.

Response rate was 100% as each intern was contacted

1. *Department of Medical Education, University College of Medicine and Dentistry, The University of Lahore, Lahore, Pak*
2. *IIMC-T , Riphah International University, Visiting Professor Health Professions Education, UOL, Pak*
3. *Department of Periodontology, University College of Medicine and Dentistry, The University of Lahore, Pak*
4. *Department of Medical Education, University of Lahore, Pak*
    Correspondence:
    Dr. Kinza Aslam
    kinzaslam8@gmail.com

individually and was requested to fill out the questionnaire under supervision in order to avoid any confusion or misunderstanding on part of the intern regarding any term or question in the questionnaire.

Data was analyzed using IBM SPSS Version 21 and all quantitative variables were presented as frequencies and percentages.

Results:

Demographics: Interns from four clinical disciplines; Operative, Surgery, Prosthodontics and Orthodontics, were part of the research. (Figure 1)

Figure 1: Distribution of interns according to clinical disciplines
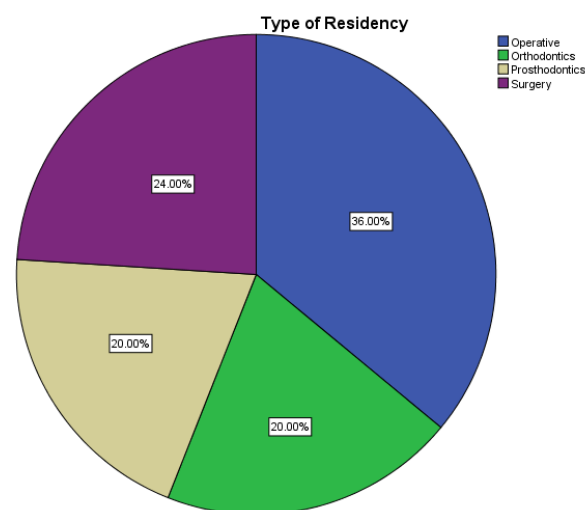
Results of different components of the questionnaire are reported as follows:

Teaching Functions: The first three items of the questionnaire were essentially warm up questions and they dealt with teaching functions. Item 1 and 2 were intended to prompt residents to recall current teaching activities through a general estimation of their experiences. Forty eight percent (24) of the respondents said that they spent around 11- 20 hours teaching students in the past month and most of them were either responsible for teaching students' clinical skills and procedures or were involved in teaching students how to conduct patient evaluation. In response to Item 3, that inquired "when learning to teach occurred the most," 54% (27) respondents said, 'during internship'.

Attitudes about Teaching: As an attitudinal measure, respondents were prompted to indicate their level of agreement about having a particular skill. 80% (40) indicated that planning what to teach was extremely important and so was evaluating students. 74% percent (37) and 72% percent (36) respondents respectively said the presentation of material and provision of feedback was also very important.

Teaching Preparedness: Item 4B prompted recall on the level of preparedness to teach in certain areas and indicated the respondent's view of his/her abilities to teach at that time. In simple terms, this item aimed to assess teacher preparedness: whether the interns felt prepared to teach or not. Majority of

Table 1: Activities that were helpful in promoting the intern's development as a teacher

	Not at all Helpful	Slightly Helpful	Moderately Helpful	Extremely Helpful	Not done
Received instruction about how to teach		5(10%)	13(26%)	24(48%)	8(16%)
Read printed materials about how to teach	1(2%)	10(20%)	15(30%)	16(32%)	8(16%)
Reviewed the material to be taught		2(4%)	11(22%)	35(70%)	2(4%)
Observed my teachers teach		2(4%)	8(16%)	38(76%)	2(4%)
Taught with students s		2(4%)	17(34%)	28(56%)	3(6%)
Reflected on teaching experiences		4(8%)	13(26%)	30(60%)	3(6%)
Received feedback on teaching skills	10(20%)	6(12%)	6(12%)	1(2%)	27 (54%)
Was encouraged to assume teaching role	1(2%)	7(14%)	12(24%)	28(56%)	2(4%)
Had teaching responsibilities		2(4%)	15(30%)	27(54%)	6(12%)

Table 2: How respondents viewed themselves as teachers in the first year of medical school?

Bored	Enthusiastic	Neutral	20 (40%)	23 (46%)	7 (14%)
Competent	Ineffective	Neutral	21 (42%)	18 (36%)	11 (22%)
Confident	Fearful	Neutral	21 (42%)	21 (42%)	8 (16%)
Disorganized	Organized	Neutral	17 (34%)	28 (56%)	5 (10%)
Frustrated	Fulfilled	Neutral	16 (32%)	25 (50%)	9 (18%)
Motivated	Unmotivated	Neutral	29 (58%)	12 (24%)	9 (18%)
Had teaching responsibilities		2(4%)	15(30%)	27(54%)	6(12%)

Table 3: How respondents viewed themselves at teachers at graduation?

Bored	Enthusiastic	Neutral	25 (50%)	9 (18%)	16 (32%)
Competent	Ineffective	Neutral	6 (12%)	26 (52%)	18 (36%)
Confident	Fearful	Neutral	26 (52%)	11 (22%)	10 (20%)
Disorganized	Organized	Neutral	33 (66%)	6 (12%)	11 (22%)
Frustrated	Fulfilled	Neutral	24 (48%)	6 (12%)	20 (40%)
Motivated	Unmotivated	Neutral	17 (34%)	27 (54%)	6 (12%)

Table 4: How respondents viewed themselves at teachers during internship?

Bored	Enthusiastic	Neutral	6 (12%)	39 (78%)	5 (10%)
Competent	Ineffective	Neutral	43 (86%)	5 (10%)	2 (4%)
Confident	Fearful	Neutral	37 (74%)	5 (10%)	8 (16%)
Disorganized	Organized	Neutral	2 (4%)	47 (94%)	1 (2%)
Frustrated	Fulfilled	Neutral	6 (12%)	35 (70%)	9 (18%)
Motivated	Unmotivated	Neutral	34 (68%)	19 (20%)	6 (12%)

the interns indicated that they were not prepared when it came to planning what to teach (88%), presenting relevant material (86%) and evaluating students (78%). In addition, only 52% were moderately prepared to provide students feedback.

Ways of Learning: Item 5 provided a list of activities that aimed to prompt the respondents to rate each item for its helpfulness. It aimed to assess which teaching or learning activities were helpful in their development as teachers (Table 1). Thirty-Eight (76%) respondents found observing their teachers to be extremely helpful for the development of their own teaching skills and 35 (70%) said the same for reviewing the material to be taught.

Teaching Instruction: Item 6 asked the students to recall any practice teaching they engaged in during their senior year.

Eighteen percent of the respondents had absolutely no teaching experience while only 26% said they engaged in more than 10 teaching sessions in senior year. Majority of the respondents co-facilitated between 1 and 6 times. While half of the respondents wanted greater teaching opportunities, the other half was satisfied with the same or even fewer teaching opportunities.

Out of all respondents who had engaged in teaching activities during senior year, only 54% received feedback, which only a small proportion found to be helpful

Item 7 was applicable to respondents who had a formal program on learning-to-teach. All respondents skipped this section, as not even a single intern had been a part of any formal program, which taught them how to teach.

Teaching Characteristics: Item 8 was based on teaching characteristics of the respondents and they were expected to mark on a continuum where they viewed themselves as teachers. Most of the parameters judged as teaching characteristics such as enthusiasm, motivation, competence etc. took a dip at the time of graduation. The same characteristics showed markedly better values after gaining some teaching experience during internship (Tables 2, 3 and 4).

Discussion: The responses to initial warm up questions legitimize that all interns who were included in this research were actively involved in teaching activities and hence gave appropriate and significant responses. As indicated by the respondents themselves, as interns, they understood the importance of basic activities such as planning what to teach, presenting material, provision of feedback and evaluation of students. However, they were not adequately prepared for it. At best, most of them were only moderately prepared to provide students feedback. The section on teaching instruction also showed lack of interest on part of the interns as only half of them indicated they would've liked to have more teaching opportunities in their senior year. This lack of interest was further indicated in "Teaching Characteristics" section as most of the respondents viewed themselves as bored, ineffective, disorganized, frustrated and un-motivated at the time of graduation.

Enthusiasm, effectiveness, fulfillment and motivation drastically improved amidst internship and this change may be attributed to experience gained while working as an intern. However, for a profession as serious as health, the classroom should not be utilized as a platform for acquiring or developing basic and essential teaching skills.

Half of the respondents stated that the feedback that was provided to them on their teaching during senior year was not helpful. The absence of effective feedback shows the presence of a vicious cycle – one that that the interns were a part of before they graduated due to lack of trained teachers and the same one that future students will become a part of when they undergo teaching by the same interns who themselves have little or not teaching experience. Experience plays a vital role in developing a teacher's attitude and it is a teacher's attitude that can greatly affect a student's attitude towards learning (Bhargaya & Dr. Pathy, 2014). It is unfair to expose the students to interns who have limited teaching experience themselves due to the absence of formal teacher training programs at the undergraduate level as confirmed by 0% response rate to Item 7. This can have far reaching consequences because quality education can never be achieved without quality teaching as teaching does not refer to a simple transfer of knowledge rather it refers to a process which entails the facilitation of learning (Chaudhary, Kumar Mahato, Bhatia, & Chaudhary, 2015).

The process of developing certain skill sets in teachers can be expedited by means of teacher training programs hence it is important to devise specialized faculty development programs, which are targeted towards teacher training. In an attempt to improve the quality of teaching and in turn the quality of education, Teacher Education Programs such as Transition to teaching program can be studied and something along similar lines can be developed for teachers involved in health care professions (Program, Teacher, & Maker, 2015).

Just as teaching is a complex task, learning how to teach is not easy either. The knowledge and skill sets required for effective teaching cannot be acquired by reading or studying alone. These skill sets are developed as a result of proper mentoring, good opportunities to practice along with proper support and feedback (Foley, Amber Benedict, Lynn Holdheide Mary Brownell, 2016).

In order to train individuals, it is important to assess their aptitude and assign them roles accordingly. METRQ can act as an important tool to conduct needs assessment for designing

teacher-training programs or for assessing the current status of individuals who are teaching in the health professions. The "Ways of Learning" section can provide insight into which activities help individuals the most in developing their skills as a teacher hence it can be used to profile interns and assign them to be a part of relevant teacher training program.

In order to set apart effective teachers from non-effective ones, it is important to subject them to periodic reviews as well in addition to the initial profiling (Harden & Crosby, 2000). The purpose of this review should be to provide the interns with constructive feedback in order to enhance their skill and help them develop expertise.

In this time and age of information overload and rapidly changing curricula, it is important to train teachers who can take on the challenges being faced by medical education and can contribute towards producing health care professionals who are active contributing members of the society. The only way to achieve this is to design proper faculty development programs and education preparation programs. WFME guidelines for quality assurance also highlight teacher training, development, support and appraisal as a basic standard that must be fulfilled by a medical college (B 5.2.5).

References:

1. Bhargaya, A., & Dr. PATHY, M. (2014). ATTITUDE OF STUDENT TEACHERS, (July), 27–36.

2. Chaudhary, N., Kumar Mahato, S., Bhatia, B., & Chaudhary, S. (2015). Micro Teaching Skills for Health Professionals.

3. Coe, R., Aloisi, C., Higgins, S., & Major, L. E. (2014). What makes great teaching ? Review of the underpinning research, (October).

4. Foley, Amber Benedict, Lynn Holdheide Mary Brownell, A. M. (2016). Learning to Teach Practice-Based Preparation in Teacher Education, (June).

5. Harden, R. M., & Crosby, J. O. Y. (2000). AMEE Guide No 20 : The good teacher is more than a lecturer. The twelve roles of the teacher, 22(4).

6. Henry, B., Haworth, J., & Hering, P. (n.d.). Perceptions of Medical School Graduates and Students Regarding Their Academic Preparation to Teach. Postgrad Med J. 2006 Sep;82(972).

7. Program, T., Teacher, T., & Maker, W. D. (2015). Teacher Candidate / Internship Handbook, (December).

8. Vaughn, L., Ph, D., & Baker, R. (2001). Teaching in the medical setting : balancing teaching styles , learning styles and teaching methods, 610–612.

ORIGNAL ARTICLE

Patient safety: What are the differences in faculty and medical students' awareness about it?

Ayesha Ayub[1,4], Rehan Ahmed Khan[2], Attia Bari[3]

ABSTRACT

Background: Patient safety is the part and parcel of effective health care system around the world. It is mandatory for all health care professionals to avoid mistakes and errors while dealing with the patients. Training medical professionals about safety principles is considered equally important at postgraduate and undergraduate levels.

Aim: To explore the difference in awareness level of medical students and faculty about patient safety.

Methods: This qualitative descriptive exploratory research was conducted at Islamic International medical college Rawalpindi, Pakistan. Faculty having clinical as well as teaching experience and students of final year MBBS were included. WHO curriculum guideline on patient safety for undergraduate medical schools was used to prepare questions. Interviews of faculty and focus groups of students were used to collect data. Atlas-ti was used in the process of thematic analysis.

Results: Initially 43 open codes for faculty and 35 for students were made. They were reduced to 6 main themes with several subthemes by axial and selective coding. The themes were 1) Importance of patient safety education, 2) Importance of strong student-patient relationship, 3) Code of conduct, 4) Students and effective team, 5) Students part in management plans 6) Medical errors. The main difference was found in theme 1, where faculty was well aware with the definition and concept of patient safety, but students were not clear about medical errors. Another difference was found in theme 4, where students were only considering doctors as a part of effective team while the faculty had clear knowledge about role of other health professionals in this matter.

Conclusion: Students should be given adequate knowledge about definition, causes and remedy of medical errors, patient safety education and formation of an effective team through inclusion of these concepts in the curriculum. Faculty training is also needed along with curriculum reforms as the faculty is aware of these concepts but not transferring these effectively to students.

Key words: *Patient safety, Medical students, Faculty.*

Introduction: Patient safety is the part and parcel of effective health care system around the world. It is mandatory for all health care professionals to avoid mistakes and errors while dealing with the patients (Nie et al., 2011). Training medical professionals about safety principles is considered equally important at postgraduate and undergraduate levels (Steven, Wenger, Boshuizen, Scherpbier, & Dornan, 2014). WHO has published curriculum guidelines on patient safety for undergraduate as well as postgraduate levels to provide a basic framework addressing patient safety issue (Walton et al., 2010). Medical students at undergraduate level have limited knowledge about patient safety issue especially in developing countries like Pakistan (Leung & Patil, 2010; Louis et al., 2016). This raises a question on the educational system, training methodology and curriculum design of health system especially at undergraduate level (Reznek et al.,

2010). Faculty is one of the important factors in this regard as they directly influence the students' perceptions, knowledge and skills (Nabilou, Feizi, & Seyedin, 2015; Nie et al., 2011). This study was planned to explore the difference in awareness level of undergraduate medical students and faculty and to identify the gaps present in our settings.

Methodology: The study was conducted at Islamic International medical college, Rawalpindi from December 2017 to June 2017. This was a descriptive qualitative exploratory research. Approval for the study was taken from the University of Lahore and Islamic International Medical College. Purposive sampling was done. Twelve faculty members with clinical as well as teaching experience and 18 students of final year MBBS were selected. Interviews of faculty and focus group discussions of students were used to collect data. Data was in the form of audio recordings and codes were given to participants before recordings to maintain confidentiality. All the participants signed a consent form before data collection and codes were mentioned on those forms. The questions to be asked were prepared with the help of WHO's curriculum guideline on patient safety for undergraduate medical schools. Prior to being used, these questions were sent to 5 medical educationists for validation. The interviews were transcribed and sent back to faculty members for confirmation and were used after their approval for analysis. Three focus groups with 6 students each were conducted and a transcript of the audio recording was sent back to one member of each group for member checking.

1. *Women medical officer, Govt. City Dispensary, Ali town, Faisalabad, Pak.*
2. *Professor of Surgery, Islamic International Medical College, Riphah University, Pak*
3. *Associate professor of Pediatrics, The Children's Hospital, Lahore, Pak*
4. *Department of Medical Education, University of Lahore, Pak*
   Correspondence:
   Dr. Ayesha Ayub
   ayeshaayub89@live.com

Table 1: Similarities in students and faculty awareness about students' roles with respect to patient safety

S. no:	Theme:	Similarities in students' and Faculty:
1	Patient safety in education	a) Importance of PS and its significance b) Standards and protocols essential for establishing a patient safe environment c) Need to train students in workplace-based environment for better understanding of complexity of system
2	Student patient relationship.	a) Important b) Teaching students professionalism and proper approach towards the patients c) Importance of proper informed consent and respect for the privacy of patients essential for training
3	Code of conduct	a) Students should know how to dress, behave and deal while interacting with patients
4	Team work	a) Importance of an effective team in patient management and patient safety
5	Student's role in Patient management	a) Involvement of students in patient management
6	Medical errors	Need to establish an error reporting system

Table 2: Differences in students and faculty awareness about students' roles with respect to patient safety

S. no:	Theme:	Similarities in students' and Faculty:
1	Patient safety in education	a) Faculty clearly know the definition and components of PS b) Students were including all the complications, mistakes and patient factors like compliance in patient safety
2	Student patient relationship.	No difference
3	Code of conduct	No difference
4	Team work	a) Faculty had a clear concept about effective role of other health professionals in team b) Students were only considered doctors in a patient management team
5	Student's role in Patient management	No difference.
6	Medical errors	a) The students were not clear about the definition of medical errors b) Faculty had clear concepts

After data collection and transcription of recordings, thematic analysis was done using Atlas ti software.

Results: Initially open coding generated 43 codes for faculty and 35 for students. Then through axial and selective coding these were condensed to 6 themes with various subthemes. The detail is given in figure 1(Hierarchy of themes and sub-themes).

Theme 1: Importance of patient safety education for students: Both the faculty members and students knew the importance of teaching patient safety principles to the students, as narrated by one of the faculty member "Patient safety is very important as soon as someone steps into the hospital". Similarly, both faculty and students advocated the need of development of standards and protocols for students so that a safe patient environment should be established in clinical settings. Emphasis was also being given to train and teach students in work-place based environment to let the students understand the complexity of systems, as one of the students said "Basic issue is of protocols. They are not being followed so we should be taught in the environment where we have to work in future and all the protocols should be followed." The main difference was in the definition and components of patient safety. On one hand where faculty was fully aware of patient safety, students were confused about its' definition and the headings which come under the umbrella of patient safety.

Theme 2: Importance of strong student-patient relationship: The participants consider it very important for students to

know the value of patient. They students should be well aware of a strong patient-student relationship. They must know how to deal with the patient, how to take consent and to maintain the privacy of the patient as one of the faculty member said "The first thing is to know the importance of patient". Further elaborated by a student "I think by developing professional attitude in students' things can be made better"

Theme 3: Proper code of conduct for students:

Faculty and students both said that the students must have a very professional attitude in wards, they should behave appropriately and must not show carelessness or casual behavior. They must know their responsibility and must know their limits. As narrated by Students "I think that we should follow all the protocols, all the rules before we go and handle the patient. This includes lab coats and hygienic measures"

Theme 4: Students and importance of an effective team in patient management:

Both the students and faculty members were well aware of the importance of an effective team in patient management and in maintaining patient safe environment. "They must know the importance of team in patient management because a doctor never works alone."

As the faculty was clear about the role of all the health professionals in patients' management, students only consider doctors when they talked about role of team in patient care. Although they were aware that patient management is a team work and is important to know its working, they were not aware of the position, roles and importance of other health professionals like nurses and paramedics in a health care team providing patient care.

Theme 5: Students part in patient management:

The students and faculty members were of strong view that undergraduate students should be involved in patient management to develop adequate skills and attitude in them for safe patient environment. The students must master the skill of history taking and examination and at the completion of their studies they should be able to do them even without supervision. Faculty B: "They can take history and do examinations at final year level after taking consent of the patient and with senior's permission. but they should not start telling the patients about treatment plans or prescribe any drugs as their knowledge is limited. They on one hand are unable to satisfy the patients and on the other hand may become a cause of conflict or error due to limited knowledge and will make things more complicated."

Theme 6: Students and medical errors:

The difference in faculty and students was in the basic definition of medical errors. Where faculty was fully aware of medical errors, their types and their remedies, students don't know the actual boundaries of medical errors. Students were including complications and patient factors along with medical negligence into this. As one student said "I am not really sure what medical errors are".

Regarding reporting both groups favor the need to develop a reporting system and suitable environment to encourage medical error reporting, as said by a faculty member "These students are very intelligent, and if they point an error they can politely tell the person in private and in a respectable manner that this is not the proper way and we should develop an environment for this. The students should play a role in this matter and must not sit quietly and development of this culture is very important" Table 1 shows similarities while table 2 shows differences between faculty and students' awareness about students' roles related to patient safety

Discussion: The main purpose of health care delivery system is to provide safe, timely and high-quality services to the patients. Despite progress in patient safety, the complexity of health care system has resulted in an increase in the risk of accidental harm to patients. Medical students also have limited knowledge about patient safety issues (Nie et al., 2011). This study systematically analyzed the awareness of undergraduate medical students and faculty about patient safety and has important findings regarding similarities and differences.

In our study both the faculty members and students highlighted the importance of teaching patient safety principles to the students. Moreover, emphasis was also given to teaching of patient safety issues to students in a workplace based environment. Our results are similar to a survey by Claireshowingthat most medical students feel that they are exposed to PS in their medical school, but less than half said that they had an exposure to quality improvement. The author concluded that by looking on student attitudes and learning preferences it is important to consider Patient Safety and quality improvement when implementing a curriculum change (Teigland et al., 2013. Literature search demonstrated that majority of medical students recognized the importance of PS education, and most of them supported inclusion of PS education in the medical curriculum (Leung & Patil, 2010; Mayer, Klamen, Gunderson, & Barach, 2009; Shah, Jawaid, Shah, & Ali, 2015).

In our study the main difference was in the definition and components of patient safety. Our faculty was fully aware of patient safety but the students didn't know the domains which come under the umbrella of PS. Similarly a noticeable findings in a study published in PLOS one demonstrated inadequate knowledge of medical students on patient safety (Nabilou et al., 2015).A systematic review published in BMC Med Educ

revealed that there are barriers which should be overcome by adding PS to an already busy curriculum and can be done by integrating PS in the existing curriculum in every taught domain which does not necessarily need new blocks of time (Nie et al., 2011).

Our results are similar to Claire and colleagues study in which students were in favor of discussing real life mistakes. In his study students rated the most helpful methods of learning about patient safety were real-life examples of mistakes presented by a teaching physician (Teigland et al., 2013). It is very important to engage undergraduate medical students in these important topics of patient safety and preferably these topics should be taught in a real environment if possible.

Ethics and professionalism were previously penetrated passively to the medical students through "the hidden curriculum" leaving a lot of behaviors to chance. However, over time, it has been clearly defined that there is need to formally educate medical students in their concepts of ethics and professionalism (Mahajan, Aruldhas, Sharma, Badyal, & Singh, 2016). In our study both faculty and students said that the students must have a very professional attitude in wards, they should behave appropriately.

Team working is an integral part of health care system. Our results showed that both faculty and students knew the importance of teamwork in patient care but the difference was in the deficient knowledge of inclusion of other health professionals as a part of team by the students. Contradicting to our results a mixed method research published in Adv Med Educ Practice showed quite interesting results in which students in focus group discussion narrated that "It's like an ideal world, having everyone work together, and it just got better and better… working as a team, being able to ask questions…. It's made it such a fun experience"(Morphet et al., 2014).

In our study, we found difference in faculty and student'sperspectives in basic definition of medical errors asthe faculty was fully aware of all domains medical errors but students showed gaps in knowledgeabout medical errors. Similar results are shown in another study in which students admitted their deficient knowledge about medical errors or appropriate action to take when error occurred but they showed positive attitude towards acquiring knowledge to improve patient care in their future practice (Batalden, Leach, Swing, Dreyfus, & Dreyfus, 2002). Both groups favor the need to develop a reporting system and suitable environment to encourage medical error reporting.

The students and faculty members strongly believed that undergraduate students should be involved in patient management to develop adequate skills and attitude in them

for safe patient environment. A study by Seiden concluded that medical students are often ignored as important participants to ensure patient safety and they could be an untapped resource for preventing medical errors. It's the need of time that medical students should be taught and trained to recognize errors and to speak up when errors happen (Seiden, Galvan, & Lamm, 2006).

Conclusion: Students have inadequate knowledge about medical errors, patient safety education and an effective team. For this, faculty training is needed along with curriculum reforms.

Strengths and Limitations:

The strength is that we analyzed the perceptions of Patient safety among both faculty and students. The limitation of our study is that we took sample from a single institute.

References:

Ahmad W, Krupat E, Asma Y, Fatima N-E-, Attique R, Mahmood U, et al. Attitudes of medical students in Lahore, Pakistan towards the doctor–patient relationship. PeerJ. 2015; 3:e1050. doi: 10.7717/peerj.

Blasiak RC, Stokes CL, Meyerhoff KL, Hines RE, Wilson LA, Viera AJ. A cross-sectional study of medical students' knowledge of patient safety and quality improvement. N C Med J. 2014;75(1):15–20.

Cant R, Morphet J, Hood K, Baulch J, Gilbee A, Sandry K. Teaching teamwork: an evaluation of an interprofessional training ward placement for health care students. Adv Med Educ Pract. 2014;5:197–204. Doi: 10.2147/AMEP.S61189

Leung GKK, Patil NG. Patient safety in the undergraduate curriculum : medical students' perception. 2010;16(2):101–5.

Louis MY, Hussain LR, Dhanraj DN, Khan BS, Jung SR, Quiles WR, et al. Improving Patient Safety Event Reporting Among Residents and Teaching Faculty. Ochsner J. 2016;16(1):73–80.

Mahajan R, Aruldhas BW, Sharma M, Badyal DK, Singh T. Professionalism and ethics: A proposed curriculum for undergraduates. Int J Appl basic Med Res. 2016; 6(3):157–63. doi: 27563578

Mayer D, Klamen DL, Gunderson A, Barach P. Designing a Patient Safety Undergraduate Medical Curriculum: The Telluride Interdisciplinary Roundtable Experience. Teach Learn Med. 2009;21(1):52–8. Doi:.org/10-1080/10401330802574090.

Nabilou B, Feizi A, Seyedin H. Patient Safety in Medical Education : Students' Perceptions , Knowledge and Attitudes. PLoS One. 2015;1–8. doi:0135610

Nie Y, Li L, Duan Y, Chen P, Barraclough BH, Zhang M, et al. Patient safety education for undergraduate medical students : a systematic review. BMC Med Educ. 2011; 11: 33. Doi. org/10.1186/1472-6920-11-33.

Quality Education and Safe Systems Training (QuESST)-Development and Assessment of a Comprehensive CrossDisciplinary Resident Quality and Patient Safety Curriculum. J Grad Med Educ. 2010; 2(2) 222-227. doi: 10.4300/JGME-D-10-00028.1

Roney L, Sumpio C, Beauvais A, O'Shea E. Describing clinical faculty experiences with patient safety and quality care in acute care settings: A mixed methods study. Nurse Educ Today. 2017;49: 45-50. Doi:10.1016/j.nedt.2016.11.014

Seiden SC, Galvan C, Lamm R. Role of medical students in preventing patient harm and enhancing patient safety. Qual Saf Heal Care. 2006;15(4):272–6. doi: 10.1136/qshc.2006.018044

Shah N, Jawaid M, Shah N, Ali SM. Patient safety : Perceptions of Medical Students of Dow Medical College , Karachi.JPMA. 2015; 65(12):1261–5.

Sipi Verma, Awasthi PC, Mehrotra S HS. Awareness of Patient Safety Isssues and Expectations Among Undergraduate Medical Students in a Government Medical College. IJSR. 2016;5(6):461–3.

Teigland CL, Blasiak RC, Wilson LA, Hines RE, Meyerhoff KL, Viera AJ. Patient safety and quality improvement education : a cross-sectional study of medical students ' preferences and attitudes. BMC Med Educ. 2013;13(16):2–7. Doi: 10.1186/1472-6920-13-16

ORIGNAL ARTICLE

Evaluation of mentoring skills by mentees using the mentoring competency assessment (MCA) instrument at an undergraduate medical school in Lahore

Fatima Zia Zaidi[1,4], Mohamed Al Eraky[2], Danish Islam[3]

ABSTRACT

Background: Mentoring, a committed relationship has established its significance in the field of undergraduate medical education. Mentors invest in their protégés' personal and professional development, beyond the realm of teaching. The mentors and the organization also gain a multitude of benefits. Formal mentoring is considered to have more advantages. Recruiting mentors should be thoughtful and mentors should be trained for their job. The assessment of mentor's competence remains a challenge and many instruments have been tried for this purpose. Evaluation can help identify areas for training. The Mentoring Competence Assessment inventory developed by Fleming et al. focused on measuring six main competencies of a mentor-mentee relationship. Since these competencies overlap with the objectives of more general mentoring programs, this tool can be adapted to measure outcomes.

Aim: To evaluate mentoring skills by mentees.

Methods: A cross sectional study was conducted at The University of Lahore. The Mentoring Competence Assessment instrument was used with appropriate modification. Volunteers filled in an online questionnaire. 129 students responded, out of which 97 completed responses were considered. Response scores were added to calculate score for each competency. Correlational analysis was performed for competence and seniority. Cross gender mentoring was also compared to same gender mentoring.

Results: The high scoring competencies in the order of ratings they attained are: maintaining effective communication, fostering independence, promoting professional development and aligning expectations, whereas assessing understanding and addressing diversity were rated at less than fifty percent, indicating areas for faculty development training. Almost 80% students rated high on how much they had benefitted from their mentor. They also felt their mentor helped them the most by motivating them, by being a good listener and by guiding them. Mentees believed their mentoring relationship was uncomfortable due to group mentoring, seniority bias, and lack of time. The mentor's gender had no significant effect on all the six competencies.

Conclusion: Mentoring is a mutually beneficial relationship and is most beneficial when started at an early stage. The mentoring program should be relevant to local perspectives and cultural issues. To prevent misunderstandings, mentors should acknowledge the differences of gender & cultural background. Mentors should be monetarily rewarded for their contribution to medical education. Educating & empowering students, along with faculty education regarding students' needs may improve mentoring.

Keywords: *Mentorship, Competence, Assessment, Undergraduate Medical Students*

Introduction: Mentoring has established its significance in education for decades. Teaching expertise is no longer synonymous with content expertise, although closely associated (Wilkerson & Irby, 1998). Srinivasan et al. have worked out a total of ten teaching competencies (6 core + 4 specialized) for medical educators drawing on ACGME framework. It also described mentorship as one of the four specialized teaching competencies (Srinivasan et al., 2011). The 12 roles of a medical teacher defined by Harden mention mentoring as one (Harden & Crosby, 2000).

Definition of Mentoring: Although all the teaching faculty is involved in advising students, but mentoring is not the same as advising. Mentoring is considered as contextual, and there is no distinct definition for it, but this definition by Johnson (2002), seems rational for exploring preliminary mentoring competence:

"Mentoring is a personal relationship in which a more experienced faculty member acts as a guide, role model, teacher, and sponsor of a less experienced graduate student. A mentor provides the protégé with knowledge, advice, challenge, counsel, and support in the protégé's pursuit of becoming an active member of a particular profession.

1.   *Department of Physiology, University College of Medicine & Dentistry, The University of Lahore, Lahore, Pak*
2.   *Academic Initiatives Directorate, Imam Abdulrahman Bin Faisal University, Damam, KSA*
3.   *Department of Physiology, University College of Medicine & Dentistry, The University of Lahore, Lahore, Pak*
4.   *Department of Medical Education, University of Lahore, Pak*
     Correspondence:
     Dr. Fatima Z Zaidi
     fatima_zz@hotmail.com

Mentorships are reciprocal and mutual by design, and the ultimate goal of the relationship is development of a strong professional identity and clear professional competence on the part of the protégé" (Johnson, 2002).

According to Levinson (Levinson DJ, Darrow CN, Klein EB, Levinson MA, 1978), the concept of mentorship has existed since Ancient Greece, and a chunk of the prior work in was in adult development and higher education (Sozio, Chan, & Beach, 2017).

Type of Mentoring: Mentoring is a multi-faceted process, ranging from informal to formal programs, where the relationship is arranged by the institute's committee and students are assigned to mentors. Most of the times, the mentors are chosen from the faculty and may typically be trained. Formal mentoring, in effect, is superior to informal mentoring. Among other benefits, it provides opportunity for students to find mentors earlier in medical school, and foster student-faculty contact (Mann, 1992). Studies have also shown that structured mentoring experiences increase student retention and degree completion (Crisp, Baker, Griffin, Lunsford, & Pifer, 2017).

Mentoring can be one-to-one, group or team mentoring. As the names suggest, one-to-one mentoring means one mentee for one mentor while group mentoring means multiple mentees assigned to a single mentor. Team mentoring is when multiple mentors are involved in mentoring a single student. Most of the formal programs at undergraduate medical colleges, practice group mentoring. This may be due to the mentor-mentee ratio or because it is known to be effective where collaborative advancement is desirable (Shamim, 2013).

Benefits of Mentoring: Jacobi (1991) declared five generally agreed functions of mentoring relationships: " 1) mentoring focuses on achievement or acquisition of knowledge; 2) consists of emotional and psychological support, direct assistance with career and professional development, and role modeling; 3) is reciprocal, where both mentor and mentee derive emotional or tangible benefits; 4) is personal in nature, involving direct interaction; and 5) emphasizes the mentor's greater experience, influence, and achievement within a particular organization" (Jacobi, 1991).

Mentorship should not be misinterpreted as reviewing the students' performance in an examination. It is more about a broader range of issues concerning the student (Harden & Crosby, 2000). While some students need a tangible instruction or task-oriented assistance, others may need help pronouncing their thoughts or clarifying a life purpose. Mentors invest in their protégés" personal and professional development, beyond teaching (Rose, Rukstalis, & Schuckit,

2005). One reported positive aspect for students is learning from faculty who have 'done it before' (Fornari et al., 2014). A good mentor early in the career can mean the difference between success and failure in any field (Lee, Dennis, & Campbell, 2007). It has been described as a fulfilling undergraduate medical experience. Somebody rightly said, "A lot of people have gone further than they thought they could, because someone else thought they could".

As Chickering and Reisser (1993) state in their identity formation model, the development of integrity is inchoate in young adults and will continue developing throughout their life (Chickering & Reisser, 1993). A mentor may influence them in appreciating whether the values they advocate align with the behaviors they exhibit. Mentor's own integrity is probably his or her students' most important inspiration to develop integrity (Ramirez, 2012). Honesty is a paramount for both the mentor and the protégée, as it vital for developing trust, which is ultimately an essential thread in binding the fabric of the relationship. (Ramirez, 2012)

To actively mentor students, faculty must value that role as both rewarding and rewarded (Mann, 1992). A genuine mentoring relationship is a reciprocal one, with the mentors gaining a multitude of possible benefits as well (Rose, 2003). They include personal satisfaction, career enhancement and feeling rejuvenated at work by the enthusiasm of their protégées (Rose et al., 2005). Student feedback can increase the self-confidence of mentors (Houghton, 2016). Mentoring programs can also strengthen the mentor's commitment to the medical school & professional recognition within the school. It can fortify his/her identity and create a greater sense of community (Fornari et al., 2014). Administration can be informed about existing hidden curriculum by mentoring (Rose et al., 2005). Organizations also benefit from cost savings by staff retention and satisfaction (Lafleur & White, 2010).

Who should Mentor: Although many studies have parroted the positive implications of mentoring, it still remains a challenge in undergraduate medical colleges. In Pakistan, only a few colleges offer a formal mentoring program, and those too are yet to be evaluated. Who should mentor? What should be the qualities of the mentor? Are there organizational policies that support the selection of competent, suitable mentors? Are there strategies for development of mentoring skills? How will the mentor be assessed? Is there periodic evaluation of mentors? Every step is a task on its own.

Some faculty members have natural attitude and mentoring skills. Others can acquire them through faculty development programs (Shamim, 2013). The spectrum of motivation has intrinsic motivation at one end and lack of motivation at

the other with extrinsic motivation in between. Intrinsically motivated people pursue an activity for their own interest and satisfaction. Indeed, if one volunteers, he/she is determined & more likely to put in effort. Whereas extrinsically motivated people pursue an activity to obtain a reward or to avoid a loss (Kusurkar, Ten Cate, Van Asperen, & Croiset, 2011). Reward may be appreciation, promotion points, monetary or time compensation.

Implementing an effective mentoring program requires thoughtful recruitment. Unenthusiastic or inappropriately selected mentors can have negative implications on the mentoring program (Shamim, 2013). It can be due to lack of perceived value in terms of compensation (Fornari et al., 2014).It can also be due to the fact that medical curricula are overcrowded and many faculty members are under constant time constraint (Frei, Stamm, & Buddeberg-Fischer, 2010). Time also seems to be an issue for students where mentoring activities must fit in with other tasks (Fornari et al., 2014). Mentoring requires time and institutes should support by providing time or financial resources (Lafleur & White, 2010).

Measuring Competence: Competence as a mentor encompasses several mentoring competencies. For mentoring to be fruitful to the mentee and mentor both, it is necessary that the competence of the mentor be assessed from time to time. There is limited information (only 100 google search results) about how to measure the competencies. Lack of attention to competence may stem from a "positivity bias" among administrators, who assume that all faculty can effectively mentor (Duck, 1994). Different competence assessment methods are used based on different theoretical frameworks. Johnson proposed a triangular competency framework, which holds that competence to mentor hinges on the presence of essential virtues, abilities, and micro-skills/competencies (Johnson, 2003). The faculty mentor has to skillfully integrate all three. Canadian Coalition For Global Health Research also uses the this triangular framework as a basis for mentoring competence (Plamondon, 2007).

Rose G L, at the University of Iowa, made a 34 question rating scale on qualities of an ideal mentor. This "Ideal Mentor Scale (IMS)" uses the work of Levinson (1978) (Levinson DJ, Darrow CN, Klein EB, Levinson MA, 1978) and Anderson & Shannon (1988) (Anderson & Shannon, 1988) as theoretical background. It identifies the roles of the mentor-protégée relationship in three broad areas: Integrity, Relationship and Guidance.

Nature's guide for mentors, a feature published in the journal Nature offered a table developed by using mentees' statements regarding mentors nominated by Nature's awards for creative science mentoring. It has ten activities/strategies adjacent to which a mentor can write his/her example of such. This is to aid mentors in self-reflection on where they stand and what can be improved. (Lee et al., 2007)

NHS Lancashire Trust's guide to Supporting Learner's & Promoting Best Practice gives Nursing & Midwifery Council's mentor self-assessment Performa with 26 reflective questions that fall under 8 major qualities of the mentor (NHS & Nursing & Midwifery Council, 2011).

The emerging leader mentor course describes five mentor approaches with ten mentorship skills. Growing as a mentor happens over time. The mentors can use these skills to self-reflect on their practice from time to time to grow (Emergence international Inc.

Students' perception of mentor skills, could be a way to identify the relationship between mentees progression and mentors' qualities (Nickitas, A, & Stephen, 2015).

Mentorship Effectiveness Scale (a 12 point rating scale) along with the mentor profile, were developed by the Ad Hoc Faculty Mentoring Committee at John Hopkins University School of Nursing (Berk, Berg, Mortimer, Walton-Moss, & Yeo, 2005).

A mixed methods approach collecting both quantitative and qualitative data from students and mentors is also proposed. It requires allocated institutional resources for data collection and analysis (Frei et al., 2010).

Fleming et al. developed the Mentoring Competence Assessment inventory that focused on measuring six main competencies of a mentor-mentee relationship, which were in line with the workshop Mentor training for Clinical and translational Researchers , used in previous studies performed by researchers from the University of Wisconsin (Pfund et al., 2013). These competencies are: maintaining effective communication, aligning expectations, assessing understanding, addressing diversity, fostering independence, and promoting professional development (Fleming et al., 2013). Since these competencies overlap with the objectives of more general mentoring programs, this tool can be considered for adaption to better assess outcomes.

Methodology: This was a cross sectional study at University College of Medicine & Dentistry at The University of Lahore. To measure the students' perceptions of their mentors' competence, we selected the Mentoring Competency Assessment inventory. This instrument comprises 26 Likert items and measures six competencies: maintaining effective communication (6 items), aligning expectations (5 items), assessing understanding (3 items), addressing diversity (2 items), fostering independence (5 items), and promoting professional development (5 items). It was used with a slight modification to include demographic information of both mentor and mentee, gender and seniority of the mentor etc.

Responses were collected on a 5 point rating scale (not 7), in which 1 = 'Not at all skilled', 3 = 'Moderately skilled', 5 = 'Extremely skilled', and N/A where a skill was not applicable. The final questionnaire had around 35 items & it was peer reviewed.

The mentoring program at UCMD caters to the students of the first three years (n=465). Volunteers from students filled out the questionnaire online. 129 students responded, out of which 97 completed responses were considered (32 partially completed responses were discarded).

To calculate scores, the response values were summed up and then score for each competency was calculated. Correlational analysis was performed for competence and seniority. Cross gender mentoring was also compared to same gender mentoring.

Ethics: Approval was taken from the Institutional Ethical Review Board. All participants were informed about the nature and purpose of the study, and that refusal to participate will not affect their progress in any form. A message on the cover page indicated that by completing the survey they were consenting to participate in the study. Anonymity and confidentiality in treatment of the information was ensured. Almost 86% students rated 3 to 5 (moderately to extremely effective) on how effective they perceived informal mentoring to be. The mentor's gender had no significant effect on all the six competencies. Female students rated the mentors higher on establishing a relationship based on trust (p value= 0.02), aligning his/her expectation with you

Figure 1: Overall Competency Scores
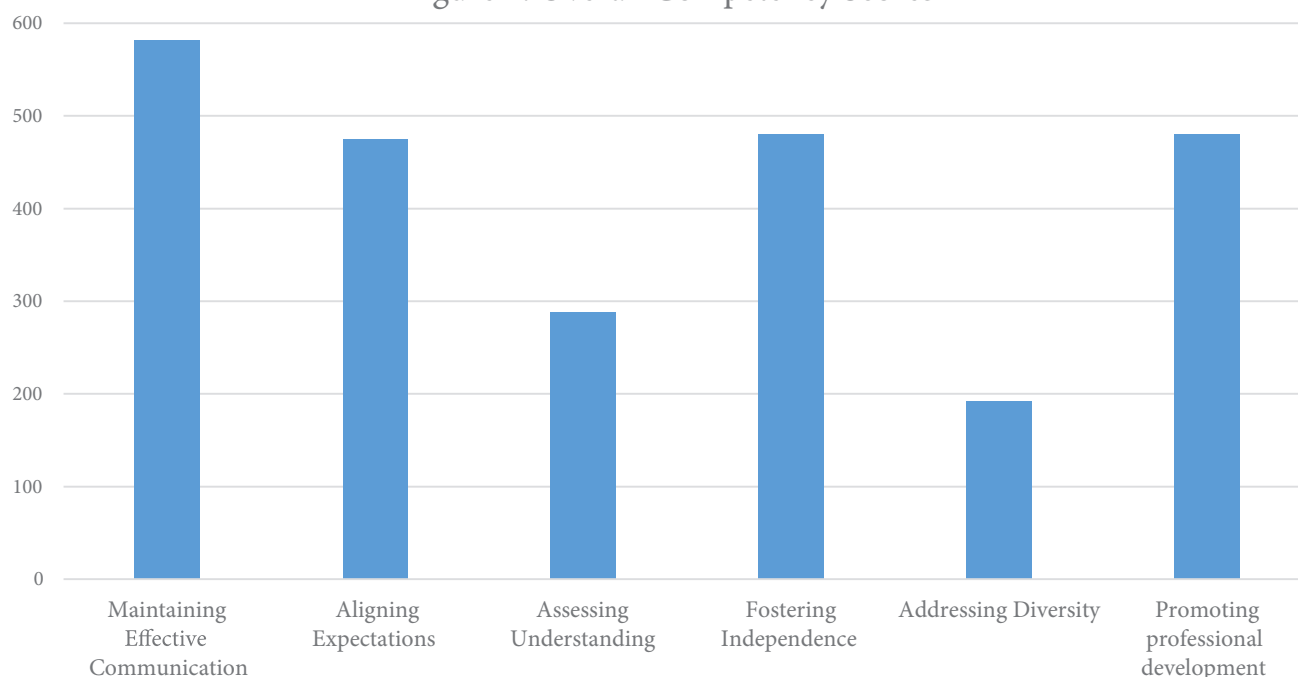
(p value= 0.04), considering how personal & professional differences impact expectations (p value= 0.02), accurately estimating your knowledge (p value= 0.01), working effectively with mentees from different backgrounds (p value= 0.04) and helping you acquire resources (p value= 0.02). Assistant professors were best at motivating students (p value=0.01) and providing constructive feedback (p value=0.05). Mentors from department of medical education were better at considering how personal & professional

differences impact expectations (p = 0.04).

Discussion: Customary mentorship in undergraduate medical education focuses on such items as personal and professional development, along with emotional support and encouragement (Rose et al., 2005). A systematic review of mentorship for medical students mentioned 16 papers that described structured mentorship programs (Buddeberg-Fischer & Herta, 2006). Another systematic review in PubMed identified 14 manuscripts that described themes in medical student mentoring programs, ranging from career counseling, professionalism, increasing interest in research,

Figure 2: The Six Mentor Competencies

Legend: 1 (Not Skilled) 2 3 (Moderately Skilled) 4 5 (Extrememly Skilled) N/A
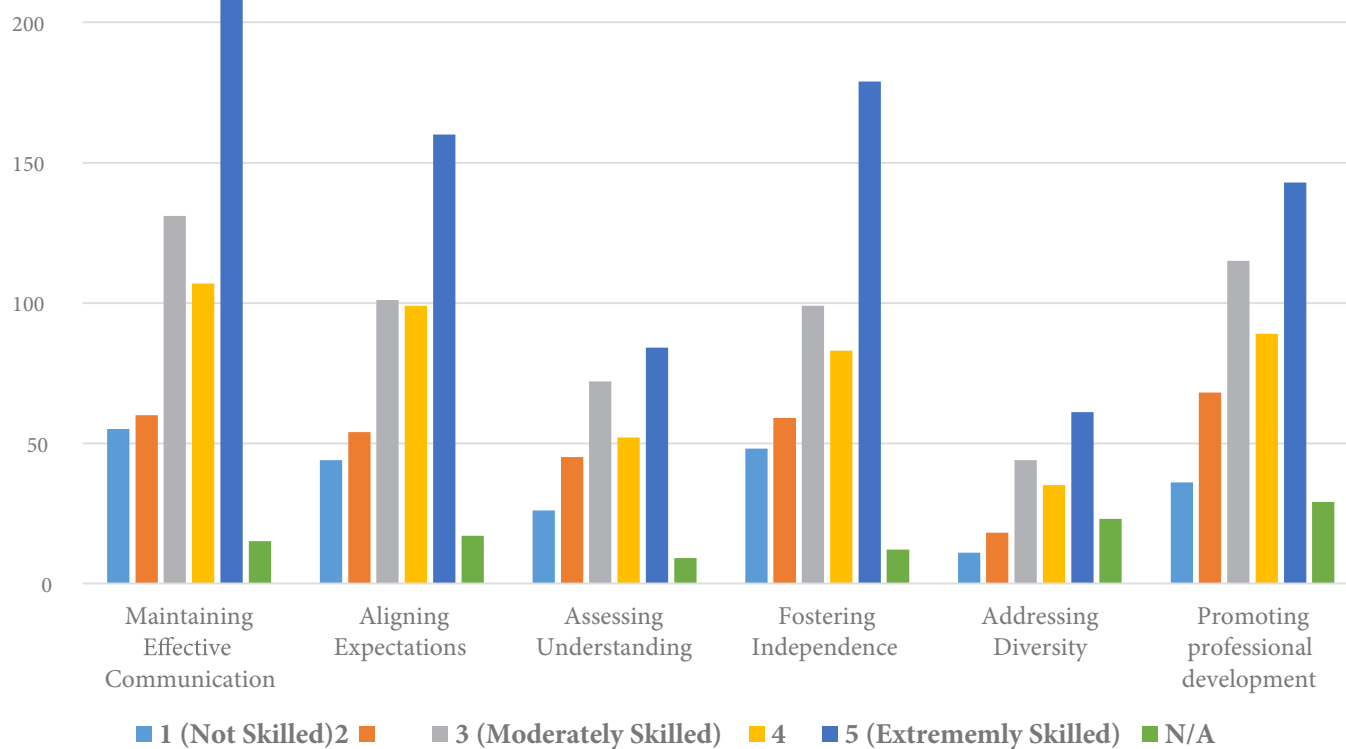
FIGURE 3: MY MENTOR HELPED ME THE MOST BY

Motivating me 31%
Guiding me 26%
Being a good listener 27%
Solving my problems 12%
Did not help me 3%
Other 1%

Figure 3

Nearly 80% students rated 3 to 5 (moderate to a great deal) on how much they have benefitted from their mentor.

They claimed their mentor had helped them most by motivating (31.25%), by being a good listener (27.08%), guiding (26.04%) solving problems (11.46%) and other (1%). 3.3% mentees alleged they have not benefitted from their mentor.

Figure 4

On what makes the mentoring relationship uncomfortable, the mentees responded as: Group mentoring (25%), seniority bias (19.57%), lack of time (18.48%), attitude of my mentor (9.78%), gender of mentor (1.09%), and 11.11% said lack of resources & materials for feedback. 14.98% claimed nothing made their relationship uncomfortable.

FIGURE 4: REASON FOR UNCOMFORTABLE MENTORING RELATIONSHIP

Gender of Mentor 1%
Seniority bias 20%
[CATEGORY NAME] [PERCENTAGE]
Lack of time 18%
Group Mentoring 25%
Other 26%
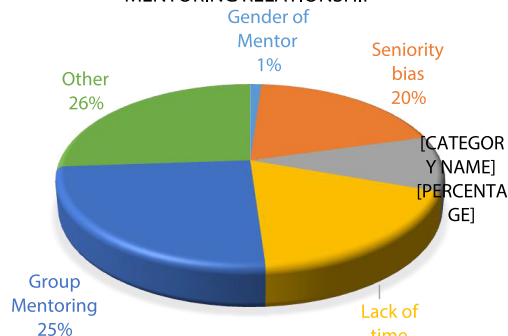
and supporting personal growth. (Frei et al., 2010).

Measuring mentorship is immature in undergraduate medical education, as mentorship takes place in variable contexts and the conceptualizations differ (Chen, Watson, & Hilton, 2016). The Mentoring Competence Assessment (MCA) emerges as a measure for efficacy of mentor training or for identifying areas needed for mentor training (Fleming et al., 2013). The perceptions of the students regarding the six mentor competencies, as depicted by our results, show high baseline values (Figure 1). The high scoring competencies in the order of ratings they attained are: maintaining effective communication, fostering independence, promoting professional development and aligning expectations, whereas assessing understanding and addressing diversity were rated at less than fifty percent, indicating areas for faculty development training (Figure 1 & 2). There remains no data in literature to support whether randomly assigned mentors or pre-thought assigned mentors best achieved successful mentoring relationships (Fornari et al., 2014).

In our survey, 25% students regarded group mentoring as the cause of their uncomfortable mentoring relationship (Figure 4). The impact of different mentee-mentor ratios on the relationship is unknown and may in part depend on the purpose and goals of the mentoring program as well as available resources (Fornari et al., 2014).

In most instances, the proportion of women and minorities among students is higher than it is among faculty. Women make up nearly half of the medical students (Lakoski & Lou Voytko, 2017) and they are more likely to become depressed than men over the first year of medical school (Parkerson, Broadhead, & Tse, 1990). In cross gender mentoring, stereotypical roles are assumed, defined by expectations of appropriate behavior for each gender. There are also differences in work styles, temperaments, capacity, energy and drive (Lakoski & Lou Voytko, 2017). Although some women students indicated they would prefer women mentors (Igartua, 1997), but in our survey, students were not uncomfortable with cross gender mentoring (Figure 4).

Seniority bias, reported by 19.57% students, pointed out a dire need to train our faculty for a friendlier attitude based on mutual respect (Figure 4). 86% students rating informal mentoring as effective means also shows their liking for mentor's friendly attitude. According to Chickering's seven vector model of identity development, undergraduate students, as young adults, are in the process of personality development and at this stage they can be easily honed into better professionals of the future (Chickering & Reisser, 1993). Assistant professors rated best on motivating students and providing constructive feedback, may be due to the fact that they also have more contact hours with the students in terms of teaching and assessment.

80% students rating high on benefitting from mentoring, is good news for the mentoring program, although areas for improvement always persist. The MCA can be administered from time to time for this purpose. The mentees feel they benefitted most by being motivated, guided, being listened to and by help in solving problems. Although the mentees who think they have not benefitted from their mentor are very less in number, yet it should be looked upon, as little to more, mentoring has something for everybody. It should also be explored and ensured that mentoring would not have any negative impact on the mentees.

Conclusion: Mentoring at an early stage is most beneficial and the mentoring pairs should meet regularly. It is a mutual & committed relationship. South Asia has a distinction from the West socio-culturally and this difference must be acknowledged while implementing mentoring programs in the region. Our programs should be in sync with local perspectives and cultural issues should be considered (Shamim, 2013). A student's gender and race can affect medical school experience. Therefore, to prevent misunderstandings, mentors can acknowledge differences and accept education from protégée's about their unique perspectives. Female mentors might be particularly important for female students, since they may provide a role model for balancing the demands of professional and personal life (Frei et al., 2010). Faculty needs and recognition for mentoring services are areas which require institutes' hindsight (Shamim, 2013). Mentoring must become a faculty priority & those who take up this duty should be rewarded for their contribution to medical education (Igartua, 1997). An evaluation of the individual successes of the participants as well as the cost-benefit analysis are also needed (Buddeberg-Fischer & Herta, 2006). Educating & empowering students, along with faculty education regarding students' needs may improve mentoring (Shamsunnisa, Khan, Rauf, Shaheen, & Waqar, 2014).

Our study helped in identifying potential areas for improvement in faculty training for mentorship.

Limitations: One limitation is that it is a single-institution study. The students of different cultural backgrounds were not considered for their specific needs. High ratings may be a ceiling effect. Most mentoring relationships only include a subset of possible functions, so the MCA may not be fully applicable as such, to assess mentor competence.

Way forward: The study can be conducted at other institutes with formal mentoring programs. The mentors can be asked the same questions simultaneously to see how the mentor's self-assessment of a competency differs with that of his/

her mentees'. Amendments can be made to the MCA based on our values and mentoring program goals. MCA ratings can be used for assessing & rewarding mentors. Further studies would aid to build on the framework of mentoring by assessing students' preferences, modifying our program accordingly and then evaluating the required competencies.

Appendix A & B: A: Questionnaire used

B: Individual scores of each competency

References: Anderson, E. M., & Shannon, A. L. (1988). Toward a Conceptualization of Mentoring. Journal of Teacher Education, 39(1), 38–42. https://doi.org/10.1177/002248718803900109

Berk, R. A., Berg, J., Mortimer, R., Walton-Moss, B., & Yeo, T. P. (2005). Measuring the effectiveness of faculty mentoring relationships. Academic Medicine, 80(1), 66–71. https://doi.org/10.1097/00001888-200501000-00017

Buddeberg-Fischer, B., & Herta, K. D. (2006). Formal mentoring programmes for medical students and doctors - A review of the Medline literature. Medical Teacher, 28(3), 248–257. https://doi.org/10.1080/01421590500313043

Chen, Y., Watson, R., & Hilton, A. (2016). A review of mentorship measurement tools. Nurse Education Today, 40, 20–28. https://doi.org/10.1016/j.nedt.2016.01.020

Chickering, A. W., & Reisser, L. (1993). Education and identity (2nd ed.). San Francisco: Jossey-Bass.

Crisp, G., Baker, V. L., Griffin, K. A., Lunsford, L. G., & Pifer, M. J. (2017). Mentoring Undergraduate Students. ASHE Higher Education Report (Vol. 43). https://doi.org/10.1002/aehe.20117

Duck, S. (1994). Strategems, spoils, and a serpent's tooth: On the delights and dilemmas of personal relationships. In The dark side of interpersonal communication (pp. 3–24). Hillsdale, NJ: Lawrence Erlbaum Associates, Inc.

Emergence international Inc. (n.d.). The Five Mentor Approaches & Ten Skills. The Emerging Leader Mentor Course, 41–44.

Fleming, M., House, S., Shewakramani, V., Yu, L., Garbutt, J., McGee, R., … Rubio, D. M. (2013). The Mentoring Competency Assessment: Validation of a New Instrument to Evaluate Skills of Research Mentors. Academic Medicine, 88(7), 1002–1008. https://doi.org/10.1111/j.1743-6109.2008.01122.x.Endothelial

Fornari, A., Murray, T. S., Menzin, A. W., Woo, V. A., Clifton, M., Lombardi, M., & Shelov, S. (2014). Mentoring program design and implementation in new medical schools. Medical Education Online, 19, 24570. https://doi.org/10.3402/meo.v19.24570

Frei, E., Stamm, M., & Buddeberg-Fischer, B. (2010). Mentoring programs for medical students--a review of the PubMed literature 2000-2008. BMC Medical Education, 10, 32. https://doi.org/10.1186/1472-6920-10-32

Harden, R. M., & Crosby, J. R. (2000). The Good Teacher is More Than A Lecturer. Medical Teacher, 22(4), 334–347. https://doi.org/10.1080/014215900409429

Houghton, T. (2016). Standards to support learning and assessment in practice. Nursing Standard, 30(22), 41–46.

Igartua, K. (1997). Fostering faculty mentorship of junior medical students (Letter). Academic Medicine, 72(1), 2–3.

Jacobi, M. (1991). Mentoring and Undergraduate Academic Success: A Literature Review. Review of Educational Research, 61(4), 505–532. https://doi.org/10.3102/00346543061004505

Johnson, W. B. (2002). The Intentional Mentor: Strategies and Guidelines for the Practice of Mentoring. Professional Psychology: Research and Practice, 33(1), 88–96. https://doi.org/10.1037/0735-7028.33.1.88

Johnson, W. B. (2003). A framework for conceptualizing competence to mentor. Ethics and Behavior, 13(2), 127–151. https://doi.org/10.1207/S15327019EB1302_02

Kusurkar, R. A., Ten Cate, T. J., Van Asperen, M., & Croiset, G. (2011). Motivation as an independent and a dependent variable in medical education: A review of the literature. Medical Teacher, 33(5). https://doi.org/10.3109/0142159X.2011.558539

Lafleur, A., & White, B. (2010). Appreciating mentorship: the benefits of being a mentor. Professional Case Management, 15(6), 305–311. https://doi.org/10.1097/NCM.0b013e3181eae464

Lakoski, J., & Lou Voytko, M. (2017). Mentoring Toolkit For Mentors. AAMC GWIMS Toolkit.

Lee, A., Dennis, C., & Campbell, P. (2007). Nature ' s guide for mentors. Nature, 447(June), 791–797. https://doi.org/10.1038/447791a

Levinson DJ, Darrow CN, Klein EB, Levinson MA, M. B. (1978). Seasons of a man's life. New York: Knopf.

Mann, M. P. (1992). Faculty mentors for medical students: a critical review. Med Teach, 14(4), 311–319. Retrieved from http://pesquisa.bvsalud.org/portal/resource/pt/mdl-1293456

NHS, & Nursing & Midwifery Council, 2008. (2011). Supporting Learners and Promoting Best Practice: Mentor/Educator Record incorporating Triennial Review. Lancashire Care NHS Trust.

Nickitas, D. M., A, V.-P. M., & Stephen, J. (2015). What is the relationship between mentors' qualities and mentees successful progression in a Nursing PhD program? https://doi.org/10.1177/1744987106066968.Rich

Parkerson, G. R., Broadhead, W. E., & Tse, C.-K. J. (1990). The Health Status and Life Satisfaction of First-Year Medical Students. Academic Medicine, 65(9), 586–588.

Pfund, C., House, S., Spencer, K., Asquith, P., Carney, P., Masters, K. S., … Fleming, M. (2013). A Research Mentor Training Curriculum for Clinical and Translational Researchers. Clinical and Translational Science, 6(1), 26–33. https://doi.org/10.1111/cts.12009

Plamondon, K. (2007). Module Two: Competency in Mentoring. CANADIAN COALITION FOR GLOBAL HEALTH RESEARCH. Retrieved from www.ccghr.ca

Ramirez, J. J. (2012). The Intentional Mentor : Effective Mentorship of Undergraduate Science Students. The Journal of Undergraduate Neuroscience Education (JUNE), 11(1), A55-63.

Rose, G. L. . (2003). Enhancement of Mentor Selection Using the Ideal Mentor Scale. Research in Higher Education, 44(4), 473–494.

Rose, G. L., Rukstalis, M. R., & Schuckit, M. A. (2005). Informal mentoring between faculty and medical students. Academic Medicine, 80(4), 344–348.

Shamim, M. S. (2013). Mentoring programme for faculty in medical education: South-Asian perspective. Journal of the Pakistan Medical Association, 63(5), 619–623.

Shamsunnisa, S., Khan, R. A., Rauf, R., Shaheen, A., & Waqar, F. (2014). Ideal Mentor - Perceptions of Faculty and Students. JIIMC, 9(1), 3–6.

Sozio, S. M., Chan, K. S., & Beach, M. C. (2017). Development and validation of the Medical Student Scholar-Ideal Mentor Scale (MSS-IMS). BMC Medical Education, 17(1), 1–7. https://doi.org/10.1186/s12909-017-0969-1

Srinivasan, M., Li, S. T. T., Meyers, F. J., Pratt, D. D., Collins, J. B., Braddock, C., … Hilty, D. M. (2011). "Teaching as a competency": Competencies for medical educators. Academic Medicine, 86(10), 1211–1220. https://doi.org/10.1097/ACM.0b013e31822c5b9a

Wilkerson, L., & Irby, D. M. (1998). Strategies for improving teaching practices: a comprehensive approach to faculty development. Academic Medicine : Journal of the Association of American Medical Colleges.

ABSTRACT

ORIGNAL ARTICLE

Doctors' experiences and awareness of non-technical skills, a way to the development of a behavioral marker system for patient management

Nighat Majeed[1,3], Usman Mehboob[2]

Background: The complement technical skills, contributes to efficient task performance and improve 'safe practice' by health professionals. Success with non-technical skills training in other industries is achieved has led to widespread permutation to healthcare education, with non-technical skills. We explore the junior doctor's awareness and application of nontechnical skills needed to work in hospitals. The cognitive, social and personal resource skill that complements technical skill, and contributes to safe and efficient task performance is called nontechnical skill. There is growing awareness that non-technical skills are essential for competent practice and non-technical skills are the integral part of many training programs.

Aim: To rank the importance and determine the awareness of non-technical skills by the junior doctors essential to work efficiently and safely at hospitals.

Methods: A cross-sectional study was conducted among the post graduate trainee doctors and house officers at department of medicine services hospital Lahore. Two hundred doctors participated in the study.

Data collection technique: Two questionnaires were distributed simultaneously to each participant. First one was structured to inquire about the ranking of ten nontechnical skills in the terms of importance from one to ten. The other questionnaire indirectly assessed these skills by scenario based questions taken from text book of medicines.

Results: In the study 'Analysis of situation' was ranked as the most important non-technical skill and dealing with the patients in clinical isolation as least important. Significant difference was observed among non-technical skills mean rank score ($p < 0.001$). Analysis of situation was most important followed by fatigue management and task prioritization. Stage of medical training was associated with differences in ranking patterns for analysis of situation ($p<0.001$), decision making ($p=0.046$), communication skills ($p<0.001$), team working ($p<0.001$), leadership ($p<0.001$), fatigue management ($p<0.001$), task prioritization ($p<0.001$), and planning of work at call ($p=0.001$). 52% doctors were aware of proper use of non-technical skills ($p-0.476$).

Conclusion: It is observed that there is a discrepancy between the awareness and experience of junior doctor about non-technical skills. This suggests a training gap. There is a need for to update the medical education at undergraduate and postgraduate levels to adequately train the doctors in all the non-technical skills for further improvement in health care. These skills can be improved at institutional levels by simulation based training or by direct observation at workplace. These skills need to be integrated in medical curricula as a countermeasure for human error. Poor nontechnical skills are a significant cause of adverse medical events in patients presenting with accidents and other emergencies.

Keywords: *Nontechnical skills, analysis of situation, teamwork, Leadership, communication.*

Introduction: The cognitive, social and personal resource skill that complement technical skill, and contribute to safe and efficient task performance is called nontechnical skill(Kodate, Ross, Anderson, & Flin, 2012). These skills are essential for competent practice and non-technical skills are the integral part of many training programs. These skills can be assessed by various assessment methods. Decision-making, leadership, communication situation awareness, and teamwork and task management are the non-technical communication skills initially described(Cooper, Porter, & Peach, 2014).Some other nontechnical skills used in health management system are also identified in literature and these includes fatigue management ,task prioritization, sleep management, dealing with patients in clinical isolation and planning of duty(Brown, Shaw, Sharples, Le Jeune, & Blakey, 2015).

Improving the domain specific competencies minimizes human error by training the people in knowledge skills and attitude. In aviation this approach is used in training environment and workplace environment to reduce the adverse outcome. Integration of human factors into the medical curriculum is important as it promotes safe practice and minimize human error(Glavin & Maran, 2003).Surgeons has to work in teams to perform surgical procedures. Optimum outcome for surgical patients is dependent both on technical and non-technical skills of operating

1. *Medical Unit II, Services Hospital, Lahore, Pak*
2. *Institute of Health Professions Education and Research, Khyber Medical University, Pak*
3. *Department of Medical Education, University of Lahore, Pak*
   Correspondence:
   Dr. Nighat Majeed
   dr_nm@hotmail.com

team(McClelland, 2018). Inter professional simulation based education improved the 2nd year postgraduate residents training communication, confidence and leadership(Nicksa, Anderson, Fidler, & Stewart, 2015).Taxonomy of nontechnical skills was developed to minimize the prescribing errors in part of doctors which can lead to the increased mortality and hospital admissions (Dearden, Mellanby, Cameron, & Harden, 2015).

Hospitals are overcrowded with patients. This increased number of hospital admission has increased the demand of improving patient care with the existing treatment resources which at times gets exhausted. Hospital care in emergency and OPD is largely provided by house officers, junior doctors and staff nurses. They   need to be trained in the medical as well the non-technical skills to cope with this overcrowded situation. The unpleasant incidences at work place resulting from the emotional reactions of relatives or patients are also common and countermeasures are also required to avoid these problems. The media attention has highlighted the importance of improved training of clinical personal while dealing with patients.

 Emergency patients are unknown to the doctor and most of the times they are not having the record of their previous illness or medication. Communication with them is difficult due to many reasons including dementia, unconsciousness and language barrier etc. Some patients are uncooperative and illusory. Many patients are homeless, victims of homicidal poisoning or with substance abuse(L. Flowerdew, Brown, Vincent, & Woloshynowych, 2012). These patients are brought by rescue department. Some patients of road traffic accidents domestic or public violence are the medico legal cases requiring the help or are accompanied by police. Doctor in emergency is working under high degree of skepticism and apprehension. To deal with these difficult situations doctors need to have both technical skills for better patient management and non-technical skills for the better understanding of different situations, management of stress and improvement of communication with patients paramedical staff and nurses(L. A. Flowerdew, 2011).

The doctors working in OPD needs to have leadership skills as the OPDS are full of patients referred from rural health centers and tehsil headquarter hospitals. Most of these patients are seen by the trainee doctors and only the difficult cases are seen by the specialist doctors and consultants. Healthcare system must adapt major changes for optimum the use of limited resources(Perez et al., 2016).

To blame an Individuals is more easy and is always done .Institutions never take the responsibility(Reason, 2000). The doctor dealing with the patient is responsible if something goes wrong.

We do not teach non-technical skills in medical colleges and neither are they the part of curriculum. Adverse medical outcomes are significantly attributed to NTS failures.(Cooper, Endacott, & Cant, 2010).Low and middle income countries are actually facing the health challenge and there is very little awareness about NTS in these countries (Scott et al., 2016).

Team Objective structured Clinical Examination improves inter-professional teamwork among the students(Keshmiri, Najarkolai, Motlagh, & Saljoughi).Training skills of mentor and the mentor trainee interaction is very important in transferring self-directed learning skills in medical students (Heeneman & de Grave, 2017).

Considering the above mentioned facts, we conducted a study to see our experience of these skills in health professional education as no such studies are available in our system.

Research Question:

Is there any training gap in our health care system regarding the training of health professionals about non-technical skills?

OBJECTIVES:

1-To determine the importance of non-technical skills in terms of its rank required to work efficiently and safely at hospitals.

2-To explore the junior doctor's awareness and experience of the non-technical Skills

Study Design: Cross sectional study.
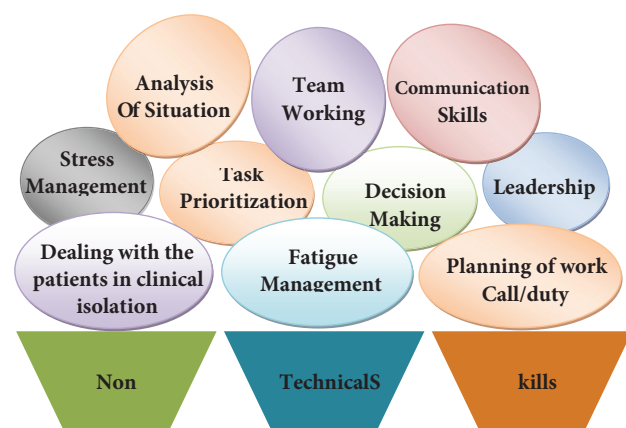
Methodology:

Study center:

Department of medicine services hospital Lahore.

Sample size: The sample size for the present study was calculated by taking most probable prevalence of ranking the non-technical skill 50% and permissible error as 7% with 95% confidence interval.

$$n= \frac{(1.96)2 \times (p)\,(1-p)}{\underline{\hspace{3cm}}}$$

Figure: 1 Non-Technical Skills

(0.07) 2

Sampling technique: Purposive sampling was done.

Inclusion criteria:

All the house officers and postgraduate trainee doctors working at department of medicine services hospital Lahore was included in the study.

Exclusion criteria:

Non-responders were excluded from the study.

Study duration:

One month from 18th June 2018 to 18th July 2018.

Ethical approval:

Approval of the study was obtained from the Institutional Review Board. The study was carried out in accordance with the Declaration of Helsinki and informed consent was taken from all the participants.

Definition used:

Non-technical skills: The cognitive, social and personal resource skills that complement technical skills, and contribute to safe and efficient task performance.

Abbreviations used:

NTS: Non-technical skills

OPD: outpatient department

Data collection technique:

After an informed consent and appropriate briefing, two questionnaires were distributed simultaneously to each participant. First one was structured to inquire about the ranking of ten nontechnical skills shown in Figure-1 in the terms of importance from one to ten.one signify the most important skill and two signify the next important skill and so on. The other questionnaire indirectly assessed these skills by scenario based questions taken from text book of medicines. They participants were asked to rank the importance of each non-technical skill as per their knowledge experience.

Data processing:

The data was analyzed by using SPSS version 20. Non-technical Skills were ranked in terms of their importance to house officers and PG trainees on 1 to 10 score. 1 indicates the most important option, 2 indicate the next most important option, and so on. One way ANOVA was used for comparison of mean rank score among stage of training and to investigate the effect of stage in clinical education on the ranking of skills. To make multiple comparisons post hoc tukey test was used.

Results: A total of ten non-technical skills found to be important from literature review were ranked in the order of importance. A difference in ranking of skills was observed. In the study 'Analysis of situation' (mean rank 2.2) was ranked as the most important and dealing with the patients in clinical isolation the least important skill Figure: 2. Significant difference was observed among non-technical skills mean rank

score ($p < 0.001$). Analysis of situation was most important followed by fatigue management and task prioritization ($p = 0.999$). Decision making and communication skills were also ranked equally ($p = 0.778$).

Stage of medical training was associated with differences in ranking patterns for, analysis of situation ($p<0.001$), decision making ($p=0.046$), communication skills ($p<0.001$), team working ($p<0.001$), leadership ($p<0.001$), fatigue management ($p<0.001$), task prioritization ($p<0.001$), and planning of work at call ($p=0.001$) Figure: 3.

House officers and Post graduate trainee doctors of first year ranked the analysis of situation as most important skill($p<0.001$), ,whereas communication skills($p<0.001$), team work($p<0.001$), and leadership($p<0.001$) was ranked most important by second year third year and fourth year trainee doctors respectively These differences are illustrated in Fig:4

On an average 52% doctors participating in the study were properly aware of use non-technical skills with better scores as the stage of training goes up (p-0.476) Figure: 5.

Discussion:

Workplace behavior is important in safety training and thinking as both of these concepts are very much integrated. In this study significant difference was observed among non-technical skills mean rank score ($p < 0.001$). Analysis of situation was followed by fatigue management and Task prioritization in ranking the skills ($p = 0.999$). Decision making and communication skills were also ranked equally ($p = 0.778$).In a previous study done task prioritization was ranked as most important skill followed by communication skills, managing sleep and personal needs(Brown et al., 2015). Another important factor is observed that duration of medical training was associated with differences in ranking patterns of non-technical skills. : It is observed that there is a discrepancy between the awareness and experience of junior doctor about non-technical skills. This suggests a training gap. Approximately half of the participants were not aware proper use of these skills especially at the start of work in hospitals.

Junior doctor's experience about the nontechnical skills can be a part of both the training and assessment programs as adopted in other safety sectors such as acute medicine(Flin, 2018). in a previous study training of nontechnical skills in anesthesia and emergency medicine, the most common areas identified for improvement were communication and team working after training and assessment (Flin & Maran, 2004). In our study communication skills were ranked as most important non-technical clinical skill($p<0.001$) by the second year trainee doctors. A previous study done showed that situation awareness and teamwork improved in students after

Figure: 2 Ranking of non-technical skills in ascending orders
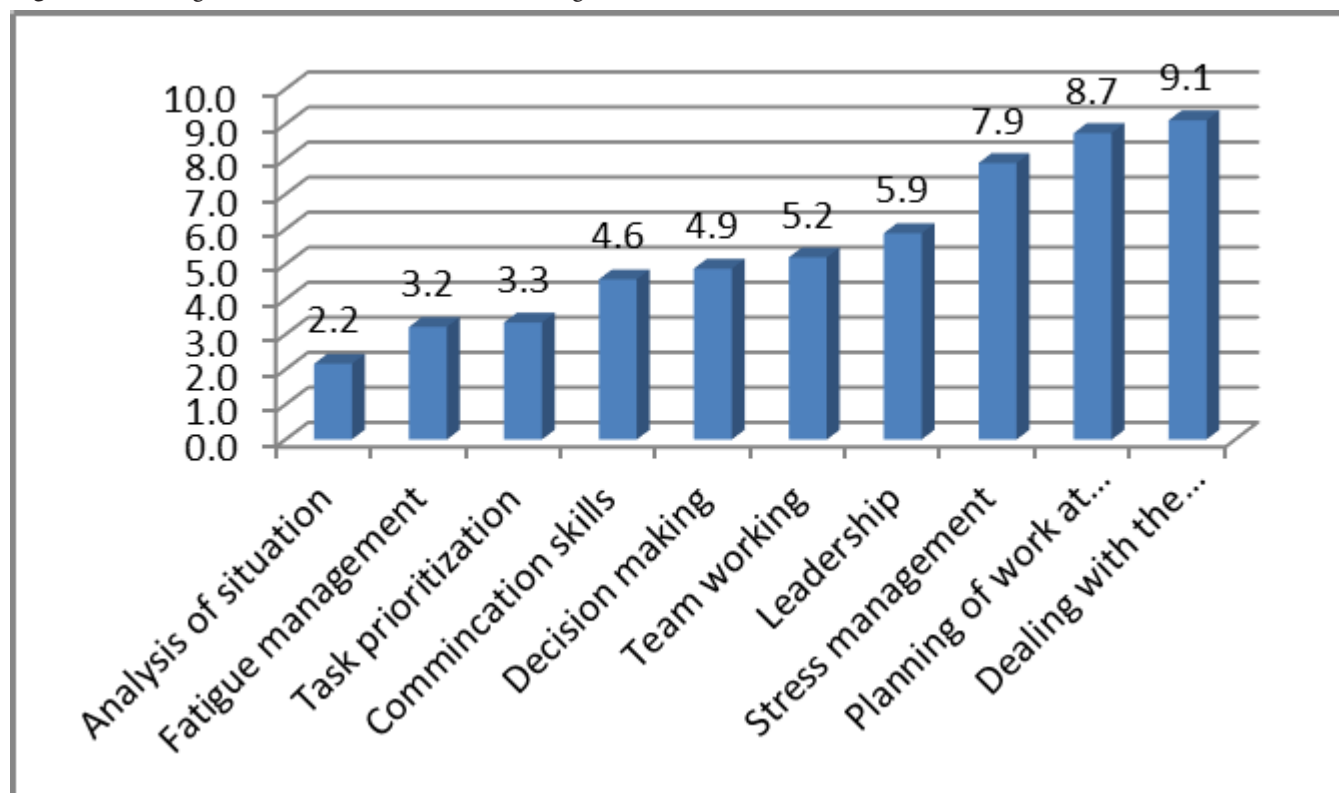
Figure: 3 Nontechnical skills ranking and stage of training
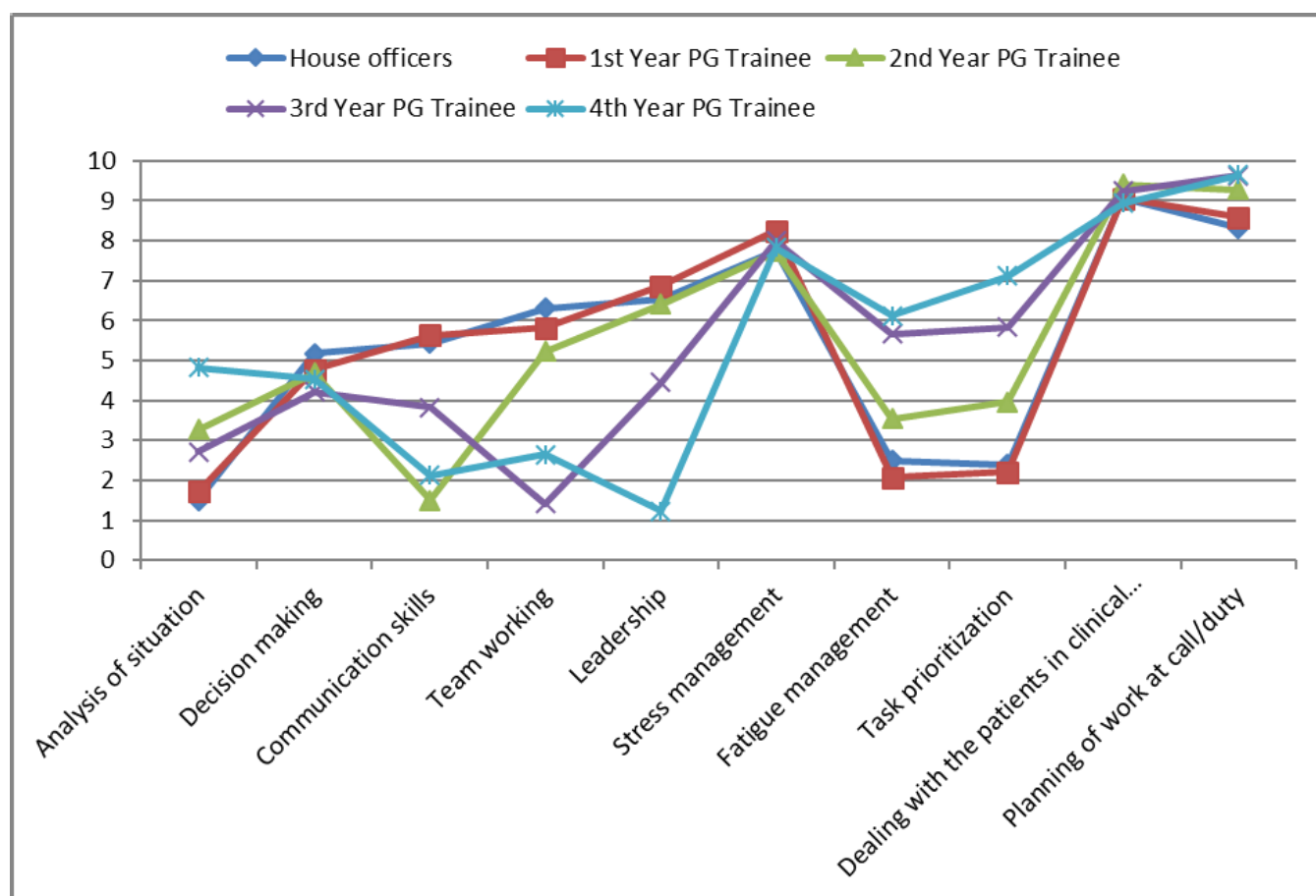
Figure: 4 Axial description of Nontechnical skills with respect to stage of training

House Officer	PG Trainee 1st Year	PG Trainee 2nd Year	PG Trainee 3rd Year	PG Trainee 4th Year
Analysis of situation	Analysis of situation	Commincation skills	Team working	Leadership
Task prioritization	Fatigue management	Analysis of situation	Analysis of situation	Commincation skills
Fatigue management	Task prioritization	Fatigue management	Commincation skills	Team working
Decision making	Decision making	Task prioritization	Decision making	Decision making
Commincation skills	Commincation skills	Decision making	Leadership	Analysis of situation
Team working	Team working	Team working	Fatigue management	Fatigue management
Leadership	Leadership	Leadership	Task prioritization	Task prioritization
Stress management	Stress management	Stress management	Stress management	Stress management
Planning of work at call/duty	Planning of work at call/duty	Planning of work at call/duty	Dealing with the patients in clinical isolation	Dealing with the patients in clinical isolation
Dealing with the patients in clinical isolation	Dealing with the patients in clinical isolation	Dealing with the patients in clinical isolation	Planning of work at call/duty	Planning of work at call/duty

Figure: 5 Test score showing the awareness of doctors about NTS
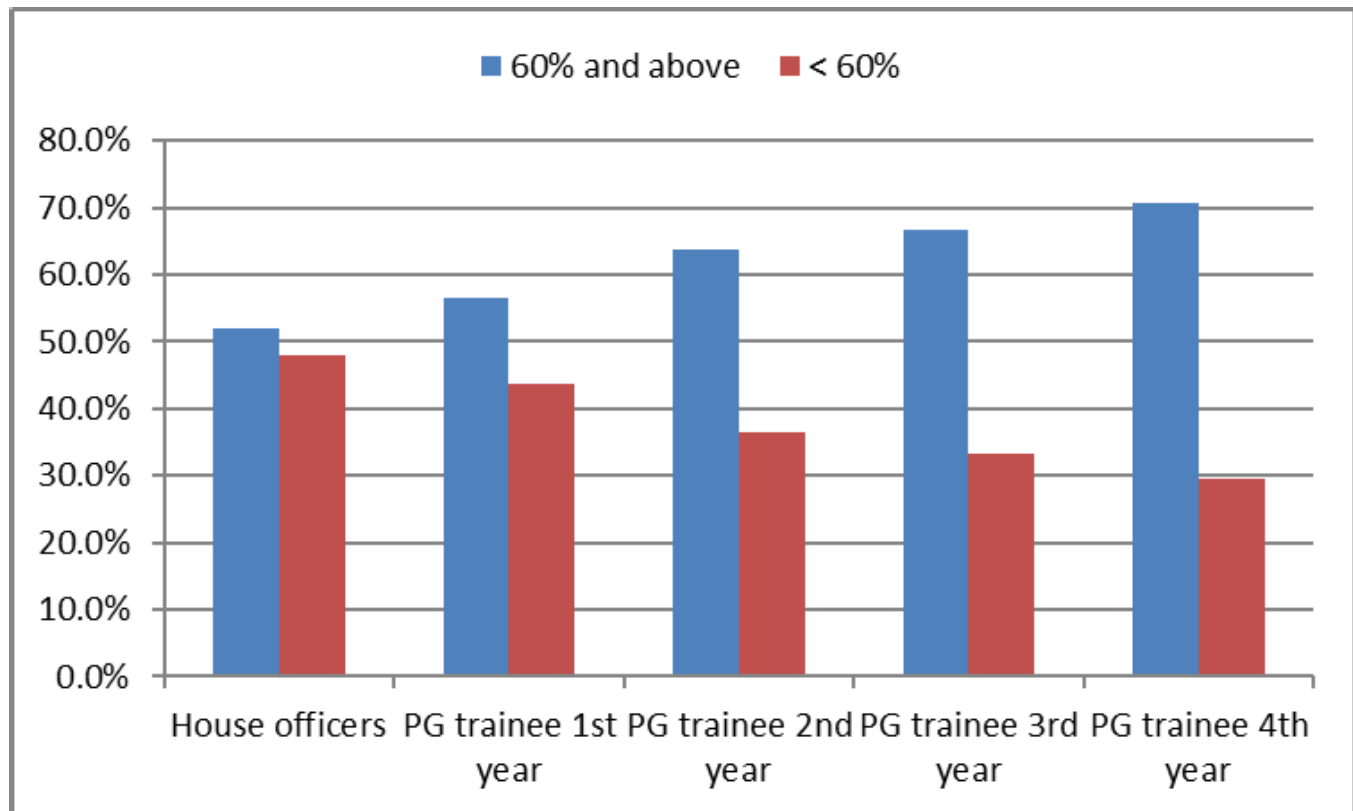
attending NTS simulation seminar(Hagemann et al., 2017). In our study situation analysis was ranked as most important non-technical skills while working in OPD and emergency. Another study emphasized the dissipation of intergroup contact anxiety and teamwork as important NTS(Gordon, Fell, Box, Farrell, & Stewart, 2017).

It is seen in the previous studies that there is 37% increase in number of hospital admissions which requires advance medical care and multidisciplinary management(Brown et al., 2015).sleep deprivation is frequent among the trainee doctors due to long working hours. The working hours for healthcare professionals are more than the other professions(Gaba & Howard, 2002).in our study fatigue management was not ranked as important compared to other NTS. It has been shown in a previous study that job performance is related more with team work skills and situation judgment has lowest criterion validity for job performance (Pollard & Cooper-Thomas, 2015).Few NTS are used in emergency setting and focused assessment of teamwork skills enhance patient safety in emergency situation(Cooper et al., 2010).In our study second year trainee doctors ranked team work as important NTS. Nontechnical skills do have an impact on health care outcomes and improve patient safety(Cooper et al., 2014).It was identified that technical and nontechnical skills training, effectiveness, assessment, and system probing improves

patient safety in health care (Sollid et al., n.d.).In a previous study It has been observed that poor nontechnical skills is a significant cause of adverse medical events in patients presenting with accidents(Uramatsu et al., 2017). Another study showed the significant correlation between technical and non-technical skills ranging from 0.31 to 0.45 measured by checklist and technical performance. (Almutairi, 2017)

Team emergency assessment measures were developed to standardize the performance of health professionals. This was done by improving relationship between Teamwork and Leadership and between Teamwork and Task Management (p < 0.001(Cooper et al., 2014). Patient safety is in an important concern now days in in patient management.

Conclusion: It is observed that there is a discrepancy between the awareness and experience of junior doctor about non-technical skills. This suggests a training gap. There is a need for to update the medical education at undergraduate and postgraduate levels to adequately train the doctors in all the non-technical skills for further improvement in health care. These skills can be improved at institutional levels by simulation based training or by direct observation at workplace. These skills need to be integrated in medical curricula as a countermeasure for human error. Poor nontechnical skills are a significant cause of adverse medical events in patients presenting with accidents and other

emergencies.

In our health system nontechnical skills are learned by as a part of peer assisted leaning or by mentoring and apprenticeship. Only communications skills are taught to some extent. We strongly recommend for include these skills in teaching programs of doctors and medical students.

Limitations: Simulation based assessment of non-technical skills can judge the students awareness in a better way.

Way Forward: More studies are required to find out a way towards improvement these skills in medical students as they are future doctors.

References:

Almutairi, A. A. (2017). Do Technical Skills Correlate with Non-Technical Skills During Crisis Resource Management? Health Science Journal, 11(6).

Brown, M., Shaw, D., Sharples, S., Le Jeune, I., & Blakey, J. (2015). A survey-based cross-sectional study of doctors' expectations and experiences of non-technical skills for Out of Hours work. BMJ open, 5(2), e006102.

Cooper, S., Endacott, R., & Cant, R. (2010). Measuring non-technical skills in medical emergency care: a review of assessment measures. Open access emergency medicine: OAEM, 2, 7.

Cooper, S., Porter, J., & Peach, L. (2014). Measuring situation awareness in emergency settings: a systematic review of tools and outcomes. Open access emergency medicine: OAEM, 6, 1.

Dearden, E., Mellanby, E., Cameron, H., & Harden, J. (2015). Which non-technical skills do junior doctors require to prescribe safely? A systematic review. British journal of clinical pharmacology, 80(6), 1303-1314.

Flin, R. (2018). Enhancing Safety Performance: Non-technical Skills and a Modicum of Chronic Unease Beyond Safety Training (pp. 45-58): Springer.

Flin, R., & Maran, N. (2004). Identifying and training non-technical skills for teams in acute medicine. BMJ Quality & Safety, 13(suppl 1), i80-i84.

Flowerdew, L., Brown, R., Vincent, C., & Woloshynowych, M. (2012). Identifying nontechnical skills associated with safety in the emergency department: a scoping review of the literature. Annals of emergency medicine, 59(5), 386-394.

Flowerdew, L. A. (2011). The Assessment of Registrars' Non-technical Skills in the Emergency Department.

Gaba, D. M., & Howard, S. K. (2002). Fatigue among clinicians and the safety of patients. New England Journal of Medicine, 347(16), 1249-1255.

Glavin, R., & Maran, N. (2003). Integrating human factors into the medical curriculum. Medical Education, 37, 59-64.

Gordon, M., Fell, C. W., Box, H., Farrell, M., & Stewart, A. (2017). Learning health 'safety'within non-technical skills interprofessional simulation education: a qualitative study. Medical education online, 22(1), 1272838.

Hagemann, V., Herbstreit, F., Kehren, C., Chittamadathil, J., Wolfertz, S., Dirkmann, D., . . . Peters, J. (2017). Does teaching non-technical skills to medical students improve those skills and simulated patient outcome? International journal of medical education, 8, 101.

Heeneman, S., & de Grave, W. (2017). Tensions in mentoring medical students toward self-directed and reflective learning in a longitudinal portfolio-based mentoring system–An activity theory analysis. Medical teacher, 39(4), 368-376.

Keshmiri, F., Najarkolai, A. R., Motlagh, M. K., & Saljoughi, N. Inter-Professional Team Objective Structured Clinical Examination (ITOSCE): teaching and assessment strategies of the inter professional approach.

Kodate, N., Ross, A., Anderson, J. E., & Flin, R. (2012). Non-Technical Skills (NTS) for enhancing patient safety: achievements and future directions.

McClelland, G. (2018). Factors that affect scrub practitioner non-technical skills: A literature review. Journal of perioperative practice, 28(4), 75-82.

Nicksa, G. A., Anderson, C., Fidler, R., & Stewart, L. (2015). Innovative approach using interprofessional simulation to educate surgical residents in technical and nontechnical skills in high-risk clinical scenarios. JAMA surgery, 150(3), 201-207.

Perez, I., Brown, M., Pinchin, J., Martindale, S., Sharples, S., Shaw, D., & Blakey, J. (2016). Out of hours workload management: Bayesian inference for decision support in secondary care. Artificial intelligence in medicine, 73, 34-44.

Pollard, S., & Cooper-Thomas, H. D. (2015). Best Practice Recommendations for Situational Judgment Tests. The Australasian Journal of Organisational Psychology, 8.

Reason, J. (2000). Human error: models and management. Bmj, 320(7237), 768-770.

Scott, J., Revera Morales, D., McRitchie, A., Riviello, R., Smink, D., & Yule, S. (2016). Non-technical skills and health care provision in low-and middle-income countries: a systematic review. Medical Education, 50(4), 441-455.

Uramatsu, M., Fujisawa, Y., Mizuno, S., Souma, T., Komatsubara, A., & Miki, T. (2017). Do failures in non-technical skills contribute to fatal medical accidents in Japan? A review of the 2010–2013 national accident reports. BMJ open, 7(2), e013678.

ABSTRACT

Background: There is an emerging trend of reflective writing in medical education that fosters the growth of an individual

ORIGNAL ARTICLE

Does reflective writing affect the knowledge, attitude and skills of house officers?

Ahmad Liaquat[1,4], Rahila Yasmeen[2], Ansa Naheed[3]

cognitively, emotionally and morally. In literature there is no evidence that reflection enhanced the competence or skills of medical and dental students.

Aim: The purpose of this study was to bridge this research gap and to evaluate if reflective writing changes the knowledge, attitude and skills of the doctors.

Methods: This study was conducted in University college of Medicine and Dentistry, University of Lahore in June, 2018. Twenty house officers were included in this study. A questionnaire was filled by them as a pretest. They were asked to write reflection by Gibbs cycle in a word file and send it daily in WhatsApp group. Feedback was given to them. After 10 days of daily reflection they were asked to fill the same questionnaire as posttest and the results were compared.

Results: There was a significant difference ($p < 0.05$) for each question. Deepening the learning and understanding, reducing the errors, using the time effectively, purposeful communication with colleagues, refining the surgical skills and enhancement of the problem solving ability were the benefits of reflection.

Conclusion: Reflective writing is a powerful tool for metacognition. Critical reflection of the tasks enhances the knowledge of the doctors as they reflect.

Key words: *Reflection writing, Reflection in dentistry, skills enhancement*

Introduction: "Let us emancipate the student and give him time and opportunity for the cultivation of his mind, so that in his pupilage he shall not be a puppet in the hands of others, but rather a self-relying and reflective being." Sir William Osler.

The word reflection is from the Latin origin which means "to turn back" or "to bend". So reflection is a process in which our thoughts are turned back to the event or situation. We think about the events in details, analyze the situation and make an action plan for the next encounter to be dealt wisely (Sandars, 2009). There are many definitions of reflection in literature. According to Osler, 'Reflection is a metacognitive process that occur before, during or after an event with the purpose of developing better understanding of the self and the situation so the next encounters are informed from the previous ones' (Osler, n.d.). Repetition and practice may help in our learning but it cannot replace the active thinking process about what we have done well or bad. How differently we did and what better could be done? It is only possible when we reflect on the events (Halpern, 2014). Reflective learning can improve professionalism and clinical reasoning. For the complex clinical challenges, reflection is the most effective clinical learning strategy (Osler, n.d.). Teachers should define

the learning goals for which a particular reflective writing is being practiced to have maximum utilization from it. There are different modes of practicing the reflective exercise; oral, written notes, blogs and storytelling (Cooper, 1998; Korthagen, 1993).

Most of the work in reflective writing has been done in nursing (Kandeel & Ibrahim, 2010; Moattari & Abedi, 2008). Currently, there is little practice of refelctive writing in most of undergraduate or postgraduate medical colleges of Pakistan. The purpose of this research is to evaluate the utilization of reflective writing practice in changing the knowledge, attitude and skills of the house officers.

Methods: This one shot experimental study was conducted in Oral & Maxillofacial surgery department of University college of Medicine and Dentistry, University of Lahore from 11th June to 21st June 2018. Twenty four dental surgeons, who were on their clinical rotation of house job in Oral & Maxillofacial surgery department were included in this study after a verbal consent. A pre validated questionnaire was modified according to the local context and validated by medical educationists. A pretest questionnaire was filled by all the house officers. All the particpants were then taught the reflective writing skills using Gibbs cycle (Oxford Brookes University, 2013). The areas of reflection were decided and clearly informed to all house officers, which included taking the history in outpatient department, making diagnosis, , doing extractions of different teeth and post op care of

1. *Department of Oral and Maxillofacial Surgery, University College of Medicine and Dentistry, UOL, Pak*

2. *Department of Medical Education, Riphah International University, Pak*

3. *King Edward Medical University, Lahore, Pak*

4. *Department of Medical Education, University of Lahore, Pak*
     Correspondence:
     Dr. Ahmad Liaquat
     ahmadliaquat@hotmai.com

patients. They were asked to write reflections in a Ms word and post it daily in a WhatsApp group. Feedback was given to them daily on their reflections. Four house officers left the study due to their personal reasons. After 10 days of daily reflective writing practice, the remaining twenty house officers were asked to fill the same questionnaire as posttest. Data was analyzed by using Statistical Package for Social Sciences (SPSS) version 21.

Results: There was a significant difference in pre and posttest of all questions as shown in Table 1. The participants acknowledged that reflection has deepened their learning and helped them in reorganizing their previous knowledge. It enhanced their confidence and made their communication purposeful. All the participants agreed that reflection helped in reducing the medical errors and helped them take better care of their patients. There was a statistically significant difference (p < 0.002) that refelctive writing has enhanced their clinical skills. There was improvement in performing the tasks in time and collaboration with colleagues in a professional manner. There was statistically significant p value for every question which is shown in table 2.

Discussion: The basic aim of this study was to evaluate the reflective writing in changing the knowledge skills and attitude of the house officer with dental background. Most of the work has been done in nursing school (Bulman & Schutz, 2004; Moattari & Abedi, 2008) and limited data is available for

the reflective writing in medical and dental schools. The main goal of reflective writing is to implement theory into practice (Mann, Gordon, & MacLeod, 2009). It increases interest in self regulated learning. Self regulated learner use more metacognitive process to evaluate their performance (Sandars, 2009). Depth of knowledge and patient care can be improved if the doctors have reflective powers. Good clinicians needs to develop a good relationship with the patients and their care takers and this therapeutic relationship is important in maintaining a good rapport of clinician. Studies have shown that reflective writing can be used for development of this therapeutic relationship (Stewart et al., 2000). Studies have been done to include the reflective writing in curriculum, so the students can merge theory and practice (Aronson, 2011). This study showed that reflection promotes the students to perform the tasks in time and their problem solving abilities are improved. The results of this study are aligned with the study by Atkins (Atkins & Murphy, 1994). Two other studies also showed that reflective writing increased the diagnostic skills (Sobral, 2000) and helped the students to behave as better professionals (Niemi, 1997). In our study, reflective writng increased the understanding of the subject and made the communication of students purposeful. These results are consistent with the previous studies (Mann et al., 2009; Pee, Woodman, Fry, & Davenport, 2000; Wald, Davis, Reis,

Table 1: Pre-test post-test proforma

		I agree	I have no idea	I disagree
Q1	Reflection activity deepens my learning			
Q2	Reflection reorganizes my previous knowledge			
Q3	Reflection increases my self confidence			
Q4	Reflection makes my communications purposeful			
Q5	Reflection helps in reducing medical errors			
Q6	Reflection makes my procedural skills improved day by day			
Q7	Reflection increases my problem solving ability			
Q8	Reflection helps in better care of patients			
Q9	Reflection helps me to plan and execute the tasks in time			
Q10	Reflection helps me to work with colleagues in a professional manner			

Table 2: Results

	Pre test			Post test		
	Agree	**I have no idea**	**Disagree**	**Agree**	**I have no idea**	**P value**
Q1	11(55%)	9(45%)	-	19(95%)	1(5%)	0.008
Q2	6(30%)	14(70%)	-	18(90%)	2(10%)	0.000
Q3	14(70%)	6(30%)	-	19(95%)	1(5%)	0.056
Q4	13(65%)	7(35%)	-	19(95%)	1(5%)	0.030
Q5	10(50%)	10(50%)	-	20(100%)	-	0.000
Q6	5(25%)	14(70%)	1(5%)	16(80%)	4(20%)	0.002
Q7	9(45%)	11(55%)	-	19(95%)	1(5%)	0.016
Q8	11(55%)	8(40%)	1(5%)	20(100%)	-	0.002
Q9	9(45%)	10(50%)	1(5%)	15(75%)	5(25%)	0.031
Q10	14(70%)	5(25%)	1(5%)	19(95%)	1(5%)	0.055

Monroe, & Borkan, 2009). Limitation of most of the studies in literature was not evaluateing the reflective writing in enhancing the procedural skills of the student. This was done in our study

Conclusion: Reflective writing is a tool that if used regularly enhances knowledge and skills. This practice should be included in the undergraduate curriculum and students should be encouraged to reflect from the initial days of medical school.

References

Aronson, L. (2011). Twelve tips for teaching reflection at all levels of medical education. Medical Teacher, 33(3), 200–205. https://doi.org/10.3109/0142159X.2010.507714

Atkins, S., & Murphy, K. (1994). Reflective practice. Nursing Standard, Vol 8(No. 39 June), pp 49-54. https://doi.org/10.1080/03634528709378635

Bulman, C., & Schutz, S. (2004). Reflective practice in nursing. Reflective practice in nursing.

Cooper, D. D. (1998). Reading, Writing, and Reflection. New Directions for Teaching and Learning, 1998(73), 47–56. https://doi.org/10.1002/tl.7306

Halpern, D. F. (2014). Thought and Knowledge: An Introduction to Critical Thinking (5th ed). NY: Psychology Press., 467. https://doi.org/10.1080/02667363.2014.934516

Kandeel, N., & Ibrahim, Y. (2010). Student Nurses' Perception on the Impact of Information Technology on Teaching and Learning. International Journal of Information & Communication Technology Education, 6(3), 38–50. Retrieved from http://1.145.0.8/jicte.2010070104%5Cnhttp://search.ebscohost.com/login.aspx?direct=true&db=eue&AN=53069488&site=ehost-live

Korthagen, F. A. J. (1993). Two modes of reflection. Teaching and Teacher Education, 9(3), 317–326. https://doi.org/10.1016/0742-051X(93)90046-J

Mann, K., Gordon, J., & MacLeod, A. (2009). Reflection and reflective practice in health professions education: a systematic review. Advances in Health Sciences Education : Theory and Practice, 14(4), 595–621. https://doi.org/10.1007/s10459-007-9090-2

Moattari, M., & Abedi, H. A. (2008). Nursing students' experiences in reflective thinking: a qualitative study [Farsi]. Iranian Journal of Medical Education, 8(1), 101. Retrieved from http://search.ebscohost.com/login.aspx?direct=true&db=jlh&AN=2010392461&site=ehost-live%5CnPublisher   URL: www.cinahl.com/cgi-bin/refsvc?jid=4121&accno=2010392461

Niemi, P. M. (1997). Medical students' professional identity: Self-reflection during the preclinical years. Medical Education, 31(6), 408–415. https://doi.org/10.1046/j.1365-2923.1997.00697.x

Osler, S. W. (n.d.). The Use of Reflection in Teaching Medical Students.

Oxford Brookes University. (2013). Reflective writing : about Gibbs reflective cycle. Oxford Brookes University, (Gibbs), 1–4. Retrieved from http://www.brookes.ac.uk/services/

upgrade/study-skills/reflective-gibbs.html

Pee, B., Woodman, T., Fry, H., & Davenport, E. S. (2000). Practice-based learning: Views on the development of a reflective learning tool. Medical Education, 34(9), 754–761. https://doi.org/10.1046/j.1365-2923.2000.00670.x

Sandars, J. (2009). The use of reflection in medical education : AMEE Guide No . 44, (44), 685–695. https://doi.org/10.1080/01421590903050374

Sobral, D. T. (2000). An appraisal of medical students' reflection-in-learning. Medical Education, 34(3), 182–187. https://doi.org/10.1046/j.1365-2923.2000.00473.x

Stewart, M., Brown, J. B., Donner, A., McWhinney, I. R., Oates, J., Weston, W. W., & Jordan, J. (2000). The impact of patient-centered care on outcomes. The Journal of Family Practice, 49(9), 796–804. https://doi.org/see also this commentary by Ronal Epstein; http://www.jfponline.com/Pages.asp?AID=2593&UID=

Sukhato, K., Sumrithe, S., Wongrathanandha, C., Hathirat, S., & Leelapattana, W. (2016). To be or not to be a facilitator of reflective learning for medical students ? a case study of medical teachers ' perceptions of introducing a reflective writing exercise to an undergraduate curriculum. BMC Medical Education, 1–9. https://doi.org/10.1186/s12909-016-0624-2

Wald, H. S., Davis, S. W., Reis, S. P., Monroe, A. D., & Borkan, J. M. (2009). Reflecting on reflections: Enhancement of medical education curriculum with structured field notes and guided feedback. Academic Medicine. https://doi.org/10.1097/ACM.0b013e3181a8592f

ABSTRACT

Background: For the conducive learning environment learners and teachers are expected to behave optimally. Disruptive behaviours of students are a thorny issue in

ORIGNAL ARTICLE

Disruptive behaviour in classroom – Medical students' perception

Shumaila Zia[1,2]

everyday classroom. For teachers these behaviours are intolerable, stress provoking and responsible for medical educator's burnout. On the other hand, teacher's misbehaviours also hinder the smoothness and effectiveness of learning and impede the learning of the students.

Aim: To determine the perception of students regarding their own and faculty's disruptive classroom behaviour.

Methods: A descriptive cross-sectional study was conducted at Private Medical College in Lahore on the final year medical students during the month of May 2018. A questionnaire was used for data collection. The data was managed by using SPSS version 25.

Results: A remarkable difference was noted in students' perception regarding their own and faculty's disruptive behaviour. Female students were more sensitive regarding gravity of disruptive behaviour. Regarding their own, students agreed with 35% items while about faculty they labelled 90% items as disruptive behaviour. Sleeping in class (48%), demanding special treatment from the faculty and not putting cell phone on silent mode (44%) were common disruptive behaviour of the students. Humiliating behaviour (87%), unintelligible voice and unavailability of teachers outside the class (81%) were reported by students as common disruptive behaviour of the faculty.

Conclusion: Regarding disruptive behaviour students were more sensitive about teachers' dealing while gave cold shoulder to their own conduct.

Key words: *Disruptive behaviour, classroom behaviour, incivility, faculty, medical students, perception*

Introduction: Learners have their fundamental right to have a safe and respectful environment for learning (Mabeba MZ, 2000). Feldman defines classroom incivility as "any action that interferes with a harmonious and cooperative learning atmosphere in the classroom"(Feldmann, 2001). Inappropriate behaviour is considered as problematic but not necessarily, seriously ill disciplined, even then it is disturbing in the classroom setting e.g. sleeping in class, talking, chatting, lesson disruption, and rude body language towards the teacher are named as 'problem behaviours' (Ho , 2004), "behaviour problems,"(Wheldall & Merrett, 1988) or 'disruptive behaviours'.

There are a variety of ways students behave in a disruptive manner. Some are minor and often ignorable, but a few types of disruptive behaviours go beyond rudeness. Disruptive students interfere not only with the teacher's ability to teach effectively but also require large amounts of the teacher's time and attention. The teachers need to stop the lesson or discussion to address this behaviour which takes away from them, the precious time to teach the rest of the class. This may affect the efficiency of the other students as well. Constant interruptions can interfere with focus. This leads to less academic engaged time and students' poor performance in assessments (Johnson, 2006) . It also results

1. *Department of Gynaecology and Obstetrics, Azra Naheed Medical College, Lahore, Pak*
2. *Department of Medical Education, University of Lahore, Pak*
    Correspondence: Dr. Shumaila Zia
    abeeharafique@hotmail.com

in "disappointment, stress, burnout and poor efficiency of teachers" (Lewis, 1999).

Faculty often ranks disruptive behaviour as one of the most serious challenges in effective teaching /learning process in the classroom. Therefore, it is a matter of great concern for the teachers. Students also get irritated with faculty members whom they consider to be bad communicators, and as a result behave disrespectfully. Clark (2008) in his study described humiliation of students, intimidation by faculty and high expectations from students, as disruptive behaviours of the faculty. In the aforementioned study, many students considered the misuse of power as the main offender. Thus, increased focus on this category to find effective solutions will open vistas for a better relationship between teacher and student, and leads to a favourable teaching environment (Clark, 2008). This study is an attempt to find out the perception of medical students regarding theirs and teacher's disruptive behaviours in class room leading to non-conductive learning environment. Student's viewpoint about the issue may help the educators to successfully develop means of reducing the prevalence of such incivilities.

Methodology: This cross-sectional descriptive study was conducted at Azra Naheed Medical College, Lahore in month of June 2018. A total of 106 students of final years MBBS were recruited who gave consent for participation in the study.

For anonymity and confidentiality students were asked to avoid mentioning their names. A questionnaire comprising of two sections was used to collect data. The first section had questions regarding student's disruptive behaviours and that was taken from Rowland and Srisukho (2009) and was used after getting authors' permission. The second section regarding teacher's incivility was self-prepared. Six incompletely filled proformas were excluded from the study data. First part of the questionnaire was consisted of 20 questions about student's disruptive classroom behaviour. The students' opinion about uncivil behaviour was noted on a five-point Likert scale (1=strongly agree, 2=agree, 3=neutral, 4=disagree, and 5=strongly disagree). The second section was related to teachers' disruptive behaviour consisting of 17 questions. The students' opinion regarding disruptive behaviour of the faculty as a problem was noted on a four-point Likert scale (1=serious problem, 2= problem, 3= I don't know, 4= No problem).

Because of small numbers of responses for each option in data management, the response categories "strongly disagree" and "disagree" were collapsed into one i.e. "disagree." likewise, the response categories "strongly agree" and "agree" were collapsed into one i.e. "agree." Thus, two response categories were used for data analysis (disagree and agree). The chi-square test or Fisher's exact test was used to compare the statistically significant differences in responses.

Data was managed by using the Statistical package for social sciences software (SPSS version 25).

Comparison among groups was done using analysis of variance. A chi –square test was applied for comparison among items of the questionnaire. P < 0.05 was considered to be statistically significant. The project was approved by the Institutional Review Board.

Results: Regarding disruptive behaviour of students:

Out of total 106 participants, 48 were male. Mean age was 22.9 (range: 12-26) years. Sleeping in class was the most common disruptive behaviour considered by 48%. The most insignificant act considered to be disruptive by 74% students was leaving the class early. Sixty three percent students did not consider use of cell phone in class as disrupted behaviour. Sixty percent of the students thought that coming late in class and playfully mocking instructor is not a disrupted behaviour. Using internet in class was not considered an objectionable act by 58%, while 34% opinion was opposite and 8% did not respond. Challenging teacher authority and acting bored was taken as disruptive behaviour by 31%, 56% disagreed with this opinion and 13% were non-decisive. Using cell phone and leaving class early was considered least disruptive by male students as compared to female ones. (Table-1).

Sleeping in class, talking out of turn, not putting cell phone on silent mode during class and examination was disliked comparatively more by female students.

Among the students, there was a statistically significant difference in perceptions of uncivil behaviour being "agree" and "disagree" for the following variables. "Using cell phone" (p- 0.002), "challenging authority of teacher" (p- 0.007), having mentality of "I paid for it" (p-0.05), "playfully mocking instructor" (p – 0.003), "arriving late in class" (p- 0.007), "inattentive in class" (p -0.002), "acting bored and apathetic" (p-0.01) and "using internet in class" (p- 0.01).

Regarding disruptive behaviour by teachers

Humiliating/taunting and belittling behaviour by teacher is considered to be the most serious issue by all students. Unclear or non-understandable voice of the teacher is taken as second most significant issue by the students. Faculty's leaving the class early and straying away from topic during class is least serious problem for the students. Being distant or cold behaviour towards students is considered to be serious problem by female student, which is significantly different from male students' point of view. Being inflexible/rigid and punishing the class for one student's misbehaviour is again significantly serious problem (p < 0.05) for girls. Non-availability of faculty outside the class is taken as a serious problem by girls while male students did not think so. Faculty's unpreparedness for class is a problem for both gender of students but girls think about it with more gravity (p < 0.05). Lack of passion for own discipline by teacher as well as his/her flexibility for students' disruptive behaviour and restriction on open discussion of students is not a significant issue for male student(P < 0.05) as compared to their female counterparts.

Discussion: Indeed, students' disrespectful attitude is a flourishing problem(Karimi Moonaghi, Rad, & Torkmannejad Sabzevari, 2014,Robertson, 2012. This kind of behaviour is prevalent both in students and faculty, yet their viewpoints in this regard are different (Luparell, 2011,Feldmann, 2001) .High standards of ethics are essential part of medical profession (Swick, 2000) and professionalism is the vital part of clinical practice.(Hafeez,Khan,Jawaid, & Haroon, 2013). Managing uncivil classroom behaviour is a tough job for the faculty members, and this academic incivility not only seriously disrupts the learning environment but also faculty–student relationship.Clark (2208) says, "Disruptive behaviour of faculty also has deep effect on student's learning process. Such behaviour not only has profound impacts on their self-confidence and independence but also on their bodies" (Cynthia Clark, 2008).

In a quantitative study by Satyanrayana, et al they took

perception of students and teachers regarding disruptive behaviour and they found that the female students considered cheating in class and challenging the instructor's credibility as significant disruptive behaviour(Satyanrayana et al 2017). Our results are almost similar and female students considered sleeping in class, challenging instructor credibility demanding special privileges from teacher and leaving cell phone on as a disruptive behaviour. Male students in the similar study considered demanding special treatment, missing the deadline, sleeping in class and arriving late to class as uncivil behaviours. While male students in our study also considered similar behaviour as uncivil except missing the deadline of the assignment. Some of the male students in our study though mentioned missing deadline for work as disruptive behaviour in consistence with Ballard (2015) study. Ballard et al.(2015) and Shetty et al. (2016) found that making offensive remarks, challenging instructor knowledge and cheating were perceived as uncivil by the female students , which is also consistent with our findings (Shetty A, 2016,Ballard & Hagan 2015,)

Satyanrayana (2017), and Shetty (2016) mentioned that postgraduate students perceived not paying attention, sleeping in class, leaving the clinic early, missing deadlines, and dominating discussions. We found that student's ranked disruptive behaviour in the descending order of sleeping in class, demanding special treatment, leaving cell phone on, challenging teachers' knowledge and repeated inter-student conversation. There is some difference in frequency of these findings which may be due to maturity of under graduate and post graduate students.

In our study one item, sleeping in class was the most uncivil behaviour perceived by the students although it was not statistically significant. In another work by Rowland and Srisukho (2009), missing deadlines was observed the most disruptive behaviour. They also found that the female instructors considered missing deadlines and sleeping in class as most uncivil behaviour which is consistent with our findings. This signifies that female gender is more sensitive about these behaviour whether being students or faculty(Rowland & Srisukho, 2009).

Clark and Springer in a qualitative study at a nursing institution asked the students about incivilities of faculty in classroom and found that making condescending remarks about students, having a poor teaching style and poor communication skills, taking an attitude of superiority, criticizing students in front of the class, and making threats to fail students were considered significant incivilities. Our findings regarding disruptive behaviour by the faculty in classroom was cited as taunting behaviour (87%), being

unavailable outside the class (82%), poor teaching and communication skill (81), reluctant to answer questions and poor classroom management skill (77%), being unprepared for class (71%) and cancelling class without intimation (70%). Some differences in results between two studies may be due to different type of institutions and methodology(CM Clark, 2007).

In an Iranian study at a Nursing school, students expressed that wastage of class time and distraction, inadequate classroom management, humiliating, threatening and discriminating behaviour, poor assessment and inappropriate communication with students and colleagues were the most important themes. The findings of our work have similarities as well as differences compared to this study(Ildarabadi, Moharreri, & Moonaghi, 2015). In this study , discrimination and poor assessment by the faculty were the main themes while belittling and unavailability of teacher outside the class was found as disruptive behaviour by our students. This difference in the findings may be due to different questionnaire and methodology.

Exactly similar to our result, Kalantari et al, in their study found "humiliation of students" the most significant theme. Some other students' behaviours detected in that study were "mistrust, lack of praise after achievement, cold behaviour, use of inappropriate words, having a bad opinion of students, disrespect towards the field, and being unpunctual," some of which are in line with our work (Kalantari, Hekmatafshar, Jouybari, & Sanagoo, 2012).There are similarities among this work and many other similar studies. It shows that in spite of cultural differences, the expectations of students from their teachers are almost same around the globe.

To enhance the awareness regarding incivility and its mental and social effects, further detailed studies are essential. Community awareness about disruptive behaviour is necessary to ameliorate such behaviour which has negative impact on the academic learning environment. Preventive measures are vital to root out such behaviour from the learning academic environment which is prevalent in the in the institutions around the globe.

Limitation: Sample from single institution and small in number is a limitation of our study. Other limitations may be shortage of time to complete the questionnaire and personal understanding of the questions by the students.

Conclusion: About half of the student disagreed most of the potentially disruptive behaviour attributes regarding themselves. On the other hand, they have severe criticism on their teachers' disruptive behaviour. For healthy learning environment both students as well as teachers should realize and modify their behaviour to meliorate the critical problem

Table 1: Students' perception regarding their own disruptive behaviour

S#	Disruptive behavior	Agree	Disagree	X²
1	Using cell phone during class	30	63	0.002
2	Challenging authority in class	31	56	0.007
3	Demanding special privileges (treatment) from faculty members	44	47	0.753
4	Having an "I paid for this" mentality	36	54	0.057
5	Leaving the class before the teacher	21	74	0.000
6	Making offensive remarks/ gestures	32	60	0.003
7	Missing the deadline for work	39	50	0.243
8	Prolonged conversation that distract other students and teacher	41	52	0.254
9	Reading or studying non-related class material during lecture	37	55	0.06
10	Sleeping in class	48	50	0.839
11	Talking out of turn	36	53	0.071
12	Arriving late to class	34	60	0.007
13	Not paying attention in class	32	61	0.002
14	Acting bored or apathetic	33	56	0.014
15	Reluctance to answer questions in class	40	50	0.291
16	Using computer in class to surf the web/others	34	58	0.012
17	Questioning their instructor's knowledge	42	46	0.669
18	Cheating in class	37	61	0.002
19	Challenging the instructor's credibility	41	50	0.345
20	Do not keeping cell phone on silent mode during lecture	44	48	0.676

Table 2 Students' perception about disruptive behaviour of faculty

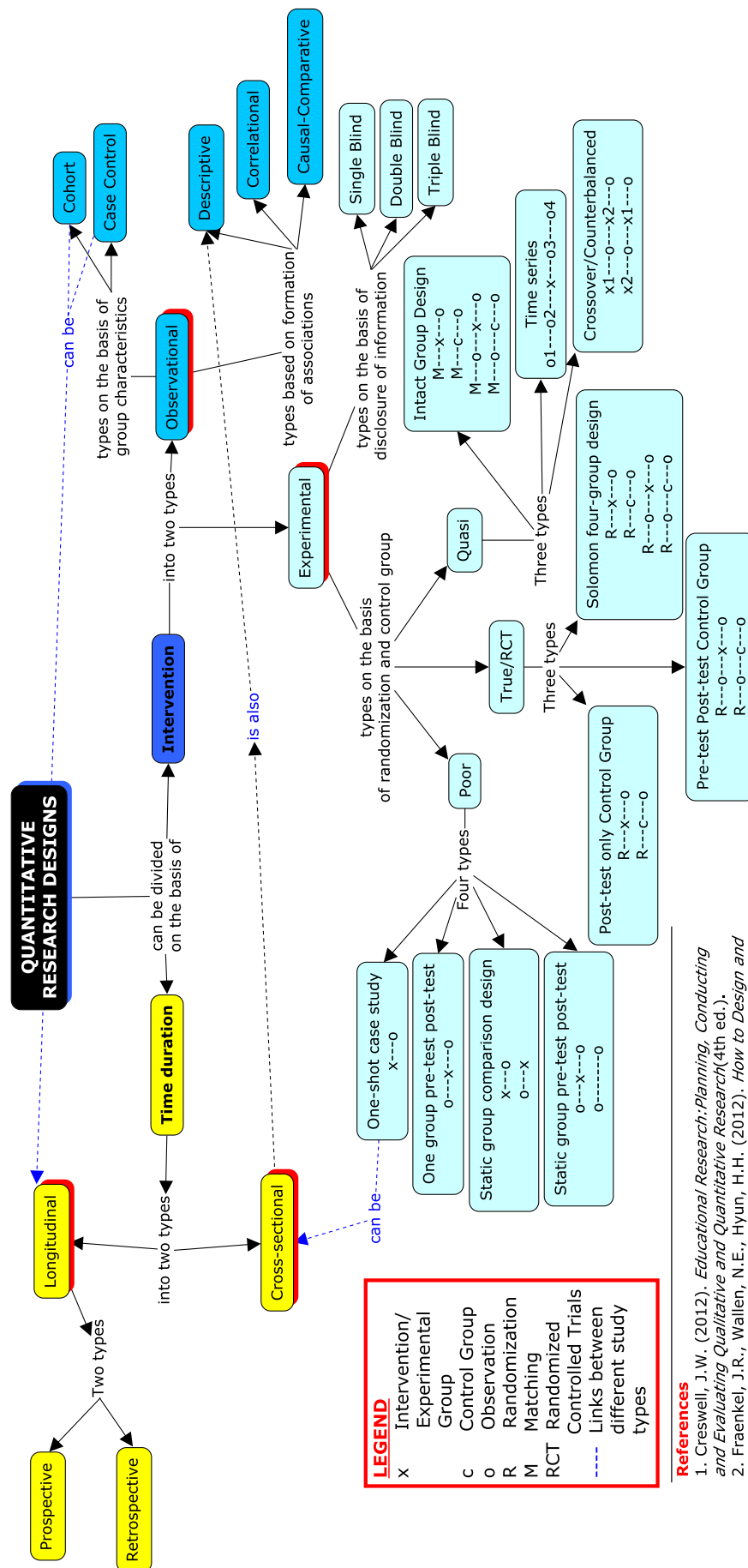| S#	Question	Gender	Serious Problem	Problem	I don't know	No Problem	P-Value
1	Belittling or taunting students through sarcasm, humiliation, intimidation.	Male	22	20	4	2	0.45
		Female	31	14	4	3	
2	Being distant or cold toward students	Male	9	17	6	16	0.002
		Female	24	20	4	4	
3	Being inflexible, being rigid, or punishing the class for one student's misbehavior	Male	8	22	4	14	0.22
		Female	15	30	1	6	
4	Being unavailable outside of class	Male	19	17	5	7	0.04
		Female	27	19	1	5	
5	Refusing or being reluctant to answer questions	Male	16	18	5	9	0.41
		Female	17	26	2	7	
6	Being unprepared for class	Male	15	14	4	15	0.04
		Female	13	29	3	7	
7	Making statements about being disinterested in the subject matter	Male	10	20	5	13	0.048
		Female	10	27	11	4	
8	Ignoring disruptive student behaviors	Male	16	16	6	10	0.04
		Female	16	29	1	6	
9	Not speaking clearly or not being understandable	Male	16	19	2	11	0.09
		Female	28	18	2	4	
10	Canceling class without warning	Male	11	20	0	17	0.417
		Female	16	23	1	12	
11	Delivering fast-paced, uninvolving lectures	Male	9	18	7	14	0.18
		Female	16	23	6	7	
12	Not allowing open discussion	Male	17	11	5	15	0.02
		Female	14	27	2	9	
13	Arriving late for class	Male	9	16	5	18	0.63
		Female	8	24	4	16	
14	Deviating from the course syllabus or changing assignments or test dates	Male	9	23	2	14	0.43
		Female	10	22	7	13	
15	Refusing to allow make-up examinations, extensions, or grade changes	Male	12	15	8	12	0.10
		Female	16	24	2	10	
16	Leaving class early	Male	8	14	7	19	0.139
		Female	7	10	3	32	
17	Move away from class topic	Male	11	18	2	17	0.385
		Female	7	16	4	25	

of disruptive behaviour in the academic environment.

References:

Ballard, R.W., & Hagan, J. (2015). Perceptions of uncivil student behavior in dental education. Journal of Dental Education, 79 (1), 38-46. http://www.jdentaled.org/content/79/1/38.short

Clark, C. (2008). Student perspectives on faculty incivility in nursing education: An application of the concept of rankism. Nursing Outlook, 56(1), 4–8. https://doi.org/10.1016/j.outlook.2007.08.003

Clark, C. (2007). Incivility in nursing education: A descriptive study of definitions and prevalence. J Nurs Educ, 46(1), 7-14.

Feldmann, L. J. (2001). Classroom Civility is Another of Our Instructor Responsibilities. College Teaching, 49(4), 137–140. https://doi.org/10.1080/87567555.2001.10844595

Hafeez, K., Khan, M. L. Z., Jawaid, M., & Haroon, S. (2013). Academic misconduct among students in Medical Colleges of Karachi, Pakistan. Pakistan Journal of Medical Sciences, 29(3). https://doi.org/10.12669/pjms.293.3300

Ho *, I. T. (2004). A comparison of Australian and Chinese teachers' attributions for student problem behaviors. Educational Psychology, 24(3), 375–391. https://doi.org/10.1080/0144341042000211706

Ildarabadi, M. R. E., Moharreri, F., & Moonaghi, H. K. (2015). A Study of Incivility in the Iranian Nursing Training System Based on Educators and Students ' Experiences : A Quantitative Content Analysis. Global J Health Sci, 7(2), 203–209. https://doi.org/10.5539/gjhs.v7n2p203

Johnson,Holly,L., Fullwood, & Harry, L. (2006). Disturbing behaviors in the secondary classroom: how do general educators perceive problem behaviors? Journal of Instructional Psychology, 33 (1) 20-39

Kalantari, S., Hekmatafshar, M., Jouybari, L., & Sanagoo, A. (2012). Workplace behaviors and its correlation with demographic characteristics: Perspective of nurses in teaching hospitals in Gorgan. Journal Of Health Promotion Managment (JHPM) 1 (4), 7-15.

Karimi Moonaghi, H., Rad, M., & Torkmannejad Sabzevari, M. (2014). Management of Challenging Behavior (Incivility) among Medical Students. Mashhad University of Medical Sciences, 4(1), 41–41. https://doi.org/10.22038/FMEJ.2014.2321

Lewis, R. (1999). Teachers Coping with the Stress of Classroom Discipline. Social Psychology of Education, 3(3), 155–171. https://doi.org/10.1023/A:1009627827937

Luparell, S. (2011). Incivility in nursing: the connection between academia and clinical settings. Critical Care Nurse, 31(2), 92–5. https://doi.org/10.4037/ccn2011171

Mabeba MZ, P. (2000). Perceptions of discipline and ensuing discipline problems in secondary education. South African Journal of Education, 20, 34–45.

Olender-Russo, L. (2009). Creating a Culture of Regard: An Antidote for Workplace Bullying. Creative Nursing, 15(2), 75–81. https://doi.org/10.1891/1078-4535.15.2.75

15. Robertson, J. E. (2012). Can't We All JUST GET ALONG? A Primer on Student Incivility in Nursing Education. Nursing Education Perspectives, 33(1), 21–26. https://doi.org/10.5480/1536-5026-33.1.21

Rowland, M. L., & Srisukho, K. (2009). Dental Students' and Faculty Members' Perceptions of Incivility in the Classroom. Journal of Dental Education, 73(1), 119–126.

Satyanrayana, D., Kulkarni, S., Doshi, D., Reddy, MP., Reddy, BS., & Srilatha, A.(2017) Perception of Uncivil Classroom Behavior Among the Faculty Members and the Students in an Indian Dental Institution. J Indian Assoc Public Health Dent, 15, 61-7. DOI: 10.4103/jiaphd.jiaphd_122_16

Shetty, A., Lagisetti, A.K., Bhat, R., Hedge, M.N., &Hedge, P. S. C. (2016). Perception of uncivil behavior in classroom and clinical environment in a dental college. Int J Inform Res Rev, 3, 2354–57.

Swick, H. M. (2000). Toward a Normative Definition of Medical Professionalism. Academic Medicine, 75(6), 612–616. https://doi.org/10.1097/00001888-200006000-00010

20. Wheldall, K., & Merrett, F. (1988). Which Classroom Behaviours do Primary School Teachers say they find most Troublesome? Educational Review, 40(1), 13–27. https://doi.org/10.1080/0013191880400102

Concept Map

Sabqat Mashaal[1], Rehan Ahmed Khan[2]

QUANTITATIVE RESEARCH DESIGNS

can be divided on the basis of

Time duration — into two types

- Longitudinal — Two types — Prospective, Retrospective
- Cross-sectional

Intervention — into two types

- Observational — types on the basis of group characteristics — Cohort, Case Control
- Observational — types based on formation of associations — Descriptive, Correlational, Causal-Comparative

is also — Descriptive

can be — Cohort (Longitudinal)

can be — Cross-sectional (One-shot case study)

Experimental

types on the basis of disclosure of information — Single Blind, Double Blind, Triple Blind

types on the basis of randomization and control group

- Quasi — Three types
  - Intact Group Design
    M---x---o
    M---c---o
    M---o---x---o
    M---o---c---o
  - Time series
    o1---o2---x---o3---o4
  - Crossover/Counterbalanced
    x1---o---x2---o
    x2---o---x1---o
- True/RCT — Three types
  - Solomon four-group design
    R---x---o
    R---c---o
    R---o---x---o
    R---o---c---o
  - Pre-test Post-test Control Group
    R---o---x---o
    R---o---c---o
  - Post-test only Control Group
    R---x---o
    R---c---o
- Poor — Four types
  - One-shot case study
    x---o
  - One group pre-test post-test
    o---x---o
  - Static group comparison design
    x---o
    o---x
  - Static group pre-test post-test
    o---x---o
    o-------o

LEGEND

- x — Intervention/ Experimental Group
- c — Control Group
- o — Observation
- R — Randomization
- M — Matching
- RCT — Randomized Controlled Trials
- ---- — Links between different study types

References

1. Creswell, J.W. (2012). *Educational Research:Planning, Conducting and Evaluating Qualitative and Quantitative Research*(4th ed.).

2. Fraenkel, J.R., Wallen, N.E., Hyun, H.H. (2012). *How to Design and Evaluate Research in Education* (8th ed.).

3. Ary, D., Jacobs, L.C., Irvine, S., Walker, D. (2018). *Introduction to Research in Education* (10th ed.).

1. Riphah International University
2. Department of surgery, Riphah International University

HEALTH PROFESSIONS EDUCATION JOURNAL GUIDELINES FOR AUTHORS

Health Professions Educator Journal (HPEJ) considers all manuscripts on the strict condition that they are the property (copyright) of the submitting author(s), have been submitted only to HPEJ, that they have not been published already, nor are they under consideration for publication, nor in press elsewhere. Authors who fail to adhere to this condition will be charged all costs which HPEJ incurs, and their papers will not be published. Copyright will be transferred to the journal HPEJ and Society of Medical Educationists (SOME), if the paper is accepted. HPEJ considers all manuscripts at the Editors' discretion; the Editors' decision is final.

Manuscript Submission

All submissions should be made online at Health Professions Educator Journal (HPEJ) website. New users must first create an account. Once a user is logged onto the site, submissions should be made via the Author Centre. For assistance with any aspect of the site, please refer to the Author Guide which is accessed via the 'Information' section at the top right side of every screen. A covering letter or email should be included indicating that the submission is made on behalf of all authors, although it is not necessary for each author to sign the letter. On receipt, the manuscript will be immediately acknowledged by email.

Manuscript Categories

Health Professions Educator Journal (HPEJ) invites the following types of submissions:

Articles

Articles are the primary presentation mode of communication in the Journal, and are usually between 2500–5000 words in length. All articles must include abstracts, practice points and notes on contributors (see below for further details).

Short Communications

Short communications are brief articles on matters of topical interest or work in progress, limited to two pages (maximum 1700 words) to include title page, notes on contributors, abstract, text, references and one small table (optional).

Letters to the Editor

Letters should be a maximum of 400 words in length, including title, text, name and address of author(s), and maximum two references. Tables and figures are not permitted.

Personal View

Personal View articles address a topic in the area of medical/healthcare professions education that is likely to be of interest to HPEJ readers. They present and reflect the author's personal experience or viewpoint relating to the topic.

Commentaries

Commentaries/editorials are usually invited but we welcome unsolicited submissions too. Editorials are meant to reflect the views of the author, while reflecting what has already been written on the topic.

Manuscript Preparation

Manuscripts submitted to HPEJ should be written in English and conform to the style guidelines set forth by APA, as per the most recent Publication Manual of the American Psychological Association (6th edition). Manuscripts should be typed using double-spacing (except tables which should be single-spaced), with margins of at least 2.5 cm (1 inch). All pages should be numbered.

Title page

The first page of the manuscript should contain the following information:

i.   The title of the paper
ii.   A short title not exceeding 45 characters for use as a running head
iii. Names of authors
iv.   Names of the institutions at which the research was conducted
v.   Name, address, telephone and fax number, and email address of corresponding author.

Abstract

All papers should be accompanied by an abstract of up to 200 words. The abstract should reflect the content of the paper including methods used, results, and conclusions drawn.

Text

This should in general, but not necessarily, be divided into sections with the headings: 'Introduction', 'Methods', 'Results', 'Discussion' and 'Conclusion'.

Practice Points

Up to 5 short bullet points which summarizes the key messages of the article should be included (not required for short communications). 'Practice Points' will be included in a box at the end of the article.

Notes on contributors

All articles should be accompanied by 'Notes on contributors', short biographical notes on each contributor to a maximum of 50 words per contributor.

Glossary terms

Papers submitted as articles should include 'Glossary terms', a definition of at least one term or concept that is a key feature of your paper.

References

References in the body of your article:

The APA in text reference is in the format (author, date). When directly quoting from a text you must include a page number in the citation as given in the examples below. Including page numbers in all other circumstances is not required however, it is best practice to do so when referring to part of a work (e.g. a paragraph or chapter in a book). When referring to an entire work that covers a single topic (e.g. a journal article) it is not required.

Citing a source within a source:

Where your source quotes or refers to another source, for example Unsworth refers to previous work by Halliday on linguistics, the citation might read thus:
(Halliday, 1987, cited in Unsworth, 2004, p. 15)
Only Unsworth will appear in the Reference list at the end of your article.

Reference list:

Your reference list should be ordered alphabetically by author and then chronologically by year of publication. The APA 6th style requires the references to be indented as illustrated below in the examples. If you have the DOI for the journal article, you should include it in the reference, otherwise, it is not necessary.

Book:

Lumby, J. (2001). Who cares? The changing health care system. Sydney, Australia: Allen & Unwin.

Book chapter:

McKenzie, H., Boughton, M., Hayes, L., & Forsyth, S. (2008). Explaining the complexities and value of nursing practice and knowledge. In I. Morley & M. Crouch (Eds.), Knowledge as value: Illumination through critical prisms (pp. 209-224). Amsterdam, Netherlands: Rodopi.

Journal article:

Boughton, M., & Halliday, L. (2008). A challenge to the menopause stereotype: Young Australian women's reflections of 'being diagnosed' as menopausal. Health & Social Care in the Community, 16(6), 565-572. doi: 10.1111/j.1365-2524.2008.00777.x

Webpage with an author:

Welch, N. (2000, February 21). Toward an understanding of the determinants of rural health. Retrieved from http://www.ruralhealth.org.au/welch.htm

Illustrations and tables

Illustrations and tables should not be inserted in the appropriate place in the text but should be included at the end of the paper, each on a separate page. Tables should be given Arabic numbers (e.g. Table 3), and their desired position in the text should be indicated. Tables should be used only when they can present information more efficiently than running text. Care should be taken to avoid any arrangement that unduly increases the depth of a table, and the column heads should be made as brief as possible, using abbreviations liberally. Lines of data should not be numbered nor run numbers given unless those numbers are needed for reference in the text. Columns should not contain only one or two entries, nor should the same entry be repeated numerous times consecutively. Units should appear in parentheses in the column heading but not in the body of the table. Words or numerals should be repeated on successive lines; 'ditto' or 'do' should not be used. Tables should be typed using single-spacing. All photographs, graphs and diagrams should be referred to as Figures and should be numbered consecutively in the text in Arabic numerals (e.g. Figure 3). A list of captions for the figures should be submitted on a separate sheet (or where figures are uploaded as separate files, captions can be entered during the electronic submission process) and should make interpretation possible without reference to the text. Captions should include keys to symbols. Avoid the use of color and tints for purely aesthetic reasons. Figures should be produced as near to the finished size as possible. All files must be 300 dpi or higher. Please note that it is in the author's interest to provide the highest quality figure format possible.

Acknowledgments and Declaration of Interest sections

Acknowledgments and Declaration of interest sections are different, and each has a specific purpose. The Acknowledgments section details special thanks, personal assistance, and dedications. Contributions from individuals who do not qualify for authorship should also be acknowledged here. Declarations of interest, however, refer to statements of financial support and/or statements of potential conflict of interest. Within this section also belongs disclosure of scientific writing assistance (use of an agency or agency/ freelance writer), grant support and numbers, and statements of employment, if applicable.

Acknowledgments section: Any acknowledgments authors wish to make should be included in a separate headed section at the end of the manuscript preceding any appendices, and before the references section. Please do not incorporate acknowledgments into notes or biographical notes.

Declaration of Interest section: All declarations of interest must be outlined under the subheading "Declaration of interest". If authors have no declarations of interest to report, this must be explicitly stated. The suggested, but not mandatory, wording in such an instance is: The authors report no declarations of interest.

Additional Information Upon Acceptance

Electronic proofs: When proofs are ready, corresponding authors will receive email notification with a password and Web address from which to download a PDF. Hard copies of proofs will not be mailed. To avoid delays in publication, corrections to proofs must be returned within 48 hours, by electronic transmittal, or mail.

Offprints and reprints: Offprints and reprints of articles published in HPEJ can be obtained through hpej. net. Please visit hpej.net to obtain a quotation or to place an order.

Copies of the Journal can be purchased at the author's preferential rate of Rs: 4000 per copy.

THE UNIVERSITY OF LAHORE

HPEJ

HEALTH PROFESSIONS EDUCATOR-JOURNAL

The University Of Lahore, Lahore, Pakistan

http.//hpej.net

LETTER OF AUTHORSHIP

Dear Editor in Chief:

This is to confirm that the manuscript titled _____

Submitted for publication in Health Professions Educator-Journal of University College of Medicine and Dentistry has been read and approved by all authors. We, the authors, confirm that:

- The article has not been published in any other journal;
- It is being submitted exclusively to Health Professions Educator-Journal of University College of Medicine and Dentistry; and
- If accepted for publication, it will not be published in any other national or international journal.

We transfer the copyrights of this manuscript to the Health Professions Educator-Journal of University College of Medicine and Dentistry, University Of Lahore. We have disclosed the conflict of interest, funding sources and ethical permission.

Sr. No.	Author's Full Name with Designation & institution	Contributions to the Paper (Please Give Brief Description of the Role of each Author Separately)	Authors Signature
1			
2			
3			
4			
5			
6			
7			

(Please use extra sheet in case of more than seven authors)
Electronic signatures will be considered valid for all articles submitted
using the online article submission services.

2ⁿᵈ INTERNATIONAL CONFERENCE ON HEALTH PROFESSIONS EDUCATION

Theme
Emerging Trends in HPE in 21ˢᵗ Century

ICHPE-2018
ORAL PRESENTATION ABSTRACTS

ORAL PAPER PRESENTATIONS

PAPER SESSION 1			TUESDAY, 16th OCTOBER 2018	8:30 10:00 AM
BOG Boardroom 8:30 10:00am	Curriculum	1	Four Legged Chair: Dental students Qualitative perception about teaching faculty, Administration and Academic Environment at University college of Dentistry University Of Lahore.	Sohaib
		2	Problem Based Learning: Experience Of Medical Students	Asma Afaq
		3	Perception of the 2nd year MBBS students about the content, structure and teaching of the head and neck module in an integrated curriculum	Humaira Gulnaz
BOG Boardroom 8:30-10:00am	Assessment	4	Assessment is a good motivator to acquire knowledge and skills in Dentistry	Khalud Daar
		5	Effect Of Paired Formative Assessment On Students' Learning	Nighat Qamar
		6	Cultural Competency in Health Care: Evaluation of Cognition and training of Cultural Competency among Physicians in Public Sector Health Facilities	Saira Afzal
		7	Evaluation of Mentoring Skills by Mentees using the Mentoring Competency Assessment (MCA) Instrument at an Undergraduate Medical School in Lahore	Fatima Zia Zaidi
		8	Quality Of Mcq's Developed By The Faculty Of Public Sector Medical College	Zafar Iqbal
		9	Perception of Medical students regarding educational environment in Sheikh Zayed Medical College Rahim Yar Khan; A cross-sectional survey using the Dundee Ready Education Environment Measure (DREEM) questionnaire"	Shumaila Irum

PAPER SESSION 2			TUESDAY, 16th OCTOBER 2018		8:30-10:00 AM
BOG Side Boardroom	Faculty Development	10	A Realist review: Impact of Interactive Lecturing Workshop as an act of Faculty Development Program on lecturing skills of faculty members		Khadija Mukhtar
		11	Impact of IPE workshop on the team performance of health professionals working in cardiac catheterization laboratory		Badar Gill
		12	Challenges in faculty development in private medical colleges		Qundeel Zahra
BOG Boardroom 8:30-10:00 AM	Assessment	13	Medical Students' Perceptions of the Educational Environment in the Surgical Theater		Rizwan Kamran
		14	Disruptive Behavior in Classroom – Medical Students' Perception		Shumaila Zia
		15	Correlation Between Strength of Motivation and Academic Performance among the Dental Students of University College of Medicine and Dentistry, Lahore.		Arooj Zafar
		16	Students Perception about Problem based learning Problems and Quality of Problem based learning		Fatima Sarwar
		17	The impact of regular breakfast intake on cognitive performance and emotional status of adolescent Saudi Arabian Medical students		Amrah Javed
		18	Stress and Coping Strategies among Medical Students. A Cross Sectional Study from a Private Medical College in Lahore.		Saman Chaudhry
QEC Boardroom 8:30 10:00 am		19	To explore the effect of pre-exam stress levels of final year medical students on their academic performance.		Uzma Kausar
		20	Problems faced by students enrolled in blended programs of Masters in Health Professions Education.		Noorikiran Haris
		21	Level of Exam Anxiety in students of a Private Sector Medical College Pakistan		Farah Rehman
BOG Side Boardroom	Faculty Development	22	Students' Perceptions about Increased Failures in the Subject of Anatomy at a Private Medical College in Lahore, Pakistan		Shaukat Ali Sayal
		23	Should Counselling Be Mandatory For Undergraduate Dental Students?		Arooj ul Hassan
		24	Knowledge, Attitude and Practices regarding Obesity among Medical Students in Faisalabad, Pakistan		Rameen Shahid
BOG Boardroom 8:30-10:00 AM	Assessment	25	Knowledge and Attitude of Undergraduate Medical Students Regarding Research Work		Taimoor Ashraf Khan

PAPER SESSION 3				TUESDAY, 16th OCTOBER 2018	2:30 - 4:30 PM
BOG Boardroom			26	Academic satisfaction of students in undergraduate nursing program: Study from public and private institutes of Islamabad	Gideon Victor
			27	Going beyond your form -Learning experience of Masters in health professional education in Pakistan - A qualitative study of student's perspective	Saima Rafique
			28	Exploring needs of medical students for co-curricular and extracurricular activities in a public sector medical university	M.Daood
			29	Interest of undergraduate students towards research in a private medical college of Lahore, Pakistan.	Rabia Khurram
			30	The Stressors of MBBS students in a private medical college	Attiya Rasheed
			31	Endodontic teaching at a pre-clinical and clinical level in Punjab and Khyber-Pakhtunkhwa to undergraduate dental students	Alia Ahmad
BOG Boardroom 2:30-4:30		Leadership	32	Comparison of Medical Leadership Competencies of Doctors on Induction and on Completion of Postgraduate Training in Pediatrics and Pediatric Surgery	M.Saleem
BOG Boardroom 2:30-4:30		Research	33	Reliability of research	Ishaque Khalid

PAPER SESSION 5				TUESDAY, 16th OCTOBER 2018	2:30-4:30 PM
BOG Side room		Teaching and Learning	34	Insight Of Third Year Medical Students Regarding Teaching Methodology	Asif Masood Butt
			35	Role of WhatsApp in Linking the Orthopedic and Allied Department for Updates, Engagement and Education	Syed Faraz ul Hasan Shah
			36	Does reflection writing effects the knowledge, attitude and skills of house officers?	Ahmad Liaquat
			37	Preference of teaching methods by the medical students of Saudi Arabia	Sumera Nisar
			38	Evolving Role of Social Networking Sites in Undergraduate Surgical Education: Student Perspective	Talat Waseem
			39	Effectiveness of Flipped classroom with Gamification approach for teaching anatomy to medical students	Kainat Javed
			40	Comparison of Computer Literacy in Students and Faculty of CMH LahWore Medical and Dental College	Anwar ul Haq
			41	Replacement of concepts developed during health professions education	Ambreen Usmani

PAPER SESSION 6			TUESDAY, 16th OCTOBER 2018	2:30-4:30 PM
QEC boardroom	Policies/Regulation/Miscellaneous	42	Re-licensure and Recertification of PMDC certificate: Views from Basic Science Faculty at K.E.M.U.	Abish Mehreen
		43	Special education system in Pakistan (review article)	Ume-e-Aiman Chhipa
		44	Status of the Departments of Medical Education in the Medical Colleges of Lahore	Muhammad Zahid Latif
		45	Evaluation of the Impact of MARSI on Assessment Scores among Medical Undergraduates with English as L2: An Interventional Study.	Muhammad Ammar Qasim
		38	Evolving Role of Social Networking Sites in Undergraduate Surgical Education: Student Perspective	Talat Waseem
		46	Knowledge, skill & attitude among fresh dental graduates about orthodontics.	Shan zohra
Patient safety		47	Learning to cure with care: awareness of faculty and medical students about students' roles related to patient safety	Ayesha Ayyub
		48	Patient Safety Awareness Among Postgraduate Students and Nurses in A Tertiary Health Care Facility	Attiya Bari
		49	"Quality is not an act, it is a habit" – Aristotle… survey of human factors and patient safety in operation theaters of a peripheral teaching hospital	Sajid Aziz
		50	Analysis Of Compliance Of Surgical Safety Protocols In Operating Rooms Of Tertiary Care Hospitals Of Lahore	Javeria Usman
		51	Perception of patient safety among Final year MBBS students at King Edward Medical University Lahore.	Nasir Ahmad
		52	Patient safety awareness among Undergraduate Medical Students in Pakistani Medical School	Rizwana Kamran

PAPER SESSION 7			WEDNESDAY, 17th OCTOBER 2018		11:00-12:30 PM
BOG Board room	Postgraduate trainees	53	Perception of Central Induction Policy among trainees of Punjab		Maliha Nadeem
		54	A Study on Postgraduate Trainees Attitudes towards Research		Remsha Mustafa
		55	Educational Environment; Perception Of Junior Doctors Using Pheemwww Questionnaire At Social Security Hospital/Ucm, University Of Lahore		Sibtain Raza
		56	Burnout among Pediatric Residents and Junior Pediatric Consultants Working at a Tertiary Care Hospital		Attia Bari
		57	Burnout in Postgraduate Dental students of Basic Dental Sciences		Sarah Ghafoor
		58	Post graduate perception of stress levels, educational environment and their association at Liaquat University Hospital, Hyderabad/Jamshoro		Aatir Rajput
		59	Perception of Plastic Surgery residents about concept, process and application of reflective practice in their training		M.Mustehsan
		60	"On Toes": Designing An Epa Framework On "Teamwork In Obstetric Emergency Situations (Toes)" For Postgraduate Residents-A Modified Delphi Study		Saima
		61	Burnout in Gynecology Residents---- A Myth or Reality		Syeda Shaista Waheed

PAPER SESSION 8			WEDNESDAY, 17th OCTOBER 2018		11:00- 12:30 PM
BOG Side Boardroom 11:00-12:30 pm	Professionalism	62	Medical students' perception and involvement in academic dishonesty: A cross-sectional study in Lahore, Pakistan		Fatima Aslam
		63	Doctors' experiences and awareness of non-technical skills, a way to the development of a behavioral marker system for patient management		Nighat Majeed
		64	Attitude Of Hospital Faculty Towards Collaborative Practice		M.Tauqeer Ahsan
		65	Octopus skill model of a medical professional		Qanita Mahmud
		66	Emotional Intelligence of Medical Teachers		Zareena Akram
		67	Patients' Attitudes towards Presence of Medical Students during Ultrasonography		Faiza Farooq
		68	The insulting behavior of seniors toward their junior's doctors		Sobia Nawaz
	Career Counselling	69	NEUROLOGY-The Mcdreamy mania or a choice of sane minds		Neha

PAPER SESSION 9			WEDNESDAY, 17th OCTOBER 2018		11:00-12:30 PM
QEC Board room 11:00-12:30 pm	Healthcare	70	Intention & knowledge of fresh dental graduates of FMH College of dentistry Lahore related to dental practice management	M.Imtiaz
		71	Improving work force in health sector: A survey on motivation of medical graduates and residents on willingness to practice in rural community	Fauzia But
		72	THE CHANGING TRENDS OF DENGUE FEVER CONSECUTIVE OUTBREAKS IN A TERTIARY CARE HOSPITAL	Nadia Shams
		73	Proportion of Exposure of Passive Smoking in Teenage Group and Symptoms Precipitated After Exposure to Second Hand Smoke	Rabia Khalid
		74	Building the first Primary Immune Deficiency Diseases Institute in Pakistan	Farruk R Shiekh
		75	PERCEPTIONS OF THE STRABISMUS AMONG THE AGE OF 11-16 YEARS OLD SCHOOL CHILDREN	M.Idris
		76	EFFECT OF ESTROGEN RECEPTOR ALPHA GENES VARIANTS ON SEVERITY OF BREAST CANCER	Faisal Gulzar
		77	Level of stress in students of a private medical college in Lahore, Pakistan.	Syed Hussain Raza Zaidi
		78	GESTATIONAL DIABETES MELLITUS IS STILL A GREAT PROBLEM	Afsheen Qazi
		79	MUTATIONAL SPECTRUM OF CYP1B1 IN PAKISTANI FAMILIES AFFECTED WITH PRIMARY CONGENITAL GLAUCOMA	Muhammad umer khan
		80	Proportion of Exposure of Passive Smoking in Teenage Group and Symptoms Precipitated After Exposure to Second Hand Smoke	Rabia Khalid
		81	Patient's Perception Analysis; A Tool to Enhance Service Quality of Dental Care	Aqsa Javed
		82	Predatory Journals and bogus Publications! Academic scams of the 21st century	Farooq Azam Rathore
		83	Four Legged Chair: Dental students Qualitative perception about teaching faculty, Administration and Academic Environment at University college of Dentistry University Of Lahore.	Muhammad Sohaib Nawaz

1. Title: Non-Operative Technical Skills for Surgeons (NOTSS): Reshaping surgical curricula in developing countries – A systemic review and meta-analysis

Introduction: Non-technical surgical skills are the new development in UK as a part of competency based training scheme. This non-technical skills system is constructed on cognitive and interpersonal skills taxonomy to assess four core categories including situation awareness, decision making, communication and teamwork, and leadership in operating theater. We aim to conduct systematic review of non-operative technical skills for surgeons to assess applicability in developing countries.

Methodology: The following search databases were used: EMBASE, MEDLINE, Web of Science, Google scholar, Biomed Central, and Cochrane review register. Mesh terms were combined to select studies. Meta-analysis was performed on four skills categories and twelve elements that make up skills taxonomy using Revman 5.2 statistical software.

Results: This review attempted to identify all four core categories of non-technical skills from 32 articles including assessment literature, observational studies and questionnaire studies to institute whether there was a valid and reliable taxonomy available for the assessment of surgeons' non-technical skills in developing countries. Inviolable propinquity was evident between cognitive and interpersonal skills in the research literature but certain non-technical particulars of performance can enhance technical performance of surgeons.

Conclusion: Implementation of non-technical skills for surgeon (NOTSS) system is appropriate and can be intended for improving surgical training with a novel strategy for surgical safety in theater environment. NOTSS system is a gadget that pledge to provide a surgical training tool without additional financial burden to improve patient safety and outcomes in developing countries.

2. Title: Problem Based Learning: Experience Of Medical Students

Introduction: To evaluate experience of medical students regarding PBL in hybrid integrated curriculum.

Method: This descriptive cross sectional study was conducted in May 2018 to June 2018 at two different medical colleges, the University College of Medicine and Dentistry, University of Lahore and Shalimar Medical and Dental College Lahore, The targeted population was 1st year and 2nd year MBBS students. Sample size was 188 students of 1st year and 2nd year MBBS of the University College of Medicine and Dentistry (institute 1) and 110 students of 1st and 2nd year of Shalimar medical and dental college (Institute 2). A pre validated questionnaire was distributed among students who were asked to record their experience regarding PBL using a 5-point's Likert scale. Data was analyzed by using non-parametric statistics. The total mean score <3 indicating bad experience of students, while >3 indicates good experience of students about PBL.

Results: Out of 298 study subjects, all responded. Of the total, 188 participants were of institute 1 and 110 were of institute 2 students. Of them, 205(68.79%) were female. Results showed that students of both institutes found several key benefits of PBL acquiring critical thinking, problem solving and communication skills, working and studying in small groups, Small group and PBL as better learning opportunity than lectures but institute 1 mean score <3.0 showed their un satisfaction about their tutor performance in PBL conduction, while P value is statistically significant (0.048) when compared between two institutes regarding tutor practice only.

Conclusion: This study reveals that medical students of both institutes consider PBL as valuable and favorable learning methodology and also highlighted the significant role of PBL in hybrid curriculum which helped the students to feel, is there any improvement in their different learning skills, to judge their capability to interact among peers in group, helps in identification of their learning preference as small group discussions and helps to access their tutor performance during PBL conduction. Institute 1 students reported that they are not satisfied with their tutor performance .The investigator strongly recommend that tutor and student training should be mandatory before introducing PBL. PBL session marks should be included in internal assessment and only senior faculty and voluntary participants will conduct PBL sessions.

3. Title: Perception Of The 2Nd Year Mbbs Students About The Content, Structure And Teaching Of The Head And Neck Module In An Integrated Curriculum

Introduction: Our College has developed and implemented integrated curriculum with an aim to enhance learning by using different teaching methodologies. An integrated, theme based module of head and neck module was developed and implemented. This study was designed to evaluate the perception of students about content, structure and teaching of head and neck module.

Methodology: A survey questionnaire was used to evaluate the perception of students about the content, structure and teaching of the module. Survey questionnaire was developed on qualtrics software and distributed via social media (WhatsApp).

Results: 88.18% of the students agree that learning outcomes of the module were clearly stated and 69.09% of the students felt that they were achieved fully. Module's subjects were covered in breadth and depth in the opinion of 44.54% of the students. Majority of the students were of opinion that module was well structured and helped them to build their knowledge. The number of students agreed and disagreed was equal as far as adequacy of duration of the module was concerned. The majority (48.18%) of students disagree that module was well organized and 52.73% disagree that workload of the module was manageable. 69.64% students felt that objectives of the module were explained well and 67.86% of opinion that they were encouraged to participate in class discussions. Lectures of the module were well planned and presented in the opinion of 65.77% of the students and tutorials were organized in the view of 61.82% of the students. Different teaching methodologies helped the students in achieving course objectives in the opinion of 63.06% and 45.04% felt that the ratio was appropriate between different teaching methodologies. The ideas and concepts were presented clearly in the perception of 61.61% of the students.

Conclusion: Majority of the students graded the content, structure and teaching of the module as good. But some of the areas are highlighted which need improvement for example: students felt that module was not well organized and its workload was not manageable.

4. Title: Assessment Is A Good Motivator To Acquire Knowledge And Skills In Dentistry

Introduction: The current methodology of dental teaching in Pakistan follows the traditional methods. The University of Lahore (UOL) is currently implementing the integrated system into its curriculum. This study aims to compare the development of clinical skills and knowledge of 3rd year dental undergraduate students studying the integrated system and traditional teaching methodology.

Methodology: Freshly promoted 3rd year BDS students on integrated system and freshly promoted final year BDS students on traditionally taught curriculum were selected each comprising of 70 students of University College of Dentistry, UOL. A questionnaire was formulated based on skills identified from the PMDC approved curriculum for the students. The questionnaire included 11 questions containing information regarding various clinical skills to self-evaluate the psychomotor skills based on psychomotor domain taxonomies by Simpson (1972), Dave (1970) and Harrow (1972). Descriptive statistics were calculated using Microsoft excel 2013.

Results: Out of 140 students 108 students responded back. Dental procedures that the students were the most confident were; in history taking (72% 3rd year and 83 % 4th year), classification of caries (83 % 3rd year and 73 % 4thyear) and Kennedy's classification (88 % 3rd year and 69 % 4th) year. Students were least confident in the management of medical emergencies (1.6% % 3rd year and 21 % 4th year).

Conclusion: There was a clear cut demarcation of enhanced skill level of students taught by modular integrated system, however some of the skills in patient management, the students following traditional teaching methods showed better skills because of their longer experience to patient handling.

5. Title: Effect Of Paired Formative Assessment On Students' Learning

Introduction: Formative assessment is a potentially transformative instructional tool that aims to support learning and effectively engages teachers and students during instruction in continuous and systematic approach for the improvement of students. There is a strong and rigorous evidence that effective use of formative assessment can raise the pupil's performance. The emergent interest of institutions to make students autonomous and lifelong learner has stimulated them to re-consider the association between learning and its assessment. Despite the effectiveness of formative assessment there is a gap between theory and practical implications of formative assessment. Emerging problem is that formative assessment is being reduced to regular class assessments.

Methodology: It was a quantitative, true experimental study. The accessible population for the study were two hundred students who attended ENT module in Islamic International Medical College.

Student achievement in two multiple choice question papers were used to study the effect of the paired formative assessment in the experimental group, in comparison to the individual formative assessment in a control group. Marks obtained in Pre-test and Post-test were the basis of measuring the performance of students. Both groups were compared using Independent sample t-test.

Results: Out of 160 participants, 94 (58.7%) were female and 66 (41.3%) were male. 80 students (50%) were selected from the 3rd year and 80 students (50%) from 4th year. 80 (50%) were allocated to experimental group and 80 (50%) were allocated to control group. In pre-test, both groups' i.e. experimental and control group solved paper individually. In individual phase, the pre-test results showed mean 8.26, median 8.50 and mode 9 for experimental group and mean 7.76, median 8 and mode 9 for control group.

 Post-test paper 2 descriptive analysis results showed mean of 14.43, median 15, mode 15 and variance 7.84 or experimental group. Testing hypothesis for paired formative assessment, I used unpaired two tailed t test and found 95% confidence interval. P -value was 0.061 for post-test (paper 1) marks and 0.092 for post-test (paper 2) marks, which is greater than α=0.05 (statistically significant).

Conclusion: This study evaluated the effectiveness of paired formative assessment in improving students' academic performance. Both the individual and paired formative assessment showed net positive learning improvements but the students in pairs achieved a relatively greater gains in their scores and the difference was significant statistically.

6. Title: Cultural Competency in Health Care: Evaluation of Cognition and training of Cultural Competency among Physicians in Public Sector Health Facilities

Introduction: Culture is defined as learned beliefs and behaviors which are shared by group of peoples. It includes values, customs, role, relationship, thoughts, language and ways of communicating practiced and shared among themselves. Competency is the ability to do a job efficiently within the context of the cultural beliefs, behaviors, and needs of clients. Cultural competency in health care implies that health care providers have ability and availability to understand and work effectively with the patients belonging to different cultural background than one's own. Understanding the beliefs and values of different culture are as important as biomedical approach to treatment, failing which may result in misdiagnosis or noncompliance with the treatment.

Methodology: A qualitative constructivism phenomenology study was carried out. The semi structured open ended cultural competency questionnaire and semi structured interview was designed on the basis of guidelines by Oregon medical board (Oregon Medical Board; June, 2017) and National Health and Medical Research Council, Australia (2005)encompassing all constructs of cultural competence.

This study was carried out in diverse cultural settings and all three levels of health care system were approached. Primary level consisted of Rural Health Centre at Kala Shah Kaku that is 30 bedded health care center and more than 100,000 registered population. Secondary health care level included DHQ Hospital Sheikhupura.

Results: The cultural competencies among physicians were evaluated either satisfactory or unsatisfactory on the basis of the interviews and self-reported evaluation by physicians. The evaluation of understanding of cultural competency among physicians had shown the satisfactory results. Understanding was further divided into importance of cultural competencies to handle situations during medical practice and concepts of cultural competencies on semi structured interview based questionnaire.

Conclusion: Physicians are trained in medical colleges to deliver best medical care according to scientific standards but their training in cultural competencies, soft sciences and art of healing is not being evaluated at health facilities and practical settings. Thus there is dire need to conduct research studies to explore the phenomenon and to realize the deficiencies in training regarding cultural competencies.

7. Title: Evaluation of Mentoring Skills by Mentees using the Mentoring Competency Assessment (MCA) Instrument at an Undergraduate Medical School in Lahore

Introduction: Mentoring, a committed relationship has established its significance in the field of undergraduate medical education. Mentors invest in their protégés' personal and professional development, beyond the realm of teaching. The mentors and the organization also gain a multitude of benefits. Formal mentoring is considered to have more advantages.

Recruiting mentors should be thoughtful and mentors should be trained for their job. The assessment of mentor's competence remains a challenge and many instruments have been tried for this purpose. Evaluation can help identify areas for training. The Mentoring Competence Assessment inventory developed by Fleming et al. focused on measuring six main competencies of a mentor-mentee relationship. Since these competencies overlap with the objectives of more general mentoring programs, this tool can be adapted to measure outcomes.

Methodology: A cross sectional study was conducted at The University of Lahore. The Mentoring Competence Assessment instrument was used with appropriate modification. Volunteers filled in an online questionnaire. 129 students responded, out of which 97 completed responses were considered. Response scores were added to calculate score for each competency. Correlational analysis was performed for competence and seniority. Cross gender mentoring was also compared to same gender mentoring.

Results: The high scoring competencies in the order of ratings they attained are: maintaining effective communication, fostering independence, promoting professional development and aligning expectations, whereas assessing understanding and addressing diversity were rated at less than fifty percent, indicating areas for faculty development training. Almost 80% students rated high on how much they had benefited from their mentor. They also felt their mentor helped them the most by motivating them, by being a good listener and by guiding them. Mentees believed their mentoring relationship was uncomfortable due to group mentoring, seniority bias, and lack of time. The mentor's gender had no significant effect on all the six competencies.

Conclusion: Mentoring is a mutually beneficial relationship and is most beneficial when started at an early stage. The mentoring program should be relevant to local perspectives and cultural issues. To prevent misunderstandings, mentors should acknowledge the differences of gender & cultural background. Mentors should be monetarily rewarded for their contribution to medical education. Educating & empowering students, along with faculty education regarding students' needs may improve mentoring.

8. Title: Re-licensure and Recertification of PMDC certificate: Views from Basic Science Faculty at K.E.M.U.

Introduction: Doctors upon graduation have a greater responsibility of reassessing their knowledge, demonstrating specific skills and showing a positive attitude towards patients. In Pakistan, once a doctor graduates from a medical school, he is given a license to practice for life. There are numerous studies which provide evidence that re-licensure is the primary mode of maintaining competencies and modes of assessing performance in the clinical setup (S. A. Ali et al., 2018).Similar research in basic medical sciences faculty is scarce. (Southgate et al., n.d.)(Greenhalgh & Wong, 2011a)(W. D.-B. B. M. Journal & 1999, n.d.) (C. du B.-B. B. M. Journal & 2000, n.d.) . This study was designed to understand the perceptions and attitudes of faculty of basic sciences regarding re-licensure of PMDC certificate.

Methodology: Site: King Edward Medical University Lahore Sample size: Sample size was calculated as 108 (95% level of confidence and 5% margin of error) and 55.5% proportion of population knowing about re-licensure Sampling technique ,Simple Random Sampling: Inclusion and exclusion criteria

108 Doctors working King Edward Medical University Lahore in various Basic Medical Sciences departments

All doctors from BPS-17 – BPS 21 were included.

There was no exclusion criteria

Data collection technique ,Questionnaire

Results: Out of 108 respondents 49 (45.37%) were males and 59 (54.63%) were females. The mean age of respondents was 33 years with minimum age of 23 and maximum of 60 years (SD= 9.24). 58 respondents (53.7%) had less than 5 years of teaching experience, 32 respondents (29.6%) had teaching experience between 5-10 years and 18 respondents (16.6%) had teaching experience more than 10 years. When enquired if they thought that there existed a need for relicensure, 64 respondents (59.25%) thought that there exists a need for relicensure of PMDC and 44respondent (40.74%) said that there exists no need for Relicensure.Majority agreed that relicensure should be made mandatory and that PMDC should carry out relicensure and

CME hours should be the mode of relicensure.

Conclusion: We conclude that Doctors from basic sciences faculty at King Edward Medical University express a unanimous need for re-licensure of PMDC. However a difference of opinion exists on issue of Mandatory versus Voluntary professional development (70.37% VS. 29.63%) The process of re-certification and re-licensing of PMDC certificate is well known to all medical professionals, who generally acknowledge its practicality.

9.Title: Four-Legged Chair: Dental Student's Qualitative perception about teaching faculty, Administration and Academic Environment at University college of Dentistry University Of Lahore.

Introduction: Education system in a dental institute is a four legged chair: The teaching faculty, the administration, the academic Environment and The students. Students are the end buyers of Dental education so the dental education system should also incorporate the perspective of students with respect to other 3 parameters. The present study was motivated to focus on the qualitative aspects of student's perspective on the other three main parameters in university college of Dentistry (UCD) University of Lahore (UOL).

Method: A qualitative survey with open ended questions was done in final year BDS class of 2018 in UCD UOL. The questionnaire was distributed to all the class, Strength of 75. 55 questionnaires were received back and one of them was completely empty.

Results: The data was stratified with respect to larger fields and smaller areas and sub areas identified by the students. The students were able to pint out as many as 5 and as less as 2 areas and sub areas in already given fields. They highlighted various issues which can change the strategy of dental institute and improve overall education system.

10. Title: A Realist Review: Impact Of Interactive Lecturing Workshop As An Act Of Faculty Development Program On Lecturing Skills Of Faculty Members

Introduction: Background: Health care providers and medical teacher been provided by the teaching methodologies to improve their teaching effectiveness. Many studies reflect interventions on faculty development program. Interactive lecturing workshop as a part of faculty development program also been evaluated.

Objective: The main objective of this paper is synthesis of evidence of review question 'What is the impact of interactive lecturing workshop as an act of FDP on improving lecturing skills of the teachers?'

Methodology: Methods: We search for the articles from four main databases i.e. ERIC, PubMed, Google scholar and PsycINFO. Key word we used for this purpose is Faculty Development Program, Interactive Lecturing, and Impact of interactive lecturing workshops. This article focuses on the improvement of faculty lecturing skills. By applying inclusion and exclusion criteria seven articles have been selected for the review purpose.

Results: Results: Most of the studies shows that any intervention regarding interactive lecturing workshop has positive impact on faculty members' lecturing skills.

Conclusion: Conclusion: Interactive lecturing workshops met the demand of faculty development process. This activity highly appreciated by the participants and these workshops has positive effect on faculty members as well as student enjoy more in the environment of interactive lecturing. But its effectiveness on organizational level need to be evaluated.

11. Title: Impact Of Ipe Workshop On The Team Performance Of Health Professionals Working In Cardiac Catheterization Laboratory

Introduction: With the modernization and advances in the medical sciences many subspecialties have emerged for the treatment of a single illness. This result in the fragmentation of care and thus many professionals from different specialties are involved simultaneously for the treatment of a patient. This becomes particularly important for the patients who need complex care from multiple disciplines. ("Impact of Interprofessional Education on Collaboration Attitudes, Skills, and Behavior among Primary Care," 2012). Involvement of multiple disciplines working at a same time for one patient has evolved the concept of Interprofessional practice. It is the synergistic model of patient care that enabled professionals from

different specialties to work together to provide safe and well-coordinated care. Moreover it has helped in reducing errors and increasing learning of the professionals in a very relax and encouraging environment

Methodology: We evaluated an IPE workshop by means of quantitative design, consisting of before and after questionnaire. Permission was taken from the ethical committee of CPE institute of cardiology Multan. Verbal consent was taken from all the participants. Evaluation of the workshop was carried out by two sets of questionnaire. These were administered before and one week after the workshop. Questionnaire included two scales for assessing changes in team skills and collaboration among team members (Team Skill Scale and Interprofessional collaboration scale all the data was entered and analyzed through SPSS version 21. We analyzed the baseline characteristics of the participants by using descriptive statistics. Dependent t test was used to compare the means of Team Skill scale and Interprofessional Scale before and after the workshop

Results: There was a significant difference in the pre and post workshop team skill score (mean difference=-26.6000; SD=8.66572, p=0.000) (TABLE 1).The score of Interprofessional collaboration was also higher in the post workshop questionnaire however it was not significantly changed (mean difference=-3.3500; SD=5.80630, p=0.009)

Conclusion: IPE workshop has resulted in higher scores on team skill scale and Interprofessional collaboration scale of health professionals working in cath lab.

12. Title: "Challenges of faculty development in private medical colleges"

Introduction: Faculty development is the basic pillar in success of building and dynamic functioning of a medical college aiming to produce pre-eminent medical graduates and to provide most advanced and state-of-the- art health care facilities. It is designed to equip and educate medical teachers about their roles and responsibilities. The challenges faced by the private medical colleges are lack of awareness about the subject, meagerness of human and financial resources. There is also resistance to change and aversion to acceptance of the innovations and strategies that must be used in teaching of medical graduates.

Objectives: The aim of our research project was to explore the challenges faced by the private medical colleges in their faculty development programs.

Methodology: Methods: We included in our study the medical educationists who are responsible for or concerned with the faculty development programs in private sector. Telephonic interviews were organized and recorded for an average of 15 to 20 minutes. Thematic analysis was done on the transcript of the interviews.

Results: Results: From these interviews seven main themes were identified. Most of the respondents put emphasis on lack of human and financial resources, resistance from senior faculty members and top management, working methodology, lack of encouragement, appreciation and incentives, majority of faculty members lack in foreign exposure and experience.

Conclusion: Conclusion: Faculty and administration of the private medical colleges require to understand the importance of faculty development and the role of independent and fully equipped department of medical education. Owners of the private medical colleges should be encouraged towards investing in this specialty as this will further improve the quality and standard of their institution. Also the regulatory bodies should play their role in implementing and conducting faculty development programs.

13. Title: Medical Students' Perceptions of the Educational Environment in the Surgical Theater

Introduction: Educational environment is an interactive network of forces playing an important role in producing positive outcomes of the curriculum related to teaching, learning and students' achievement.

Surgical theater is a challenging place where medical students feel pressurized and stressed, because of the serious implications on patient safety. Perceptions of medical students identify strengths and weaknesses of the educational environment in surgical theater and indicate the key variables that make an ideal learning environment for them.

Methodology: This was a teaching hospital-based cross-sectional study. The Mini-Surgical Theater Educational Environment Measure (mini-STEEM) (thirteen items from the STEEM inventory) was used to measure perceptions of medical students on the learning environment in surgical theater. Mini-STEEM was administered to medical students of fourth and final year during their rotation in surgical theater at Fatima Memorial Hospital College of Medicine and Dentistry. All 134 students filled the questionnaire with a response rate of 100%. Social Sciences (SPSS) Version 20 was used for non-parametric statistical analysis.

Results: Questionnaire was filled by all 134 students, with a response rate of 81% the mini-STEEM was shown to be a reliable tool to measure overall learning environment in the surgical theater of Fatima Memorial Hospital College of Medicine and Dentistry. The overall mini-STEEM mean score was 37.66 which was below the midpoint score (39). Students' ratings were low for two subscales, namely: 'Atmosphere' and 'Operating experience. Discrimination subscale showed high ratings as there were no significant differences of perceptions were found between male and female participants.

Conclusion: The medical undergraduates perceived the educational environment within the surgical theater of Fatima Memorial Hospital College of Medicine and Dentistry below satisfactory. Results of the study implied that the environment required multiple measures for improvement in the surgical theater to promote surgical education in undergraduate medical students.

14. Title: Disruptive Behavior in Classroom – Medical Students' Perception

Introduction: For the conducive learning environment learners and teachers are expected to behave optimally. Reports of disturbing behaviors of professional students in the classroom have had a profound impact on other students, faculty members, and the environment for teaching and learning. Review of the health profession's literature on the topic revealed lot of studies about nursing and pharmacy schools but scarce from medical schools. This study is an attempt to find out the perception of medical students regarding themselves and teacher's disruptive behaviors in class room leading to non-conductive learning environment. Student's viewpoint about the issue may help the educators to successfully develop means of reducing the prevalence of such incivilities.

Methodology: A descriptive cross-sectional study was conducted at Azra Naheed Medical College, Lahore on the final year medical students during the month of May 2018. A questionnaire was used for data collection. A questionnaire comprising of two sections was used to collect data. The first section had questions regarding student's disruptive behaviors and that was taken from Rowland and Srisukho research and was used by authors' permission. The second section regarding teacher's incivility was self-prepared.

Results: A remarkable difference was noted in students' perception regarding their own and faculty's disruptive behavior. Female students were more sensitive regarding gravity of disruptive behavior. Regarding their own, students agreed with 35% items while about faculty they labeled 90% items as disruptive behavior. Sleeping in class (48%), demanding special treatment from the faculty and not putting cell phone on silent mode (44%) were labeled commoner disruptive behavior of the students. Humiliating behavior (87%), unintelligible voice and unavailability of teachers outside the class (81%) were taken by students as commoner disruptive behavior of the faculty.

Conclusion: About half of the student disagreed most of the potentially disruptive behavior attributes regarding themselves. On the other hand they have severe criticism on their teachers' disruptive behavior. They may have high expectations and want to see their faculty as role model. Moreover they may be a bit unfair in giving their opinion. For healthy learning environment both students as well as teachers should realize and modify their behavior to meliorate the critical problem of disruptive behavior in the academic environment. Keeping in view the students' expectations, educators should try to m2odify their objectionable attributes accordingly at their best. At the same time faculty should also try to aware the students that some behaviors are necessary for discipline which are useful.

15. Title: Correlation between Strength of Motivation and Academic Performance among the Dental Students of University College of Medicine and Dentistry, Lahore.

Introduction: Motivation is one of the key factors in a good academic performance. Motivation is especially important in Dentistry due to the high intensity of study, along with the requirement of carrying out clinical duties. Studies have been carried out to explore the relation between quality and quantity of motivation and academic performance, with contradictory results.

Methodology: Cross-sectional correlation research methodology was applied. The SMMS-R questionnaire was used to determine the strength of motivation and it was distributed electronically to the 1st, 2nd, 3rd and final year dental students of UCMD. A total of 144 responses were received, out of which 4 students did not give the permission to obtain their academic results, thus they were excluded from the study. The academic results for these 140 students were obtained from the administration department. Results for Complete Block Assessment 1 (CBA-1) were included in the study. Data was analyzed using SPSS25 program by means of Pearson Correlation Coefficient.

Results: Strength of motivation and academic performance revealed a positive linear relationship; Pearson's Correlation Coefficient (r) = .602 and p-value 0.01. As strength of motivation increased, academic performance increased.

Conclusion: In conclusion, a positive relationship was found between the student's strength of motivation, as calculated by the SMMS-R questionnaire and their academic performance.

16. Title: Students Perception about Problem based learning Problems and Quality of Problem based learning

Introduction: Problem based learning is method based on the principles of using problem as a starting point of acquisition and integration of new knowledge. PBL is instructional method which stimulates students by activating relevant prior knowledge, provide learning setting in which knowledge is to be applied in future and provide learners with an opportunity to elaborate their own knowledge. This study was conducted to see the quality of problems provided during problem based learning sessions and strength and weakness of problem based learning methodology.

Methodology: This study was conducted among dental students during academic year 2017-2018. A cross sectional study was conducted after having informed consent from the students. Survey was carried out among the students of 1st, 2nd and 3rd year of UCD (UOL), by distributing validated questionnaires among 170 students out of which 141 solved questionnaires were received back. Data obtained were analyzed using SPSS version 23.

Results: A total of 141 students participated in this study. The questionnaire used gives an impression on the strong and weak aspects of PBL and PBL problems. The strongest aspect identified by students is that problems provided in PBL, leads to Studying the Intended Contents. The weakest aspect is that the problems do not Enhance Interest in Subject Matter. At a more specific level the instrument can be used to identify strong and weak problems and give suggestions for improvement.

Conclusion: It can be concluded that the instrument that has been used to evaluate the quality of PBL and PBL problems provides useful information about strong and weak aspects of PBL and PBL problems

17. Title: The Impact Of Regular Breakfast Intake On Cognitive Performance And Emotional Status Of Adolescent Saudi ARABIAN MEDICAL STUDENTS

Introduction: Breakfast consumption, being the first meal of the day can be useful for better health outcomes and educational performance. Enhancement of academic capabilities of students is an essential factor that has a significant effect on their future life

A cross-sectional survey was designed to find out the effects of regular or irregular breakfast eating habits on cognitive performance and emotional status of adolescent Saudi Arabian medical students.

Methodology: In this cross-sectional study, ninety female medical students of Princess Nourah bint Abdulrahman Women University, Riyadh were recruited with an average age of 18-19 years. The students were divided into two groups A and B. The group A included 60 students who took breakfast on the day of study; whereas group B comprised of 30 students who did not take breakfast on study day. Students were tested using Test Performance Assessment Quiz to test their cognitive ability. A proforma based on positive or negative emotions of student was filled by each student. The response rate of students was 98%.

Results: The mean BMI of group A was lower as compared to group B, but was statistically insignificant. Academic performance and positive emotions of students taking breakfast were significantly higher (P<0.001) compared to students skipping breakfast. Moreover, negative emotions in subjects taking breakfast were significantly less (P<0.001) than student taking breakfast infrequently or skipping it.

Conclusion: The academic performance as well as subjective wellbeing of adolescents may be enhanced and improved by early recognition and correction of their meal habits. There is a need to encourage adolescents to take breakfast on regular basis during the period of rapid development of brain and body to avoid health issues in future.

18. Title: Stress and Coping Strategies among Medical Students. A Cross Sectional Study from a Private Medical College in Lahore.

Introduction: Medical education is considered challenging as medical students have to confront diverse varieties of stress

during all study years that affects their physical and psychological health and hinder coping abilities. The present study was aimed to examine stress and coping strategies of medical students studying in a private medical college. It was hypothesized that there is likely to be a relationship among stress and coping strategies and differences may exists in stress regarding gender and year of study.

Methodology: A sample of medical students N=150 was selected randomly from Akhtar Saeed Medical & Dental College Lahore. Age range of participants was 18 to 26 years (M=21). The Medical Students Stressor Questionnaire MSSQ-40 (Yusoff, Rahim, 2010) was used to assess Stress of medical students and The Brief Coping Orientation to Problems Experienced COPE-28 (Montel, Albertini, Desnuelle, Spitz, 2012) was used to assess Coping skills used by medical students. Pearson product moment correlation analysis was carried out to identify relationships among stress and coping strategy and demographics of medical students. T-Test and Anova was performed to explore the differences of study variables and demographics.

Results: The findings showed a positive relationship between stress and coping. Results revealed gender differences regarding stress and coping. A high stress level was found in female students as compared to male students. Academic stressor was found to be the most influencing factor whereas Avoidance coping is mostly used by medical students.in Akhtar Saeed Medical and Dental College. ANOVA was performed to explore study year differences, a higher stress rate was observed in 2nd year medical students among all study years.

Conclusion: It was concluded from the results that stress has a positive relationship with coping and significant differences were found regarding socio-demographics (gender, year of study).

19. Title: To Explore The Effect Of Pre-Exam Stress Levels Of Final Year Medical Students On Their Academic Performance.

Introduction: Stress is defined as the body's nonspecific response or reaction to demands made on it, or to distressing events in the environment. Stress is not just a stimulus or a response but it is a process, to cope with environmental threats and challenges. Personal and environmental events that cause stress are called stressors. In short, Stress is emotional disturbance or change caused by stressors. Stress is a procedure rather than a stimulus or a response by which we recognize and cope with surrounding pressures and challenges. The aim of the study was to determine the stress levels among final year medical students and its effect on their academic performance.

Methodology: Medical Student Stressors Questionnaire (MSSQ) was used for this study.1 all male and female students of final year MBBS class of Independent Medical College were included in the study. Collected data analyzed by using SPSS version 18. Mean stress values and chi-square tests were used to compare the levels of stress and its effect on their academic performance.

Results: Study results indicate that students who pass were taking moderate to high degree of stress as compared to students who fail in examination were

In mild to moderate degree of stress. In short, high achievers were more stressed as compared to low achievers. High achievers were more stressed with ARS (Academic Related Stressor) and TLRS (Teaching and Learning Related Stressor). Low achievers were more stressed with GARS (Group Activities Related Stressor) and SRS (Social Related Stressor)

Conclusion: The study concludes that stress can be used as a positive factor to improve medical students' academic performance. The most important thing is that not only some stress is necessary for good performance but also students should learn how to manage well their stress levels

To improve their academic performance. This study gives guidelines to other medical colleges for developing coping strategies; so that stress can be used as a positive factor to improve students' academic performance.

20. Title: Problems Faced By Students Enrolled In Blended Programs Of Masters In Health Professions Education.

Introduction: Blended learning is on rise with widespread use of internet and availability of information and communication technologies. This study aimed to explore the problems faced by students enrolled in masters programs of health professions education taking Garrison's Extended Community of Inquiry as a theoretical framework.

Methodology: This was a qualitative, exploratory study with eighteen students and four facilitators. Participants were

purposefully selected from three universities with blended MHPE programs: University of Lahore, Riphah International University, Islamabad and Khyber Medical University, Peshawar. After ethical approval and Informed consent, individual interviews were conducted. Data collected. Was transcribed and analyzed through Atlas ti software.

Results: Deductive thematic analysis led to identification of thirty-two axial codes for faculty and fifty-six for students, under five themes as defined by study's conceptual framework. Blended program of MME pose myriad of problems to the students. (1) Learner's presence related problems included lack of self-regulation and intrinsic motivation to engage one in the program. (2) Teaching Presence related problems revolved around issues regarding timely and appropriate feedback, and teaching methodologies. (3) Issues with Social Presence encompassed difficulties in interactions with facilitators, managing group dynamics and ICT difficulties. (4) Cognitive presence related problems included (5) Institutional issues regarding inadequate resource provision, unsatisfactory administrative support and financial issues.

Conclusion: Blended MHPE programs present a myriad of problems to the students enrolled in them in different components of the program. Answering to these issues can improve quality of these blended MME programs in Pakistan.

21. Title: Level of Exam Anxiety in students of a Private Sector Medical College Pakistan

Introduction: Exam anxiety is a combination of reactions that admits depression, excessive worry, irrelevant thinking, and tenseness from an individual's experience of evaluation/test and result. (1)Exam anxiety is experienced by many students when they undergo the process of examination. (2)Four main areas of stresses contributing exam anxiety are lack of desired material, life issues, studying style and psychosomatic aspects.

As anxiety level could be different in private medical college students as compared to public medical colleges due to factors such as extra economic burden and relatively weak academic record compared to students from public sector medical colleges. A differentiation along with other mental faculties, competence and cognitive capabilities also renders the top students to tackle anxiety differently.

Methodology: A descriptive survey was carried out in Central Park Medical College, Lahore. All students' studying in college were enrolled, both gender recruited and developed questionnaire was used. The data was analyzed by SPSS 20.00, Independent t- test and chi- square test was applied.

The average anxiety level on Visual Analogue Scale (VAS) was evaluated as 62.21 ± 23.01.Total no of student was 300 Female participants were 165(55%), students showed mild 34(11.33%), 141(47%) moderate and 41.67% with maximum anxiety level with the mean of anxiety score 62.18±SD 22.95.

Results: Demographic and baseline information about the students include their age, gender and professional year of study. Majority 199(66%) of them were between the ages of 21-25 years. More than half participants were females165 (55%). Moderate level of anxiety was presented by 141(47%) students.

Conclusion: Anxiety is common in medical students. Exam anxiety is regarded as a major problem in medical students as it affects the psychological well-being. It is proved by World Health Organization (WHO) that quality of life is affected with exams anxiety, whereas some aspect to the health of students is also affected through exam anxiety. This study indicates moderate level of exam anxiety in private sector medical college, whereas majority of students feel extensive course load which decreases with the increase in academic year as students gained experience from their exam performance.

22. Title: Students' Perceptions about Increased Failures in the Subject of Anatomy at a Private Medical College in Lahore, Pakistan

Introduction: The undergraduate curriculum consists of two phases: basic and clinical sciences. Entry in to a medical college is an extremely critical period for the students, during which they are to get familiarized to an entirely a new type of curriculum and learning atmosphere. This transition from higher secondary school to a medical college is quite difficult and stressful, hence some of them become frustrated and depressed leading to low performance and failure in exams.

Methodology: Study Setting: This study was carried out at University College of Medicine and Dentistry, a constituent college of the University Of Lahore, located in provincial capital of Punjab, Lahore, Pakistan. Study Design: a Quantitative, Cross-sectional survey based on a validated questionnaire.

Methods: All the newly promoted 2nd and 3rd year MBBS students (n=319) were included in this study. A validated questionnaire was developed, pilot tested and administered to the students for evaluation of their perceptions. Overall response rate was 91.85%. Non parametric Chi squire, Mann Whitney U, and student "t" test were used to analyze the results from individual subject; Kruskal-Willis H and ANOVA tests were used to compare the results from the three subjects and Tukey Post hoc test was applied to calculate the significance of difference wherever needed.

Results: The total number of 2nd year students were 159 with respondents 148 (50.5%) having males 60 (40.54%) and females 88 (59.46%); and the total number of 3rd year students was 160 with respondents 145 (49.5%) having males 64 (44.14%) and females 81 (55.86%). Out of maximum 100, overall score for the subject of anatomy was 58.80 which is better than negative; one of the subscale "Students' Perception about the Subject" showed highly significant low score as compared to other two subjects. Overall scores for the subjects of biochemistry and physiology were 69.04 and 67.62 respectively; both indicating more positive perceptions. There was no statistically significant difference between scores obtained by males and females.

Conclusion: The results of the study prove the hypothesis that 'The subject of anatomy is difficult compared with physiology and biochemistry'. The results of the study do not show any difference about the perceptions of male and female students in this regards. Teaching learning process in the subject of anatomy could be made more meaningful and student friendly by including the 'core knowledge' only, increased focus on providing understanding of the subject matter and contextualized instructional strategies that could enhance students' motivation and retention of knowledge leading to better performance.

23. Title: Should Counselling Be Mandatory For Undergraduate Dental Students?

Introduction: Mental health is the most important pillar for Dentist and his practice. Counselling and peer support is one of the key factors for dental students to have a healthy and successful academic life. The goal of this study was to evaluate the need of psychological and psychosocial support among students throughout their undergraduate life in a dental school for better performance and its significance in their clinical efficacy.

Methodology: Methodology: A total sample of 300 dental students participated from various Dental institutes and a cross sectional study was done to evaluate their needs for psychological counselling. A questionnaire was made comprising of 15 questions regarding various aspects and perceptions of counselling to evaluate its need and outcomes.

Results: The data showed 62.2% of undergraduate dental students reported a need for counselling sessions and 84.4% believes that mentoring has high impact on Dentist's professional development. 71.2% students reported that they will attend counseling sessions, if confidentiality is provided and 80.1% believe these sessions will be productive.

Conclusion: A significantly higher rate of psychological support is required by final year students. Confidentiality is the single most important factor of concern in counselling sessions. In order to produce better academic results and successful professionals, counseling and mentoring should be mandatory for undergraduate Dental students.

24. Title: Knowledge, Attitude and Practices regarding Obesity among Medical Students in Faisalabad, Pakistan

Introduction: Obesity is characterized by excessive fat deposition in the body. It is a worldwide epidemic, associated with large number of debilitating disorders such as type 2 diabetes, high blood pressure, cardiovascular diseases etc. A recent study demonstrates that a quarter of the population of Pakistan would be classified as overweight or obese with the use of Indo-Asian-specific BMI cutoff values. Public health experts and doctors play an important role in educating patients about the hazards of obesity, providing advice and support to maintain their body weight within normal ranges.

Methodology: An observational descriptive study was carried out to assess the knowledge, attitude and practices of medical students in Faisalabad. The study was conducted in May 2017 over a period of 4 weeks. After taking consent and explaining the purpose of study, a pre-validated questionnaire was distributed among first and second year MBBS students of a public sector medical college. Data was analyzed using SPSS 21.

Results: Most participants responded well to questions regarding causes and ill effects of obesity and two thirds correctly identified the normal BMI range. Attitude of students was also positive as most of them understood the importance of maintaining weight. However, 20% still believed that obesity is inherited and can't be reduced. Furthermore, the response in practice section was not up to the mark as most students mentioned poor eating habits and lack of physical activity in their daily routine.

Conclusion: The knowledge and attitudes of medical students regarding obesity is satisfactory but this knowledge has to be put into practice. The causes of lack of physical activity and unhealthy eating practices should be evaluated and addressed by public health authorities.

25. Title: Knowledge and Attitude of Undergraduate Medical Students Regarding Research Work

Introduction: Health research is an important part of medical education and medical profession as well. Study in hand is conducted to assess the knowledge and attitude of medical undergraduate students regarding this research work and to identify the reasons for gaps in the knowledge and attitude.

Methodology: It was a cross sectional study conducted among medical students of various medical institutes of the country. Through purposive sampling a pretested, structured and validated questionnaire was administered to 151 medical students. Knowledge and attitude were recorded on a scale graduated in percentages.

Results: Mean percentage score (SD) on knowledge scale was 31.9% (18.4) and 51% (23.9) on attitude scale. Reasons for students' gap in knowledge and lack of interest in research were also analyzed. The most common reasons highlighted by the students were faculty forced research (reported by 78.1% students), curriculum overload (reported by 83% students) and lack of motives and incentives (reported by 78.8% students).

Conclusion: Medical students demonstrated moderate level of knowledge and a good level of attitude towards medical research work. Curriculum overload, faculty forced research and lack of motives and incentives are identified as prime reasons for the deficiencies in this regard.

Medical students demonstrated moderate level of knowledge and a good level of attitude towards medical research work. Curriculum overload, faculty forced research and lack of motives and incentives are identified as prime reasons for the deficiencies in this regard

26. Title: Academic Satisfaction Of Students In Undergraduate Nursing Program: Study From Public And Private Institutes Of Islamabad

Introduction: "Your most unhappy customers are your greatest source of learning." The academic realities pose new challenges and impact the academic and professional growth of student. Academic satisfaction is directly linked with quality of learning from persons and processes of institute. Which include, evaluation system, contact with teachers and colleagues, curriculum, management and campus itself. A successful institute continuously seeks opportunities for academic improvement and meets expectations of their stakeholders. Institutes continuously change to remain competitive in educational market. Unmet needs and expectations might lead to dissatisfaction. These students experience difficulty interacting and developing relationships. The most basic assumption of student satisfaction is that it is directly linked with student performance and growth.

Methodology: The multisite cross-sectional survey was conducted from February to May 2018. Approval from IRB was obtained. It included undergraduate nursing students from one public and three private institutes of Islamabad. A structured, validated "undergraduate nursing student academic satisfaction scale (UNSASS) was used with permission for data collection. It was pretested before administration. Students recorded their responses on five-point agreement Likert scale. Data was analyzed with descriptive and Mann-Whitney statistical tests.

Results: Out of 220 students, 198 responded, 186 were included after questionnaires validation. Among these 143 were female. Gender group showed significant difference between public private institutes (P <0.000); clinical teaching of private college (P <0.042); program designing (P <0.018) private college; support and resources (P <0.039) between institutes. 1st and 2nd year students' classroom and teaching difference in public and private (P <0.003, 0.002) college; support and resources (P <0.046) between institutes. Age group highlighted classroom teaching difference in public and private college (P <0.032, 0.043); between institutes (P <0.016) for support and resources. Overall difference of academic satisfaction among institutes was classroom teaching (P <0.000); clinical teaching (P<0.000); support and resources (P <0.001).

Conclusion: Evaluation of student satisfaction has identified important areas for improvement in nursing colleges. UNSAAS is a good tool to evaluate undergraduate nursing student's satisfaction since it has showed highly favorable reliability in Pakistani sample. Demographic subgroups highlighted differences of academic satisfaction in their own and among public and private

institutes. Private college students were satisfied with classroom teaching, support system and resources. While public-sector with clinical teaching. Sharing of expertise and resources could improve satisfaction among both type of institutes

27. Title: Going Beyond Your Form -Learning Experience Of Masters In Health Professional Education In Pakistan - A Qualitative Study Of Student's Perspective

Introduction: The number of Master programs in health-care education, focused on developing in-depth competencies for medical education, has proliferated in the past 15 years globally. These programs promise to produce effective leaders and professionals in health professional education, who can manage the curricular change and bring reforms in medical education. One of the major challenges associated with these programs is students encounter a new social science paradigm which is different from what they have experienced learning in basic and clinical sciences. This poses challenges not only to the students but also to the teachers.

Methodology: Qualitative phenomenological study was conducted with students of Master of Medical Education (MME) in the University of Lahore (UOL), a private sector university. Duration of Study is from June to September 2017.

Data collection-Qualitative data was collected through two focus group discussions duration varied from 45 to 52 min. First focus group consisted of six MME student of UOL who were senior clinicians. Second group had five members, all from basic sciences. As a first step in the interview process, the researcher informed participants about the purpose of the study, research procedures, anticipated benefits, their right to withdraw from the study at any time, and protection of confidentiality. A semi-structured interview was conducted through focus groups Transcripts of interviews were produced in Microsoft Word document after listening to audio recordings. The data anonymization was done and participants were given numerical identity. Transcripts were analyzed one by one; NVivo-1O, a data analysis tool was used to assist the process of qualitative data analysis.

Results: Eleven people participated in study. There were seven male participant and four female participants. There were six clinicians, five FCPS and one with MCPS degree. Five participants were basic scientists; three with M.Phil. Degree in their subject.Figure1 shows the most frequently used words in the transcript. Researcher used the metaphor 'RIDE' in amusement park for MME and themes are linked as why they want to take ride, what they felt during ride and what are their suggestions to further improve it .

Conclusion: Overall students shared positive experience about the program. Three major themes were identified including, student 'motivation, experience and suggestions. Self-development was identified as the main motivation to seek admission in MME program. Majority found curriculum development module was the most practical one. They were confident that this will bring a positive change in their institutes. Students suggested that certificate course in health professional education should be criteria for admission in MME program.

28. Title: Exploring Needs Of Medical Students For Co-Curricular And Extracurricular Activities In A Public Sector Medical University

Introduction: Extracurricular activities are an integral part of personal grooming for students; they promote active classroom learning and help in grooming personality characteristics which help them in dealing with stressful life situations both in personal and professional domains. Medical Students have a very tough routine and most of the time they are under stress of examinations. They do not get enough time and opportunities for extra and co-curricular activities within university or college campuses. This study was planned to explore the unmet needs of a medical students for personal grooming in public sector medical university.

Methodology: A cross sectional study was conducted amongst the MBBS students of Faisalabad Medical University. A properly designed and tested questionnaire was distributed among students of all years. Extracurricular activities were divided into five categories: Games, Clubs, Societies, Workshops and Language learning. Sample size was 269 out of which 56 students belonged to 1st year, 58 students were from 2nd year, 47 students classified among 3rd year, 42 students were from 4th year and 56 students belonged to final year.

Results: It is found that Badminton is the highly rated sport, accounted for 57.2% followed by video games (53.15%) and cricket (54.62%). 183 (68.02%) are interested in First Aid Society, 120 (44.60%) prefer Media & Photography club, 119 (44.23%) want to be part of student council. Career counseling 175 (65.05%) and stress management 172(63.94%) workshops

were highly demanded. As for languages majority students showed interest in learning English 186 (69.14%) and Arabic 169 (61.33%). There was a significant link between gender and choices for activities except that Cardiopulmonary resuscitation was the only workshop which was highly rated in juniors and less amongst senior class. One possible reason could be that it is a compulsory course for the final year in this university and juniors are motivated to learn skills. However, this can be further explored in some other study.

Conclusion: It is concluded that majority of the students have shown a keen interest in various extracurricular and co-curricular activities, this gives an idea about student's need about spending time in healthy activities. In this gadgets era when we are living in a world where people are disconnected, this study informs us that students need the proper environment to get involved in healthy activities.

29. Title: Interest Of Undergraduate Students Towards Research In Private Medical Colleges Of Lahore, Pakistan.

Introduction: Research is an important tool to update knowledge and facts related to any field including education and medicine. In undergraduate studies, research is considered extremely helpful and encouraging for students towards better career orientation. In medical field, research is essential to render better clinical processes. However, it has been noted that developing countries have a trend far away from research activities. The present study aims to assess interest of medical students towards research and identify factors influencing it. A cross sectional study was done in this regard in which 100 medical students of pre-clinical years were selected conveniently from Lahore Medical and Dental College, Punjab. The participants were explained with the purpose of study and informed consents were collected. Data was analyzed using SPSS. Out of the 100 students selected, 44% were males. The mean age was 19.13 (1.13) years. Majority of the students (94%) indicated interest in research and 92 % showed willingness to pursue research after graduation. It showed that majority of students were more inclined towards clinical research as compare to pre-clinical research.

Methodology: Study Settings and Participants: The data was collected from the students of Lahore Medical and Dental College, Punjab. In total, 100 students from the pre-clinical years participated in the study, the participants were explained with the purpose of study and informed consents were collected. Inclusion criteria comprised of students available and willing to participate in study. It was a cross sectional study. Non-probability convenient sampling was used. The instrument consisted of a pre-designed questionnaire. The students were asked about their demographics and interest towards research.

Results: The Table 1 shows interest of medical students towards research. Out of the 100 students selected 44% were males. The mean age was 19.13 (1.13) years with 18 was the minimum and 22 years was the maximum age. Majority of the students (94%) indicated interest in research and 92 % showed willingness to pursue research after graduation.

Conclusion: It can be concluded that medical students of Lahore Medical and Dental College has keen interest towards research with more than 90% of students have shown positive inclination towards research. Although both male and female students are more interested towards clinical research yet only 19% of students had attended proper training course or workshop on research.

30. Title: The Stressors Of Mbbs Students In A Private Medical College

Introduction: Medical education is always being perceived as a stressful profession and this fact is well established. Due to this stress, not only the worth and value of this sacred profession is compromised but it also deteriorates the mental health and the academic performance of the students. Persistent stress also leads to anxiety, depression and negative effects on the cognitive functions, learning, personal and professional development of the students

Objective: The aim of this study is to identify the risk factors called stressors which are causing deleterious effects on medical students and their mental health and also to quantify the magnitude of these stressors. In the long run, as a teacher, we can address that issues and if possible, can take some steps to rectify them.

Methodology: This is cross sectional descriptive study which was conducted in obstetric/Gynae department of University College of Medicine and Dentistry (UCMD), University Of Lahore. It was a questionnaire-based study in which validated Medical Student Stressor Questionnaire (MSSQ) was given to the students to identify the sources of stress in MBBS students of UCMD. Then stress level was calculated against 40 items of this questionnaire, which were divided into six domains. Six Likert scale was used for scoring system. Ethical Committee clearance was obtained before the study. Data was analyzed using SPSS version 21.

Results: Data from 382 students were analyzed-approximately 70% were female and 30% were male. . Sample size was calculated by WHO sample size calculator where the prevalence of stress were found 46.2% among medical students with 95% of confidence interval and 5% of margin of error, the calculated sample size was (n=382) The academic related stressors (Domain 1) and teaching and learning related stressors (Domain 11) were found to be major stressors causing moderate to severe stress.

Conclusion: The prevalence of stress is high in medical students. High stress is caused by our academic system, syllabus and curriculum as Domain 1 and Domain111 which include our teaching and learning strategies. Domain 11 also causes mild to moderate stress while IV, V and VI cause mild stress in medical students. Medical teacher should work on their teaching strategies and curriculum to minimize the stress of the students.

31. Title: Endodontic Teaching At A Pre-Clinical And Clinical Level In Punjab And Khyber-Pakhtunkhwa To Undergraduate Dental Students

Introduction: For reasons of patient safety and to minimize iatrogenic damage to the tooth, students worldwide practice on extracted teeth before going on to perform the procedure on a real patient. Unfortunately for Endodontics, it is not recognized as a separate subject in the PMDC. This is despite the fact that most cases of toothache presenting at dental outpatient departments require some form of endodontic treatment. This puts human and financial resource constraints for the teaching of endodontics.

Methodology: A questionnaire was formulated to ask about the various aspects of pre-clinical and clinical endodontic the questionnaire consisted of questions evaluating different aspects of the course. The questionnaire was filled by 9 different dental schools in Punjab, by the teacher responsible for teaching the subject.

Results: Pre-clinical endodontics was considered by almost all to be of benefit in student learning prior to clinical endodontic procedures. All of the school taught endodontic within the operative dentistry subject and some of them also had their separate endodontic department. Most of the schools had favorable staff to students' ratio with trained staff of specialized in endodontic. Patients allotted to students were offered endodontic treatment at lower rates. Most of the schools taught preclinical endodontic in 3rd and final years, to divided batches of students in clinical rotation on extracted teeth. The assessment was often included in another subject's professional examination or not carried out at all.

Conclusion: Although pre-clinical endodontic training is widely given to the undergraduate dental students, it needs more structured course content and a greater role for assessment.

It is high time that endodontics is given its rightful place in the curriculum as a separate subject and recognized by the PMDC as such.

32. Title: Comparison Of Medical Leadership Competencies Of DOCTORS ON Induction And On Completion Of Postgraduate Training In Pediatrics And Paediatric Surgery

Introduction: Background of the Study: Leadership development among medical professional is the need of changing paradigm of today's healthcare system especially in relation to financial constraints and more accountability. Currently literature is deficient on integration and assessment of medical leadership competencies among Pakistani postgraduate residents.

Methodology: Total 50 residents were included from induction to FCPS/MS/MD of January 2016 for pediatrics and pediatric surgery and 50 in training complete group. A questionnaire designed by NHS for self-evaluation of medical leadership competencies was used. First residents were explained about the medical leadership competencies and about the filing of proforma. Then proforma was distributed and collected back. Results are recorded and entered in the SSPS version 21 and analyzed by applying independent t-test.

Results: Data revealed that there was marked difference of leadership competency score among postgraduate training complete group and PG trainee on induction (P=0.006). This difference was also evident in all 5 leadership competency domains (P values, 0.008, 0.009, 0.035, 0.014, 0.017). There was marked difference among pediatric surgery residents (p=0.001) in training complete and induction group, than pediatrics resident showing none significant difference (p=0.374).

Females showed a significant difference with higher leadership competency score in training complete group than induction group (p=0.003) as compared to males (p=0.053). This competency score difference between males and females was significant in training complete group (0.026) but none significant in induction group (0.159). Previous leadership experience had significantly positive effect on leadership competency score in training complete group between having and not having experience but not so in induction group. Previous leadership training having and not having training, had none significant effect in both induction and training complete group (0.068 and 0.532).

Conclusion: Medical leadership is need of day for doctors to cope with the challenges faced by healthcare system in the present era. This is first study on leadership to be conducted in Pakistan on the postgraduate residents. It was observed that there is relatively high score of leadership competencies among training complete residents than residents of induction group. Pediatric surgery residents showed a better potential than pediatric residents.

33. Title: Reliability Of Research

Introduction: Research is the systematic investigation and study of materials, methods and sources/resources in order to establish facts and reach new conclusions. Reliability is one of the important feature of the research. The term reliability generally refers to the consistency of a measure. Research reliability is the degree to which research method produces stable and consistent results. The aim of this research was to access the reliability of the questionnaire based studies conducted in University College of Dentistry (UCD) University of Lahore (UOL).

Methodology: It is a longitudinal analytical research of Test-retest type. Data type was quantitative.

A validated questionnaire consisting of 34 items was distributed among full population of final year BDS and house officers. The consent was taken. We received 90 completed questionnaires back. The same questionnaire was distributed to the same cohort after one month.

SPSS version 2.0 was used to analyses the data. Individual and overall mean were calculated and compared.

Results: The overall mean for the questionnaire distributed first time is 3.30 and the overall mean for the same questionnaire distributed after one month to the same cohort is 3.32.

Conclusion: The participants in University College of dentistry (UCD) University of Lahore (UOL) knows the value of filling questionnaire in research and show full interest in it. The results remain stable and consistent and hence the questionnaire-based studies conducted within the domain of sample representation are expected to be reliable

34. Title: Insight Of Third Year Medical Students Regarding Teaching Methodology

Introduction: Teaching is one of the main components in educational planning. Taking regular feed backs from the students is important to make teaching more useful and interesting and improve the performance of students.

Methodology: This descriptive cross-sectional was conducted in Rawalpindi medical University (RMU) over a period of two years; 2016-2018. 3rd year medical students were included in the study based on non-probability consecutive sampling and were made to fill specially designed questionnaire at the end of their academic year. Students in other years of MBBS were excluded. Scoring was designed to assess the perception of students regarding the teaching methodology used during their 3rd year medical classes (≤-25=poor,-24-0=fair,1-25=good,26-50=very good,≥51=excellent).Data was entered and analyzed using Spss-23.

Results: Among 220 students included, 47.3% students had a good while 43.2% had a very good perception about the teaching methodology used while only 0.5% considered it poor. Knowledge of teachers was good according to 47.3% students, 46.2% had a good understanding of the concepts taught, 38.7% considered the teacher student interaction during lectures to be good and 36.4% considered it to be fair. 60.8% considered the use of teaching aids during lectures to be good. 82.5% students had ever visited the website of university. Among these only 42.5% had read the learning objectives of lectures and only 30.8% had read the guidelines specified for send-ups. 52.9% students considered the environment of lecture halls uncomfortable.

Conclusion: The teaching methodology used was good according to majority of the students. Most of them had never read the learning outcomes of lectures and guidelines specified by the university for send-ups. The environment of lecture halls was uncomfortable according to majority of students.

35. Title: Role of WhatsApp in Linking the Orthopedic and Allied Department for Updates, Engagement and Education

Introduction: In Orthopedic surgery, we have three teams with senior resident to junior residents. There have different role and responsibilities at work place range from indoor, out-door and emergency work. There needs to deliberate the ward orders, teaching, learning material including journal club article, sharing recent updates, case discussion, clinical class and emergency opinion of patients' management plan for various fractures from the consultants. Trainees are also involved in allied health sciences teaching related to orthopedic.

In this study we determined the use of WhatsApp as a tool to use effective than email, technology for sharing of academic, its effects on personal life. Useful effect on engagement at work place during different routines of work amongst orthopedic surgery and allied health professionals of orthotics and prosthesis.

Methodology: This cross-sectional survey was conducted using non-probability, convenient sampling technique at the Department of Orthopedic Surgery and Traumatology from June 1st to July 18th, 2018. Our sample size was 63 participants including house office, senior and junior resident, senior registrar, assistant professor, professors and allied science Orthotics and Prosthesis under-graduate students. Our inclusion criteria were the entire questionnaire which was filled by participants themselves after complete briefing. All questioners filled at the spot without using internet, book and literature. Our exclusion criteria were all questionnaires who were incomplete, insisted to keep with them by the participants, later collected were excluded from the study.

Results: Out of the total 63 participants, there were 54 (85.7%) were male and 09 (14.3%) were females. The mean age of the participants was 33.556±9.895 with minimum age was 22year and maximum age was 59year. All the participants were using the WhatsApp for the past 5year or less. There were 04 (%) house officers, 09 (%) orthotics and prosthesis students, 35 (%) post-graduate trainee, 07 (%) senior registrar, 04 (%) assistant professor, 02 (%) associate professor and 02 (%) Professors

Conclusion: WhatsApp was an easy app to install and use for personal, academic and engagement purpose. Participants didn't feel safe to share the personal information and it was good tool for sharing academic material. It also has addiction that affects their ability at workplace.

36. Title: Does Reflection Writing Effects The Knowledge, Attitude And Skills Of House Officers?

Introduction: There is an emerging trend of reflective writing in medical education that fosters the growth of an individual cognitively, emotionally and morally. In literature there is no evidence that reflection enhanced the competence or skills of medical and dental students. The purpose of this study was to bridge this research gap and to evaluate either reflection writing changes the knowledge, attitude and skills of the doctors or not.

Methodology: There is an emerging trend of reflective writing in medical education that fosters the growth of an individual cognitively, emotionally and morally. In literature there is no evidence that reflection enhanced the competence or skills of medical and dental students. The purpose of this study was to bridge this research gap and to evaluate either reflection writing changes the knowledge, attitude and skills of the doctors or not.

Results: Deepening the learning and understanding, reducing the errors, using the time effectively, purposeful communication with colleagues, refining the surgical skills and enhancement of the problem solving ability were the benefits of reflection.

Conclusion: Reflection writing is a powerful tool for metacognition. Critical reflection of the tasks enhances the knowledge of the doctors as they reflect their lacking. It changes their attitude towards learning and patient care and enhances their clinical skills.

37. Title: Preference Of Teaching Methods By The Medical Students Of Saudi Arabia

Introduction: Learning is a complex process and it needs active participation of all the stakeholders; which are teachers, students and institute. There are multiple factors which affect the effective learning e.g. teaching strategies, teaching methods, teaching and learning styles etc. In any class of a medical school; we always have mix of students and every student has its own capacity of learning. In such a situation; for the better understanding of the concepts and the active participation of all the students, the effective teaching styles or methods play a vital role. That is why it is very important to adopt a teaching method which is according to the needs of the today's medical student; to enhance their critical thinking and the problem-solving

skills

Methodology: Study will be conducted in the colleges of the medicine of the Princess Noura bint Abdulrehman University, Riyadh and the King Abdul Aziz University, Jeddah. The study is based on cross sectional, self-administered, semi structured questionnaire about the preference of the teaching methods by the medical students of the Saudi Arabia. This semi structured questionnaire will be distributed by the convenient sampling technique. The data collecting tool is a structured questionnaire consisting of two aspects:

- Preferred teaching methods by the medical students

- Student's perception about different teaching methods.

Results: A total of 102 students out of 200 participated in the study with a total turnout of 51%. The most preferred teaching method was PBL (51%) as the students strongly believed that it enhances lateral thinking, leads to better clinical correlation and better communication in between the students. Students also preferred the Socratic teaching method (20.6%) as the second-best teaching method. The didactic lecture was the least preferred teaching method (3.9%). For the clinical teaching methods, majority of the students strongly preferred the bed side teaching (75.5%) while 59.8% students preferred mannequin teaching. A very few students preferred video lectures (14.7%) and role play (7.8%) to see the rare signs when the patients are not available.

Conclusion: In our study we have concluded that the Saudi students are very well aware of their requirements for active and deep learning. They were more interested in interactive teaching sessions which could enhance their critical thinking skills and active participation in the class. Therefore, the teachers can incorporate the desired teaching methods to create an efficient learning environment that motivates the students to achieve academic excellence. Some improvements should also be done to make the students aware of the new and more interactive teaching methods, so that they could learn to get more knowledge and critical thinking skills. This would help to give a better quality medical education to get better quality medical graduates.

38. Title: Evolving Role of Social Networking Sites in Undergraduate Surgical Education: Student Perspective

Introduction: Social Networking Sites (SNSs) like Facebook, YouTube, Twitter, WhatsApp etc. are evolving as an effective tool for content delivery and educational communications in medical field. However researchers have identified potential concerns about reliability of content, its alignment and synchronization with curricular needs and privacy. Based on these SNSs, a supervised, faculty controlled online platform (Shalimar Surgiomics: www.twaseem.wixsite.com/surgiomics) has been developed to augment undergraduate surgical education in our institution, where content delivery and blogging is supervised. The aim of this study was to evaluate student perceptions regarding use of social networking sites through this controlled online platform.

Methodology: A paper based questionnaire was redesigned with required modifications as described previously and was administered among fourth and final year medical students (n=135) at Shalimar Medical & Dental College, Lahore containing both quantitative and qualitative components. The questionnaire evaluated advantages and disadvantages of SNSs use in surgical education.

Results: 92% of the participants agreed that social networking sites are the necessity of today's life. The students overwhelmingly think that SNSs are a source of easy, rapid, timely and up-to-date information on medical issues. These sites are source of effective healthcare communication and can be effectively utilized to promote own self and find career opportunities. Social networking sites are quite effective tool for delivering lectures, notes and other study material. 79% of the students thought that SNSs did improve their understanding about the medical concepts, however only 72% agreed with the notion that SNSs did improve their test and exam results. Many students agreed that SNSs work better when embedded with the traditional teaching strategies. 77% of students thought either they themselves or their colleagues were nervous about participating in such a blog or SNSs portal due to privacy concerns. However 59% of the students were willing to use them despite these concerns. Faculty oversight and control positively impacted on quality of information transfer, content reliability, alignment with curricular needs and privacy issues.

Conclusion: Medical students have a significantly positive impression about social networking websites and its role in medical education. Despite some concerns regarding the privacy and security, majority of the students have shown willingness to interact through SNSs to improve their educational perspectives.

39. Title: Effectiveness Of Flipped Classroom With Gamification Approach For Teaching Anatomy To Medical Students

Introduction: Different teaching and learning strategies are being introduced in recent years to involve the students actively, as trends in medical education are changing day by day. Flipped classroom with Gamification is a new teaching strategy introduced from last few years, in which class time can be used for interactive sessions and problem solving. The idea is to design different study-based games for the students, aligned with learning objectives, which encourage and motivate them to actively participate in class and helps them to retain the content for longer duration.

Methodology: This was a quantitative Experimental study conducted in undergraduate students for teaching anatomy in private medical college of Lahore, Pakistan. Intervention was flipped classroom and Gamification technique and students were assessed on pre and post test scores. Only knowledge content was assessed that is why the tool used for assessment was MCQ's. All the students of 1st year MBBS enrolled in UCMD were approached for this study.

Total 160 students of 1st year were divided randomly into three groups Group 1(Traditional teaching method), Group 2(Flipped Classroom method) and Group 3 (Flipped with Gamification Approach) and scores of pre and post-test were analyzed.

Results: Overall response rate of students for this study is 98 percent. All students were below 20 years of age with equal male to female ratio. Findings of the study showed that students studied in Group 3(Flipped with Gamification Approach) achieved highest scores in post-test. When compared with the other groups. Mean difference of Group 3 is (MD=-5.480) as compared to Group 1(Traditional Approach) which is MD=-1.040. Similarly, when compared the Flipped classroom (Group 2) with Traditional group (Group 1), Group 2(Flipped classroom) showed better results. Thus, evident from the statistics that students of group 3(Flipped with Gamification) achieved high scores as compared to other 2 groups.

Conclusion: Student's response to the flipped classroom with Gamification approach was very effective as evident by the statistical analysis. This is true student-centered technique in which students actively took part in different activities and discussions, which helps them to retain the knowledge for longer. In future this teaching approach can be implemented for teaching medical students.

40. Title: Comparison of Computer Literacy in Students and Faculty of CMH Lahore Medical and Dental College

Introduction: It is very important for the medical professionals to be proficient in using computer technology for performing different important tasks. Doctors should have adequate knowledge and skill of computer utility which is required for learning from internet and E books, keeping electronic health records, telemedicine, medical information systems, robotic surgery, medical imaging reporting, patient care decisions, select treatment from different options, and develop their abilities as lifelong learners.

Methodology: A questionnaire was designed after having discussion with two faculty members and a computer expert. It mainly included the six basic functions of the computer usage. We chose only six important functions and tasks related to Microsoft Word (MS Word). MS Word is most commonly used software by medical professionals. The questionnaire included non-weighted scoring system recording score of 6 activities on five-point scale as a computer literacy score. Total score of six variables were recorded. The data was stored in SPSS version 20 and by applying chi-square tests p values were calculated to assess the two tailed significance of difference all six variables between two groups.

Results: Mean age of young medical students was 19.09 years (standard deviation 0.781) while mean age of faculty members was 45.28 years (standard deviation 12.3). in students there were 75 males and 70 females while in faculty there were 26 males and 24 females. Difference of distribution of males and females in both groups was not statistically significant (p-value 0.973). Statistically significant difference of literacy was seen in three out of total six variables while the difference was not statistically significant in the remaining three variables.

Conclusion: In the present time computer literacy is slightly less in the faculty as compared to the students but the difference is insignificant. Students are receptive for e learning and faculty is also ready for the same.

41. Title: Replacement Of Conceptions Developed During Health Professions

Education

Introduction: Replacement of concepts is another terminology used for misconceptions which are developed at an early and theoretically the student considers it as correct and builds all other related concepts upon it. This eventually becomes so strong that when they reach their professional studies it becomes extremely difficult to replace the misconception and erase the previously formed schema in their minds. This problem became so prominent that research into students' misconceptions started and are still continuing so as to identify the areas where replacement of concepts is required providing elaborative evidence about the nature of students' understandings

Methodology: Literature search was performed by using database of PubMed", the keyword use was misconception (56 searches) AND learning (143 searches). "PERN was used by database of Bahria University, this included literature and articles from international sources; 2 articles from Pakistan on this topic were consulted (one in international journal and 1 in a local journal)". Of these, 49 articles were shortlisted which discussed relation replacement of conception developed during health professions education. "These articles were consulted for this review

Results: WHY DO STUDENTS HAVE THESE MISCONCEPTIONS? Reports by researchers in science education suggest that students' misconceptions are often stable, pervasive and resistant to change. Teachers can be astonished to learn that despite their best efforts, students do not grasp fundamental ideas covered in class. Even some of the best students give the right answer but are only using correctly memorized words. NONSCIENTIFIC BELIEFS "include views learned by students from sources other than scientific education, such as religious or mythical teaching" "CONCEPTUAL MISUNDERSTANDINGS arise when students are taught scientific information in a way that does not provoke them to confront paradoxes and conflicts resulting from their own preconceived notions and nonscientific beliefs. To deal with their confusions, students construct faulty models that usually are so weak that the students themselves are insecure about concepts.

Conclusion: Replacement of misconception is a challenging task especially at the level of University students, however it is important to identify those students who have built their misconception but in their minds the schema is correct and they continue to build upon these tasks which is difficult to erase in their minds and ensure that they have accepted the new correct concept and understanding of a topic they have been learning for many year

42. Title: Re-licensure and Recertification of PMDC certificate: Views from Basic Science Faculty at K.E.M.U.

Introduction: Doctors upon graduation have a greater responsibility of reassessing their knowledge, demonstrating specific skills and showing a positive attitude towards patients. In Pakistan, once a doctor graduates from a medical school, he is given a license to practice for life. There are numerous studies which provide evidence that re-licensure is the primary mode of maintaining competencies and modes of assessing performance in the clinical setup. Similar research in basic medical sciences faculty is scarce. This study was designed to understand the perceptions and attitudes of faculty of basic sciences regarding re-licensure of PMDC certificate.

Methodology: Sample size: Sample size was calculated as 108 (95% level of confidence and 5% margin of error) and 55.5% proportion of population knowing about re-licensure Sampling technique Simple Random Sampling

Data collection technique: Questionnaire

Results: Out of 108 respondents 49 (45.37%) were males and 59 (54.63%) were females. The mean age of respondents was 33 years with minimum age of 23 and maximum of 60 years (SD= 9.24). 58 respondents (53.7%) had less than 5 years of teaching experience, 32 respondents (29.6%) had teaching experience between 5-10 years and 18 respondents (16.6%) had teaching experience more than 10 years.

When enquired if they thought that there existed a need for relic ensure, 64 respondents (59.25%) thought that there exists a need for relic ensure of PMDC and 44respondent (40.74%) said that there exists no need for Relicensure. Majority agreed that relicensure should be made mandatory and that PMDC should carry out relicensure and CME hours should be the mode of relicensure.

Conclusion: We conclude that Doctors from basic sciences faculty at King Edward Medical University express a unanimous need for re-licensure of PMDC. However a difference of opinion exists on issue of Mandatory versus Voluntary professional development (70.37% VS. 29.63%) The process of re-certification and re-licensing of PMDC certificate is well known to all medical professionals, who generally acknowledge its practicality. We recommend re-licensing through CME hours for re-

certification. We recommend that re-licensing through CME be further deliberated by PMDC and other stakeholders.

43. Title: Special Education System In Pakistan (Review Article)

Introduction: Special education is education of physically or mentally handicapped children whose needs cannot be met in an ordinary classroom. In Pakistan disability rate are increasing day by day. Special schools are present only in big cities of Pakistan. A survey of the prevalence of special needs children sponsored by the WHO in 1985 indicated that 10 per cent of the population had some sort of disability, such as emotional disability, visual impairment, hearing impairment, mental retardation, physical disability, learning disability or multiple disabilities. Out Of these, only two per cent had access to institutional facilities most of the special schools are run by non-government organization, private school in Pakistan.

Methodology: An individual education program tracking system provides an automated means for creating and administering an entire individual education plan because by I.E.P they get interact with typical developed students in same class rooms, To run this kind of special programs schools have weekly one or two meeting with occupational therapist, speech therapist in which teachers shares the progress reports with them I.E.P also Full fill the demand of Atypical developed student by taped readings of class material, computer-based books and programs for decoding and comprehension, repeated readings, and intensive reading instruction provided in the resource room.

Results: By the time of minimum one year student with Atypical development have increased their grades in class room with fulfillment of their special needs it is also seen Atypical students have improve their handwriting/gross motor skills, taking care of themselves in Basic daily living activities such as one handed dressing of shirt , feeding and toileting activities with a use of their respective special aid this I.E.P program   may vary from person to person every individual have their own specific need it also depend on student I.Q level and for results may vary from person to person the duration of improvement may increases/ decreases according to student's level of functionality both in physical and mental health

Conclusion: I.E.P. is a useful tool in the administration and implementing of an inclusive policy , I.E.P should be age appropriate, holistic in its approach, flexible and future orientated, consider key long-term goals that reflect learning outcomes in social, academic and life skills development, establish short-term goals that will lead sequentially to the achievement of long-term goals, ensure that the goals are measurable, achievable, supported, time-framed and aim to retain the student at school . More over government universities should increase number of seats for Atypical developed student that he/she may able to peruse his/ her choice of career according to their capability of physical and mental health

44. Title: Status of the Departments of Medical Education in the Medical Colleges of Lahore

Introduction: To review the current status of medical education departments in all public and private medical colleges located in the city of Lahore, Pakistan.

Methodology: This was a quantitative, cross sectional descriptive study conducted in PMDC recognized medical colleges of Lahore. Respondents were the heads of department of medical education or any other well-informed faculty member. A questionnaire was prepared to obtain information about the current status of DMEs. The investigator visited all medical colleges for data collection. Both verbal and written consents were obtained and the questionnaire was administered to the resource persons. The investigator also prepared a questionnaire-based check list for the verification of the provided data. The data was organized and entered in SPSS for analysis.

Results: Out of the 18 medical colleges in Lahore, six (33.3%) were public sector and 12 (66.7%) from private sector. The studied medical colleges claimed to have a functional DME. However, eight had established the DMEs during the past five years. Only one (5.6%) head of DME was working on full-time basis. Eleven (61.1%) heads of DMEs, did not have any relevant formal qualification. Eight (44.4%) colleges claimed to have adequate human resources for DME. Thirteen (72.2%) colleges mentioned that adequate financial resources were available. DMEs in private sector medical colleges are playing increasingly significant role in managing educational activities. Similarly, the senior management of private sector is more concerned in promoting educational activities.

Conclusion: There is an increasing recognition towards establishing DMEs in the medical colleges, but their infrastructure, proper functioning and availability of human and financial resources are serious issues requiring immediate attention.

45. Title: Evaluation of the Impact of MARSI on Assessment Scores among Medical Undergraduates with English as L2: An Interventional Study.

Introduction: Importance of metacognition is highlighted by current cognitive approaches. Awareness of one's own learning processes, their physiology, optimization and control is facilitated by "Learning how to learn". Weak construct validity of the Metacognitive Awareness of Reading Strategy Inventory (MARSI) has been shown by some, suggesting that its existing form is not appropriate for use beyond 12th grade students as they acquire reading proficiency. Objective: To establish the construct validity of MARSI in 13th and 14th grade students with English as a second language (L2) and to evaluate its impact over assessment score.

Methodology: The construct validity of the MARSI was tested randomly with 24 medical students of 1st year and 2nd year each (with English as L2), and its convergent validity with reading comprehension ability was investigated against their quantitative scores in early and late session exams in a private medical school as an interventional approach.

Results: Significant improvement in result was seen in 1st as well as 2nd year medical undergraduates after intervention by MARSI on applying paired samples test, though improvement in score of first year students was significantly higher as compared to 2nd year class by Independent samples test. Among individual reading strategies, Mc Nemar's test showed significant increase in Global strategies in only 1st year students but no significant change in Problem solving strategies in 1st as well as 2nd year students, however, significant improvement was observed in support strategies in 2nd year students only.

Conclusion: Performance of 1st and 2nd year L2 English students in theory exams can be significantly be improved by MARSI intervention. More focus is needed to improve problem solving strategies than the other reading strategies that may contribute to further improvement.

46. Title: Knowledge, Skill And Attitude Among Fresh Dental Graduates About Orthodontics

Introduction: Orthodontics is an important part of the 4 year BDS program. According to the American Association of Orthodontists, orthodontics and dent facial orthopedics is defined as the area of dentistry which includes the diagnosis, prevention, interception, guidance and correction of malrelationships of the developing or mature orofacial structures. The purpose of this research is to find out if the fresh dental graduates of Pakistan are competent enough to deal with orthodontic cases without supervision.

Methodology: It was a descriptive study conducted in June 2018. A well-structured questionnaire based on American, European, Canadian and Australian competencies was developed and distributed among the fresh graduates of Fatima memorial hospital

Results: Out of the 33 participants 22 were practicing general dentistry. For the knowledge part the most common answer among the graduates was "fairly confident" which shows that the graduates did not have a good grip on theoretical orthodontic knowledge. For the skills part the first question that inquired about the number of patients done by the students during final year the most common answer was none. Three patients being the second most common answer. 7 participants did not respond to this question and it may be assumed that it was because they did not observe any patient in their final year. For the remaining questions the most common answer was "fairly confident" which means that the students did not have enough confidence in their orthodontic skills to be able to do orthodontic cases independently. For the attitude section majority of the students had not carried out any diagnostic orthodontic procedure during their final year training. Majority of the students had an idea about the right time to start orthodontic treatment also which patients can be potential candidates for orthodontic treatment. Out of thirty three graduates, 22 of them were working as a general dental practioner. 29 were of the opinion that an orthodontic case should be referred to an orthodontist rather than being treated by a general dental practioner. 29 students out of 33 believed that they could not provide orthodontic services based on their pre-doctoral training alone. For the last question in the attitude section 21 graduates out of 33 responded. All of them felt that they were not confident at all in treating an orthodontic case without supervision.

Conclusion: The present study showed that undergraduates are not confident enough to treat orthodontic cases without supervision at their private practices since they are not given enough exposure to patients during their training. Hence the conclusion that Dental colleges in Pakistan are not preparing dentists who feel competent in the field of orthodontics. It points out that students are well aware about the theoretical knowledge but they lack clinical skills.

47. Title: Learning To Cure With Care: Awareness Of Faculty And Medical Students About Students' Roles Related To Patient Safety

Introduction: The basic aim of this study was to explore the awareness of faculty and undergraduate medical students about students' roles with respect to patient safety, to define the areas, domains and limits which should be taught to our students and made a part of undergraduate curriculum so that the students learn to their best, gain adequate knowledge, develop appropriate skills and behavioral attitudes by practicing patient safety principles in a way that are in accordance with international standards and demands, without compromising their educational requirements.</label>

Methodology: It was a descriptive exploratory qualitative research, conducted at Islamic International Medical College, Rawalpindi including faculty members and medical students of final year MBBS. WHO patient safety curriculum guideline for undergraduate medical schools was taken as reference. Thematic narrative analysis was done using Atlas ti software.

Results: Initially18 codes for faculty and 12 for students were formed which were later reduced to 6 themes having sub themes. The themes were 1) Importance of patient safety education, 2) Importance of strong student-patient relationship, 3) Code of conduct, 4) Students and effective team, 5) Students part in management plans and 6) Students and medical errors. Sub themes were a) Workplace based learning and practices, b) Complexity of systems and ability to deal with them, c) Importance of proper standards and protocols for theme 1, d) Professional approach to patient, e) Necessity of consent taking, f) Communication skills, g) Respect for the privacy of patient for theme 2, h) History taking and examination, i) Patient identity, j) Diagnosis and treatment plans, k) Students and patient counselling for theme 5 and l) Students and error disclosure for theme 6.

Conclusion: It is the need of our society to bring reforms in our medical curriculum with respect to patient safety as early as possible. The concept of medical errors, their solution, reporting system, effective team management, and team work and quality assurance methods are the domains which are neglected

48. Title: Patient Safety Awareness Among Postgraduate Students And Nurses In A Tertiary Health Care Facility

Introduction: Patient safety (PS) and quality improvement of health care delivery to the patients are among the highest priorities of health care system. Building a safe health care system means designing processes of care to ensure that patients are safe from accidental injury. PS education and its training for all health care providers including both doctors and nurses is an important required learning at all levels. The literature on PS education in medical school and nursing curricula is not properly developed. In Pakistani medical and nursing school curriculum, there is dearth of information regarding PS and is not given due importance.

Methodology: Objective: To determine the knowledge of patient safety among postgraduate residents and nurses in a tertiary care hospital.

This casual comparative study was conducted among the postgraduate residents (PGR) and nurses working at The Children's Hospital Lahore in 2017. Both PGR and nurses were asked to complete APSQ-IV questionnaire about patient safety on 7 point Likert scale. There were ten domains and 30 questions, ten of 30 questions were negative statements and were scored in reverse order. Data was analyzed using SPSS version 20 and t-test was used to compare the mean score between two groups. The survey was anonymous.

Results: A total of 150 residents and 150 nurses were included. The scores of both PGR and nurses were similar in all domains having positively worded questions with insignificant difference (p=0.141). In the reverse-coded questions the nurses showed positive perception with higher mean score as compared to PGR (p=0.004). The PGR in the early years of residency had higher mean score in positively worded question as compared to residents who were in last years of training (p=0.006). No difference noted in nurses' years of experience (p=0.733). Medical error disclosure domain was reported lowest by both PGR and nurses.

Conclusion: Both postgraduate residents and nurses showed positive attitude with good knowledge and perception towards patient safety analyzed through this questionnaire. Lowest rated scores were from error disclosure confidence domain. The results encourage pilot projects with the ultimate goal of establishing a feasible reporting system about medical errors. This study results can help our leader and curricular developers to include error disclosure teaching as a compulsory part of medical education both in medicine and nursing curricula. PS programs exposure can lead to better PS knowledge and

ultimately to better patient care.

49. Title: "Quality Is Not An Act, It Is A Habit" – Aristotle… Survey Of Human Factors And Patient Safety In Operation Theaters Of A Peripheral Teaching Hospital

Introduction: Non-technical skills are directly related to safe surgical performance. The pathophysiology of this relation is not clear. The attitudes of surgical teams towards nontechnical skills may allow educationists to elaborate on this relationship and will further help in development of training and assessment programs.

OBJECTIVE: To know the attitudes towards non-technical skills in operation theatre among surgical and allied postgraduate trainees of Aziz Bhatti Shaheed Teaching hospital (ABSTH), Gujarat, Pakistan.

Methodology: Descriptive cross sectional survey. Thirty post graduate trainees working in Aziz Bhatti Shaheed Teaching Hospital, Gujarat, theaters completed the Operating Room Management Attitudes Questionnaire (ORMAQ).

Results: Post graduate trainees have positive views on all aspects of ORMAQ survey except on procedural compliance and error disclosure indicating discrepancies in implementation and awareness.

Conclusion: The results are on the large part aligned with previous ORMAQ surveys of surgical teams in other countries. The differences emphasize potential threat to the patient safety due to sketchy systematic working and cultural norms. The findings support implementation of protocols and guidelines through the use of team interventions and human factor training. Finally, this survey helps in data collection for a hospital's quality assurance program.

50. Title: Analysis of Compliance of Surgical Safety Protocols in Operating Rooms of Tertiary Care Hospitals of Lahore

Introduction: The objectives of this study are to determine the awareness of health care professionals towards surgical safety protocols (SSP), to assess the compliance with standardized SSP and to analyze the associations between experience of health care providers, Team work climate, safety climate and compliance to SSP in operating rooms (ORs) of tertiary care hospitals of Lahore.

Methodology: A cross-sectional study of 178 health care providers including surgeons and other OT related staff was conducted in four tertiary care hospitals of Lahore within a time period of two months, based on convenient sampling. A pre-validated questionnaire was distributed among the health care professionals after taking consent. Data was then analyzed on SPSS 21 and statistical tests were applied accordingly.

Results: A total of 178 health care providers took part in our study. 61.8% of the respondents needed to improve their compliance of SSP, whereas 38.2% had good compliance. 55.6% reported to have good safety climate of ORs and 44.4% needed improvement. 43.3% reported to have a good team work environment but 56.7% needed improvement.

Our study found a statistically significant association between safety climate of ORs and adoption of SSP. A statistically significant association was also found between team work climate and compliance of SSP.

Conclusion: The results suggest that most of the health care professionals in tertiary care hospitals of Lahore are not aware of SSP, WHO SSCL and its implementation in ORs. WHO SSCL, is not currently in use in greater number of the ORs. Majority of the OR personnel did not receive any training regarding the use of safety checklist.

51. Title: Perception of patient safety among Final year MBBS students at King Edward Medical University Lahore.

Introduction: Safety of the patient is a vital part of health field as far as ultimate healthcare is concerned. Medical students are required to understand the concepts of patient safety and "Do no harm" theory in medical practice. Students who do not perceive the idea of patient safety suffer from poor performance in clinical life. Hence, tutoring of medical students in respect to patient safety is very important. In past, many studies have been done to evaluate the perception of this idea of ensuring safety of patients among medical students but a local study can benefit a lot in addressing the issue.

Methodology: Total 179 students (n=179) were selected for study. Any other respondent other than final year students were omitted from study. The data collection tool was questionnaire Response of the participants were recorded and computed into

SPSS 19. Descriptive analysis was done.

Results: Majority of the participants (55%) indicated lack in overall knowledge about patient safety and their curriculum was lacking in dedicated topics about patient safety education. Specifically speaking, students (25%) misunderstood the nature of possible human error in provision of healthcare facilities, e.g. saying that senior doctors don't make mistakes when dealing with the patients. Also, the students had very little knowledge about disclosing the medical error to the patients or attendants (57%) and faculty members (48%). Many students (59%) did not know that a physician can work on his skills and improve ultimate patient safety by a targeted practice.

Conclusion: The final year MBBS students at King Edward Medical University Lahore lacked specific knowledge about patient safety but overall, they showed keen interest in learning patient safety concepts and wanted to apply them when in clinical settings.

Concept of patient safety should be made a part of syllabus of undergraduates to improve the awareness of patient wellbeing and safety.

52. Title: Patient safety awareness among Undergraduate Medical Students in Pakistani Medical School

Introduction: Introduction: Patient safety is an emerging healthcare discipline. Integration of patient safety in the medical education is a crucial measure to teach and train the future doctors for the delivery of safe care. To promote patient safety, baseline data is needed to design effective educational programs on patient safety based on students' needs.

Objective: To measure the level of awareness of patient safety among undergraduate medical students in Pakistani Medical School and to find the difference with respect to gender and prior experience with medical error.

Methodology: This cross-sectional study was conducted at the University Of Lahore (UOL), Pakistan from January to March 2017, and comprised final year medical students. Data was collected using a questionnaire 'APSQIII' on 7 point Likert scale. Eight questions were reverse coded. Survey was anonymous. SPSS package 20 was used for statistical analysis.

Results: Questionnaire was filled by 122 students, with 81% response rate. The best score 6.17 was given for the 'team functioning', followed by 6.04 for 'long working hours as a cause of medical error'. The domains regarding involvement of patient, confidence to report medical errors and role of training and learning on patient safety scored high in the agreed range of >5. Reverse coded questions about 'professional incompetence as an error cause' and 'disclosure of errors' showed negative perception. No significant differences of perceptions were found with respect to gender and prior experience with medical error (p=>0.05).

Conclusion: Undergraduate medical students at UOL had a positive attitude towards patient safety. However, there were misconceptions about causes of medical errors and error disclosure among students and patient safety education needs to be incorporated in medical curriculum of Pakistan.

53. Title: Perception of Central Induction Policy among trainees of Punjab

Introduction: CIP is new policy for induction into different specialties for residency. This policy faced a lot of controversy by the young doctors but it was implemented in May 2016 and no feedback was taken by the Health department about the effectiveness and flaws. This policy allocates seats based on the performance in medical school, marks of post-graduation entrance exam, degree & house job of public institute, experience of periphery & research. Previous policy was just to pass entrance exam and then approach the professor. This discrepancy aroused the need for data collection from the postgraduate trainees to determine its effectiveness.

Methodology: An interview based qualitative study was conducted in four Tertiary care hospitals of two cities of Punjab. Initially request forms were sent to 75 post-graduate residents inducted through CIP and before CIP. 39 residents participated in the study after giving consent. Participants were selected randomly. They were interviewed at the places and time chosen by the participants themselves. Interview questions were selected by the researchers after discussion. Interviews were recorded in interviewer's phones. Each interview was heard at least thrice, manuscripts were prepared in the language and words of the participant. Manuscripts were discussed by the team and themes identified.

Results: Based on interviews, three common themes in favor of CIP were 1) All the residents believe that this policy is merit based and everyone gets a fair chance of induction in specialty of own choice. 2) All slots are paid from day one and faces no

exploitation at the hands of clerical staff 3) Primary health care centers are being filled by young candidates.

Three bad themes of CIP are 1) issues with choice of specialty and place of work. 2) Delay in start of training 3) Discrepancy in special cases like wedlock, FMGs and authenticity of Research papers

Conclusion: Candidates are mostly satisfied with the Central Induction Policy model however there are areas which can be improved.

54. Title: A Study on Postgraduate Trainees Attitudes towards Research

Introduction: The declining number of researchers in the field of medicine over recent years has aroused interest to inquire into the causes leading to it. Thus, the objective of this study was to promote and preserve research culture amongst the young doctors by assessing the attitude of postgraduate trainees towards research.

Methodology: It was a descriptive, cross-sectional study in which an anonymous questionnaire, comprising of 32 questions in Likert scale format, was distributed to surgical, medical and allied residents of six institutes. Descriptive and inferential statistics were utilized to analyze the responses.

Results: The overall response rate was 56%. The mean score for "research usefulness" was 3.25; for "research anxiety was 2.64; for "positive attitude was 2.74; for "relevance to life" was 2.47; and for "research difficulty was 2.70. The overall mean was 2.76. Although majority of the postgraduate trainees perceived research useful to their professional lives but at the same time experienced research anxiety, difficulty during the process and thought it was irrelevant to their personal lives. There was no apparent difference between the mean scores for different genders, age groups and specialty.

Conclusion: The results of the study concluded that overall postgraduate trainees view research with a negative attitude.

55. Title: Educational Environment; Perception Of Junior Doctors Using Pheem Questionnaire At Social Security Hospital/Ucm, University Of Lahore

Introduction: The perception of educational environment is crucial for junior doctors to complete training in a specific field of heath profession. It greatly affects the quality of learning. Previously there was no satisfactory way of measuring educational environment. A lot of research initially on undergraduate's educational climate done before 1993 when first time postgraduate educational atmosphere was assessed in a residency doctors through a questionnaire. Genn and Harden (2001) highlighted the potential of understanding of learning environment for curriculum change and management (Harden, 2001).

Methodology: This cross-sectional study was conducted from 5th June to 5th July 2018 at Social Security Hospital, Multan Road, and Approval for study was obtained from The Ethical Review Board, University of Lahore. We assessed the teaching and learning atmosphere in the hospital using pre-validated PHEEM questionnaire. The respondents were asked to read each statement carefully and mark using 5-point Likert scale ranging from 'strongly agree' to 'strongly disagree'. The PHEEM questionnaire got filled by the participants after taking verbal consent. Chi-square test, independent t- test and ANOVA used for statistical comparison and p value <0.05 as significant.

Results: Out of 112 junior doctors, 100 doctors completed PHEEM questionnaire. Response rate was 83 percent. The junior doctors from medical (40%), surgical (37%) and pediatric (23%) specialties participated in the study. In training grade, there were house officers 58%, Medical officers 37% and Registrar 7%. Moreover 60 % were males and 40 % were female. The mean age of the doctors was 26.97+5.165.The scores for three subsets of autonomy, teaching and social support were 33.43+6.733, 36.70+8.032 and 23.53+5.088 respectively. The males perceived educational environment more positive regarding the autonomy and teaching than the female participants and this difference was significant (P value<.05 and .001 respectively). Female doctor's perception about the social support was negative as compared to males and the difference was significant. The overall pheem score (93.44+17.773) was more of a positive in study population. Although, difference in total pheem score between both gender was significant (p value <.05).

Conclusion: PHEEM questionnaire is a tool to find out the weaknesses and strengths of an educational environment in teaching hospitals affiliated with medical colleges for junior doctors. The specialties perception is another area that need improvement to promote training of doctors and will serve as guideline for future prospects of specific specialty, teaching and learning environment.

56. Title: Burnout among Pediatric Residents and Junior Pediatric Consultants Working at a Tertiary Care Hospital

Introduction: Burnout is prevalent amongst workers involved in helping professions like teachers and physicians. It is commonly high among doctors especially in surgeons, gynecologists and pediatricians. Burnout is a state of chronic stress causing various levels of physical and psychological exhaustion suffered by the individual. There is high level of burnout among residents and junior doctors particularly in their early training phase. Moreover, burnout among residents can affect the delivery of safe care, satisfaction of patients and physicians' emotional well-being. We planned this study to measure the level of burnout among pediatric postgraduate residents and junior consultants of senior registrar level.

Methodology: This cross-sectional study was conducted in the April 2018 among the postgraduate residents (PGR) and junior consultants (JC) working at The Children's Hospital Lahore. Participants were asked to complete Copenhagen Burnout Inventory questionnaire about burnout on 5 point Likert scale. '100 (always), 75 (often), 50 (sometimes), 25 (seldom) and 0 (never/almost never or according to intensity ranging from 'a very low degree' to 'to a very high degree'. Three question were added related to hospital factors. Data was analyzed using SPSS version 20. Students t-test and chi square test were used to compare the burnout. The survey was anonymous.

Results: A total of 227 participants including 177 PGR and 50 JC completed the questionnaire with a response rate of 84% and 86% respectively. There was a female predominance 140 (61.7%). Majority were from pediatric medicine 173 (76.2%). The mean personal and work related-burnout was high among PGRs as compared to JC (18.685.01vs 16.624.57) (p=0.008) and (21.145.57 vs. 18.565.52) (p=0.004) respectively. Similarly, there was significantly more burnout among pediatric medicine study participants as compared to pediatric surgery and pediatric diagnostics (radiology and pathology) in all domains (personal BO; p=0.030, work-related BO; p=0.021, patient related BO; 0.033 and hospital related BO; 0.001).

Conclusion: Tertiary care hospital postgraduate residents and junior consultants face moderate burnout regarding personal, work related, patient related and hospital related factors. Postgraduate residents had significantly more personal and work related burnout as compared to junior consultants but there was no difference based on gender or year of training. Largest specialty of Pediatric medicine residents and junior consultants face more stress as compared to other specialties. Our hospital administration must look into it and implement changes in the policy of hospital working without house officers.

57. Title: Burnout in Postgraduate Dental students of Basic Dental Sciences

Introduction: Burnout has been documented among undergraduate dental students and also dental practitioners, however, the evidence on post graduate students is less and none is reported regarding the Pakistani post graduate students.

Methodology: All the post graduate students enrolled in non-clinical dental sciences such as Oral Pathology, Oral Biology, Dental Materials and Immunology at the University of Health Sciences (n=30) completed the Maslach Burnout Inventory. Burnout was measured using the scales of "emotional exhaustion (EE), depersonalization (DP) and personal accomplishment. Medians, Means and standard deviation was computed for all the responses recorded on Likert scale. Mann Whitney-U was used to stratify the results according to gender and marital status. In all analysis p-value of < 0.05 was taken as statistically significant.

Results: The postgraduate students scored high for EE and PA domain while had exhibit less than threshold scores for DP. Males scored for EE and PA domains but less for DP domain as compared to female students. Single students scored high for EE and PA domains as compared to the married students. The highest ranked item was found to be "I feel used up at end of the work day" while the lowest rank was "I really do not care what happens to some recipients". There was no association of burnout with gender however marital status was linked to certain burnout items.

Conclusion: Burn out scores were exhibited for emotional exhaustion and personal accomplishment domains among post graduate students but could not be reported for the de-personalization domain. Marital status can be an influencer regarding an individual's state of burnout.

58. Title: Post Graduate Perception Of Stress Levels, Educational Environment And Their Association At Liaquat University Hospital, Hyderabad/Jamshoro

Introduction: The educational environment is an important determinant of the students' behavior and is related to their achievements. Different elements of educational environment i.e. physical, emotional and intellectual put great stress on the

students' minds and shapes perception of the educational environment.

Objective: To measure the post-graduate's residents perception regarding hospital educational environment and stress levels at Liaquat University Hospital, Hyderabad/Jamshoro (Pakistan).

Methodology: This cross sectional study was conducted at Liaquat University Hospital, Hyderabad/Jamshoro, from May, 2018 to July, 2018 on a sample of 94 post graduate residents working at the said hospital for more than 6 months. Sample was chosen via convenience sampling and after taking informed written consent, an anonymous self-administered questionnaire in English, consisting of Likert type modified form of Post-Graduate Hospital Educational Environment Measure (PHEEM) and Perceived Stress Scale, was used to obtain data. Data was analyzed via SPSS v. 19.0 and MS Excel 2013.

Results: Out of 130 residents, 72.3% completed the questionnaire. Majority of the sample was male (59.58%). The mean score of PHEEM was found to be 92.87 + 13.34 and the mean perceived stress was found to be high i.e. 28.34 + 6.45. Female residents reported higher levels of stress. Higher stress levels were also negatively associated with the PHEEM score.

Conclusion: Most of the residents perceived the educational environment as not favorable and the outcome was significantly associated with higher stress levels. There is dire need to address the areas of insufficiency and work towards provision of standardized clinical training.

59. Title: Perception of Plastic Surgery residents about concept, process and application of reflective practice in their training

Introduction: Reflective practice is essential for professional development of residents. Though earlier research has tried to explore the interventions to build and improve the reflective aptitude and skills of undergraduate students, there appears to be dearth of research pertaining to the understanding of reflection in the post graduate training programs.

Methodology: A qualitative study based on phenomenological approach and epistemological stance was used to generate views of residents on the research questions. A semi-structured interview pattern was used to get a detailed perspective of the 10 plastic surgery residents about the research questions. The interviews were written down accurately word for word. The author searched for key words and phrases. The data were then analyzed using an analytical process which involved a number of interconnected stages to classify and organize data according to key themes and subthemes.

Results: Five main themes emerged following data analysis: reflective practice-difficult to perceive, personal development, reflective practice for learning and patient care and reflective conversation. Participants had diversity of thoughts on the concept of reflective practice but they had similar understanding of applications of reflective practice including role in self-development, patient care and individual and collaborative learning; and improvement in practice and surgical skills. The participants did not limit the reflective conversation to self but considered 'conversation with others' as important component of reflection. Participants narrated that when they had to reflect upon situations related to patient care, interpersonal relations and learning sessions, the conversations held with their colleagues formed an important part of their decision for future course of events

Conclusion: The concept of reflective practice, though, is difficult to perceive but it is essential for professional development of residents. The findings also suggest that in communities of practice, reflecting together and sharing experiences with others is the new face of reflection. In order to serve the complex needs of today's communities of practice, ingenious and practical ways of thinking are required for productivity of reflective practice.

60. Title: On Toes": Designing An Epa Framework On "Teamwork In Obstetric Emergency Situations (Toes)" For Postgraduate Residents--- A Modified Delphi Study

Introduction: Poor teamwork and lack of interpersonal skills is responsible for 85% of maternal morbidity and mortality. Effective teamwork training reduces the perioperative mortality in Obstetrics but there is a lack of teamwork training and assessment at workplace. An EPA on teamwork is therefore the need of the hour, especially in the context of obstetric emergencies to reduce maternal mortality.

Methodology: A modified Delphi-quantitative study was done in a six months period after approval from Ethical Review Committee, in three stages. Purposive sampling of experts with FCPS and 10 years practical experience was done and 60 experts were invited to participate. In the first stage, extensive literature review was done to identify different teamwork

modules, their tasks and competencies. This provided a basis for a structured questionnaire; with some open-ended questions, which was sent to the participants in Round 1 Delphi. Items with more than 80% consensus were identified and descriptive statistics were calculated. Items on which agreement could not be established and additional items identified were sent to the experts again in round 2 for consensus. In the third round, all items of round 1 and 2 with their group responses and previous responses were sent to the participants and consistency/ stability of results was calculated by McNamara's chi-square test.

Results: Thirty-five participants responded in the first round, 29 in second round and 20 responded by the third round. In the first round, consensus was achieved on all the competencies (42) of four EPAs. Regarding the assessment strategies, assessment methods were ranked for importance whereas, frequency of assessments failed to accomplish consensus. There was also lack of agreement on the supervision levels. In the second round, consensus was achieved on all the additional competencies except three (17), assessment frequency and majority of the supervision levels. In the third round, all competencies attained consensus and the results were found to be highly reliable and statistically consistent as compared to the previous rounds. Each EPA had pertinent competencies relating to knowledge, skills and attitudes. The assessment methods were ranked as case based discussions, role-plays, simulations, short and long practice observations in their order of importance. Frequency of assessment was identified as four monthly and supervision levels were assigned for each EPA in all four years of residency.

Conclusion: EPA framework ON TOES was designed through a rigorous 3 round modified Delphi technique and resulted in a total of 62 competencies in four EPAs, with multiple methods of assessments four monthly and designated supervision levels for each EPA in each year of residency for postgraduate obstetric residents. This framework can be implemented in postgraduate obstetric programs to reduce maternal mortality worldwide.

61. Title: Burnout in Gynecology Residents---- A Myth or Reality

Introduction: Burnout is a psychological phenomenon which leads to emotional disturbances and difficulty in coping with day to day stressors of workplace environment.

It is emerging as a major problem in the recent past. The training program of gynecology residents produce a lot of stress related to the emergency condition of gynecology patients, its demand for quick treatment actions and expectations of the patient and their relatives. The large number of patients per resident arriving in emergency for treatment during each duty is also a big stress factor. Burnout leads to physical as well as mental disability reflecting in poor work quality and increased chances of medical errors. There are no such studies conducted here in gynecology residents about burnout and its predisposing factors. This study will try to identify the level of burnout in residents of gynecology at a newly developed medical college located in periphery of province away from central cities and their backup facilities.

Methodology: This is a cross sectional study conducted at Nawaz Sharif Medical College, Gujrat from 1st -30th June, 2018. The residents of gynecology from unit 1 and 2 were included on voluntary basis. Approval was taken from hospital ethical review board. Anonymous Performa including demographic detail and Maslach burnout inventory –human survey scale was distributed in the resident's .MBI-HSS was used to evaluate burnout in gynecology residents. Data analysis was done using SPSS version 20.Only the residents having gynecology as their primary field were included. This study was conducted over a period of 30 days from 1-30 June, 2018.

Results: Total 40 participants filled the Performa. 65% were below 29 years of age and 35% were between29-39 years of age. 60% were first and second year residents.40% were third and fourth year residents.75% were living at home and 25% at hostel. 75% were having income between 1-2 lacs. 25% were having income less than one lac.65% were doing duties for more than 85 hours per week. Mean score for all three components of MBI-HSS including emotional exhaustion, depersonalization and personal accomplishment were in high range indicating severe burnout in gynecology residents.

Conclusion: This study showed that severe burnout is prevalent in residents of gynecology. Certain modifications in the training program especially reduction in duty hours, more support by supervisors, and increase in the stipend of trainees could help in decreasing the burnout among the residents.

62. Title: Medical Students' Perception And Involvement In Academic Dishonesty: A Cross-Sectional Study In Lahore, Pakistan

Introduction: Academic dishonesty is a complex issue prevalent in medical institutions around the globe. The aim of this study is to determine the perception and involvement of medical students in academically unethical behaviors and potential relationship between the two variables.

Methodology: Methods: A self-administered questionnaire was used to collect data from 125 MBBS medical students of a private medical college of Lahore, Pakistan. Results were evaluated using chi-square and Fisher's exact test to determine the association of perception with involvement.

Results: 63.2% of respondents were aware of institutional regulations on academic dishonesty but had low understanding and support for these policies. 87.2% of students had witnessed a classmate cheating in a test but majority never reported these acts. High academic workload and family pressures were the leading causes of involvement in academic dishonesty. Sharing assignment's matter and helping a colleague in a test were some of the highly occurring form of academic misconduct. Participants considered that copying colleague's work without permission and using electronic gadgets for help in exams was a serious offence but copying with permission was not. There was no difference between involvement score of students who had awareness about regulations as compared to students who do not have information about it.

Conclusion: This study elucidates that participants get involve in cheating besides being aware of institutional regulations on academic dishonesty and believe that there is no harm in cheating with consent. Institutions should take measures to inculcate values of academic integrity in students and help them better understand the severity of penalties.

63. Title: Doctors' Experiences And Awareness Of Non-Technical Skills, A Way To The Development Of A Behavioral Marker System For Patient Management

Introduction: The complement technical skills, contributes to efficient task performance and improve 'safe practice' by health professionals. Success with non-technical skills training in other industries is achieved has led to widespread permutation to healthcare education, with non-technical skills. We explore the junior doctor's awareness and application of nontechnical skills needed to work in hospitals. The cognitive, social and personal resource skill that complement technical skill, and contribute to safe and efficient task performance is called nontechnical skill. There is growing awareness that non-technical skills are essential for competent practice and non-technical skills are the integral part of many training programs.

Methodology: To rank the importance and to determine the awareness of non-technical skills by the junior doctors essential to work efficiently and safely at hospitals. A cross-sectional study was conducted among the post graduate trainee doctors and house officers at department of medicine services hospital Lahore. Two hundred doctors participated in the study. Two questionnaires were distributed simultaneously to each participant. First one was structured to inquire about the ranking of ten nontechnical skills in the terms of importance from one to ten. The other questionnaire indirectly assessed these skills by scenario-based questions taken from text book of medicines.

Results: In the study 'Analysis of situation' was ranked as the most important non-technical skill and dealing with the patients in clinical isolation as least important. Significant difference was observed among non-technical skills mean rank score (p < 0.001). Analysis of situation was most important followed by fatigue management and task prioritization. Stage of medical training was associated with differences in ranking patterns for analysis of situation (p<0.001), decision making (p=0.046), communication skills (p<0.001), team working (p<0.001), leadership (p<0.001), fatigue management (p<0.001), task prioritization (p<0.001), and planning of work at call (p=0.001). 52% doctors were aware of proper use of non-technical skills (p-0.476).

Conclusion: It is observed that there is a discrepancy between the awareness and experience of junior doctor about non-technical skills. This suggests a training gap. There is a need for to update the medical education at undergraduate and postgraduate levels to adequately train the doctors in all the non-technical skills for further improvement in health care. These skills can be improved at institutional levels by simulation based training or by direct observation at workplace. These skills need to be integrated in medical curricula as a countermeasure for human error. Poor nontechnical skills are a significant cause of adverse medical events in patients presenting with accidents and other emergencies.

64. Title: Attitude Of Hospital Faculty Towards Collaborative Practice

Introduction: Collaborative practice is important component of Interprofessional education (IPE). This is an integral part

to train health care professionals. There is a very limited research probing the attitudes of hospital faculty about collaborative practice. The objective of this study is to highlight the faculty attitude towards collaborative practice in a hospital.

Methodology: Its cross-sectional study done by questionnaire through non-probability sampling technique. This study was conducted in Punjab Social Security Health Management Company Hospital Manga-Raiwind. The duration of study was two weeks (from 24 June 2018 to 7 July 2018). The sample size of the study was 30. All consultants including two from medical specialist, two surgeons, an eye specialist, an ENT surgeon, a child specialist, neonatologist, an anesthetist, physiotherapist, optometrist, audiologist, nutritionist all medical officers 18.

Results: When they were asked the Interprofessional communication skill, 10 (33.3) were strongly agreed, 15 (50.0%) were agreed and 5 (16.7%) were neither agreed nor disagreed. While asking about the use of medical term in their daily practice with each other, 11 (36.7%) were strongly agreed 13 (43.3%) were agrees 5 (16.7%) were neutral and 1 (3.3%) disagreed. 3) participants were asked about their role with health care profession team 16(53.3) were strongly agreed 11 (36.7%) were agreed and 3 (10%) gave neutral response

Conclusion: There is a very less awareness about the IPE. Hospital faculty attitude about knowledge, understanding and application of IPE is lacking in the daily hospital practice

65. Title: Patients' Attitudes towards Presence of Medical Students during Ultrasonography

Introduction: The consent and cooperation of patients regarding involvement of medical students in their care is vital to medical education. The use of ultrasound as a teaching modality is being increasingly incorporated in integrated curriculum by medical schools. Recent transitions in medical curriculum have also promoted early clinical visits to all specialties. Patients' perceptions towards presence of medical students during ultrasound examination have not been explored in previous studies which mostly reported positive attitudes in respective specialty.

Methodology: This descriptive cross-sectional study was conducted at Radiology department of University of Lahore teaching hospital (ULTH). Two hundred and forty-two patients who came for ultrasound were interviewed during the month of June 2018 using a structured questionnaire.

Results: Two hundred and forty-two patients had answered all the questions with 100% response rate. The mean age of participants was 32.32 years with 57% of females. Majority were Muslims (94.6%) and 71% educated to secondary / university level. Of the patients interviewed, 62% approved the presence of medical students during ultrasonography. 58.3% of the patients agreed to be examined by students under supervision, while 74.4% refused to scan by medical students in the absence of a doctor. Most of the patients (79.3%) knew their right to approve or disapprove students' presence. 64.9% of patients preferred scanning by student of same gender and among them 96% were females. Two third of the patients realize that it is important for students to scan patients as part of their training but they allow only minimum number of students (1-3) to be present during ultrasound examination.

Conclusion: In general the patients had positive attitudes to the medical students' involvement during ultrasonography. This study highlights the variation in patients' attitudes towards medical students according to gender, educational status, religion of patient and number of students. It is important that students and clinical supervisors should be aware of and respect the perceptions and integrity of patients involved in medical education.

66. Title: Octopus' Model Of Skills Of A Medical Professional

Introduction: Professional behavior or professionalism refers to the traits that a skilled person must possess in order to be maximally effective. When it comes to a medical professional, professionalism refers to the values and behaviors that connect a health professional to society. Despite of its high significance, a clear model that explains and identifies the required qualities, appears to be lacking.

Methodology: A focus group discussion of 17 final year medical students was conducted under supervision of an experienced moderator. The study comprised of discussion lasting for 90 minutes. Consensus was identified by content analysis and numerical analysis.

Results: Out of 28 competencies identified initially, eight professional competencies were shortlisted which included learning skills, behavioral skills, procedural skills, self-regulation skills, organizational skills, research skills, teaching skills, emotional

skills. This resulted in generation of octopus skill model of a medical professional, which would help in better understanding of medical professionalism.

Conclusion: Being generated by medical students, the 'Octopus' Model of Skills is expected to give ownership of these eight competencies to all future doctors and may serve as students' perspective in curriculum development.

67. Title: Emotional Intelligence of Medical Teachers

Introduction: The present study aimed to analyze emotional intelligence of medical teachers of PMC and KE and consider the value of emotional intelligence to medical teaching. Emotional intelligence domains are aware of own emotions, managing own emotions, motivating oneself, Empathy for others, handling relations. Emotional intelligence helps teachers during teaching process to understand the emotions of students and engage them. For teachers, these skills are imperative not only for their personal well-being but to improve student learning.

Methodology: This cross sectional study was conducted at Poonch Medical College (PMC) and King Edward (KE) Medical University Lahore in July 2018. Ethical Approval was obtained from the Institutional Review Board prior to data collection. Simple random sampling technique was used to collect information form respondents. Ethical considerations like confidentiality and anonymity of study subjects were ensured. Total no of participant was 108 (male=52, female=56, senior faculty=39, junior faculty=69, KE=28, PMC=80). Emotional awareness was assessed using the Emotion Intelligence Questionnaire, is a self-report questionnaire of 50 items rated on a 5-point scale (1 = never apply, 3 = sometimes apply, 5 = always apply) and includes 6 scales: (a) self-awareness, (b) managing emotions (c) motivating oneself (d) empathy (e) social skills.

Results: The results show that the average of self-awareness and social skills in female teachers are higher than male. Male teachers are more consistent and precise in their managing emotions than female teachers in our study. But overall emotional intelligence level in male and female teachers is same, there is no significant difference between genders. By comparing the results of faculty, we conclude that self-awareness, managing emotions and social skills are prominent in junior faculty as compare to senior faculty. Further investigation of results shows that senior faculty is stronger in motivating oneself and are empathic. But there is no significant difference in general emotional intelligence of senior and junior faculty of our study. But the literature shows that emotional intelligence is sophisticated in senior faculty.

Conclusion: In a nutshell, emotional intelligence is important for teachers. Teachers with emotional intelligence adjust to different trials such as stress and aids in true emotional expression, admiration, and civility. Teachers with no emotional intelligence live in confusion, are under continuous frustrations and despair hence find it tough to live with students serenely. The use of emotional intelligence instruments to inform professional growth by identifying areas of strength or weakness for development to improve the quality of teacher social interactions. Hence, the goal of this study is to serve as a pilot to inform future investigations into this possible construct.

68. Title: The Insulting Behavior Of Seniors Toward Their Junior's Doctors

Introduction: Harassment and insulting behavior with junior is a regular phenomenon that happens in various professions, and the medical field. There is evidence that medical college students, training doctors, doctors venture research as well as other different healthcare professionals, inclusive of nurses, suffer from harassment or discouragement. Workplace mistreatment is an important issue due to its negative impact on the health and well-being of affected persons. It has been associated with high ranges of stress, tension, depression, concentration troubles, insecurity and absence of initiative. Individuals who have been bullied have additionally been found to have drastically decrease levels of job satisfaction and have an intention to resign the job

Methodology: A cross sectional study was conducted at Nawaz Sharif social security hospital (NSSSH) Lahore during June, 2018. The population included in the study was house officers and medical officers. A convenient sampling size includes one hundred and fifteen which include both males and female, most of them were in age group (21-45). A data was collected by a predesigned, pretested questionnaire survey which was developed after extensive literature review and distributed to medical professionals in their hospitals. Verbal informed consent was taken and confidentiality was ensured.

Results: Total of 115 doctors of Nawaz Sharif Social Security has participated in this study ,Male(43.5%) ,Females(56.5%).Ages varies between 20-25 (60%) ,35-30 (31.3%) and 30-50 (7.8%).this survey involves house officers (81.7%) and medical officers (17%) approximately 75% of the junior doctors faced the insulting and discouraging behavior of their seniors at their work

place .The most common discouraging behavior was unjustified criticism only 15 % has only formal complains .Respondents did not make a complaint against the insulting and discouraging behavior of senior doctors.

Conclusion: Bullying or Insulting behavior is faced by large population of junior doctors in Pakistan. The most common perpetrators of this bullying are consultants. Principal changes are required at national and individual level in Pakistan to solve this problem. To prevent its unwanted consequences in health care system. If the problem persist and no proper step is taken at national level to solve this issue than for sure we are going to face lot of problems at our work place we lost the confidence their working ability , desire to work and to serve their nation with best of their ability .junior and seniors are colleges so they should respect each other one day the juniors are going to take place of their seniors so the seniors should be the role models for their juniors because junior are going to do the same with the upcoming generation so we should be careful regarding our behaviors with our juniors to provide the good doctors in future.

69. Title: Neurology-The Mcdreamy Mania Or A Choice Of Sane Minds

Introduction: Neurology is a specialty which encompasses bewildering aspects and perplexed diseases. It is not possible for a general physician to treat such myriads of diseases with highly variable diagnostic techniques and its implications. Being a complex field, neurology is naturally the choice of inquisitive, progressive and intelligent people. This study aims to evaluate the influence of personality traits of future doctors, in choosing Neurology as a career option.

Methodology: A cross-sectional survey was conducted amongst 453 medical students and house officers in Islamabad, Pakistan. Using the Big Five Inventory scale, the questionnaire reflected 5 personality traits namely openness, conscientiousness, extroversion, agreeable, and neuroticism. Data was analyzed using SPSSv23. Independent sample t-test was used to compare the personality traits of participants opting for neurology to those choosing other specialties.

Results: The mean difference of percentages for conscientiousness was significantly greater for males ($p=0.019$), whereas for neuroticism it was higher in females (p value=0.000). The means for extroversion and openness were significantly higher in participants opting neurology than those choosing internal medicine; openness also being higher in comparison to all other groups combined. Similarly for neuroticism the mean difference was significant in Dermatology and General surgery as compared to Neurology ($p<0.05$).

Conclusion: In developing countries where subspecialties are still evolving, there is a prodigious void. Neurological disorders contribute to an ever-increasing burden on the healthcare framework which goes unaddressed. Hence a deeper exploration into these intricate personality traits is needed. We recommend installation of career counselling programs addressing specialty choices in medical schools.

70. Title: Proportion Of Exposure Of Passive Smoking In Teenage GROUP AND Symptoms Precipitated After Exposure To Second Hand Smoke

Introduction: One-third of the world's adult populations are smokers (47% of these being men, 7% women) and each year, tobacco causes 3.5 million deaths, or about 10,000deaths each day. It is predicted that in 20 years, this yearly death rate from tobacco use will be more than 10 million people.1 Second hand smoke (SHS) or passive smoking is defined as 'smoke inhaled by an individual not actively engaged in smoking but due to exposure to ambient tobacco smoke.2, SHS increases risk of sudden infant death syndrome (SIDS or cot death), middle ear disease, asthma, respiratory disease, lung cancer and coronary heart disease. Hot smoke rises but tobacco smoke cools rapidly which stops its upward climb and starts to descend. A heavy smoker who smokes indoor causes permanent low lying smoke cloud that other house holders have no choice but to breath.

Methodology: Descriptive cross-sectional study was conducted at Army Public School and College, West ridge III, Rawalpindi of 6 months duration (September 2012 till February 2013). There were 3000 students enrolled between the ages of 13 and 19 and sample size was estimated to be 500 using WHO sample size calculator, (with Confidence Level (CL) of 95%, Anticipated population proportion (P) of 0.05 and Absolute precision (d) of 0.02). Systematic random sampling was done. Sample size was the requirement out of 3000 so3000/500=6.

Results: Five hundred students were selected for the study, out of which 279 (55.8%) had exposure to passive smoking while 221 (44.2%) were not exposed to passive smoking. Mean age of the exposed group was 15.06 ± 1.805. There were 132 (47.3%) males and 147 (52.7%) females in the exposed sample. When asked about the relationship who smokes in the exposed group, 87 (31.2%) were fathers, 5 (1.8%) were mothers, 45 (16.1%) were grandparents and 142 (50.9%) were some other relations. Out of the 279, 175 (62.7%) students were exposed to SHS every day, 4 - 6 days per week were 22 (7.9%), 3 days per week were

14 (5.0%) and less than 3 days per week were 68 (24.4%). One hundred and seventy five (62.7%) spend less than 1 hour while 51(18.3%) spend 1 - 2 hours, 28 (10.0%) 3 - 4 hours and25 (9%) spend more than 4 hours per day. About 189(67.7%) were exposed to 1 - 2 cigarettes, 53 (19.0%) to 3 - 5 cigarettes and 37 (13.3 %) to more than 5 cigarettes per day.

Conclusion: Smoking is a major public problem concern the world over. It is one of the major preventable causes of premature death and disease in the world. Fourteen to seventeen year olds are among a vulnerable group of individuals in society and susceptible to cigarette smoking. The consumption of cigarettes in Pakistan was estimated at 90,000,000,000 cigarettes in 2005.8Parent and guardians shall recognize their tactics/ways for decreasing smoking in the home in and keep their children safe for exposure. Health education is very important in building their capacity to make their livings smoke free

71. Title: Intention & Knowledge Of Fresh Dental Graduates Of Fmh College Of Dentistry Lahore Related To Dental Practice Management

Introduction: The subject of dental practice management transfer knowledge about practical aspect of running a dental practice. Dental practice is getting complex day by day, whereas a dentistry graduate is oblivious of world he is facing after house job. Dental practice management related teaching is neglected aspect mentioned in currently implemented curriculum of baccalaureate of dental surgery. This study explored the fresh graduate's aspiration, teaching and knowledge of fresh graduates related to dental practice management.

Methodology: The study was quantitative, descriptive type and was conducted at FMH College of medicine & dentistry, Shadman, Lahore. All fresh graduates were asked to fill a proforma devised to investigate intention, teaching and knowledge related to practice management. The proforma was divided into three blocks, first block was related to fresh graduate intention related to future dental practice, second block was about teaching of practice management and third section tested knowledge of fresh graduate related to dental practice management

Results: The proforma was distributed to all sixty two fresh graduates and response rate was about eighty percent. Majority of respondents were females (n=37), they wish to join clinical fields (n=42), want to start full time practice (n=31) but more than half (n=21) think they are not ready to run dental practice. Teaching of dental practice management was neglected aspect according to majority of respondents (n=28) and they want more time is allocated for teaching of dental practice management. The knowledge related to various aspect of dental practice management varies among fresh graduates, the legal and financial aspect were major weakness.

Conclusion: Fresh graduates have not been taught dental practice management There is no statistically significant difference in knowledge of graduate who think they are ready for private practice from those who think they are unprepared for private practice.

72. Title: Improving Work Force In Health Sector: A Survey On Motivation Of Medical Graduates And Residents On Willingness To Practice In Rural Community

Introduction: Future career choice to practice in rural community is influence by large number of factors but motivation is the key intention factor in the working life span of doctors that plays an important role in attraction, recruitment and retention of medical graduates for rural practice.

Research problem: Lack of motivation of medical graduate to decide about their career choice to practice in rural community is a major problem faced by Pakistan and low and middle income countries. Purpose is to determine the intention of medical graduates and residents on willingness to practice in rural community and to identify factors that influence their motivation

Methodology: Research Design: Quantitative study: Descriptive, Cross sectional Study

Site: Sharif Medical and Dental College, Lady Willingdon Hospital and Nawaz Sharif medical college Gujrat in June 2018, Sample size: 225, Sampling technique: Non probability convenient quota sampling, Data collection technique: Pre tested Questionnaire

Results: 240 medical graduates and house officers participated in study. Out of which 159 (66.3%) medical graduates showed positive response for willingness to practice in rural community with 47% degree of intention for likely to work in rural community. Response was more marked in fourth year students as compared to final year medical graduates and house

officers, Motivating factors for rural placement include were less experience health care professionals 78 (32.5%), exposure to wide spectrum of disease 72 (30.3%) and 101 (42.1%) that rural placement provide opportunity to deal with community health problems while external motivating factor were financial incentive 68 (28.6%), and selection policy 90 (37.8%).

Conclusion: Motivation is the key determinant in working life span strategy and is effected by large number of factors both intrinsic and extrinsic. Both internal and external motivation predicts future career choices of doctors for rural placement. So appropriate planning, refinement in educational programs, remuneration in form of financial incentive, initiation of scholarship schemes and mandatory rotations to serve in rural area, effective support of health system, , and job safety in addition to selection policy at induction of training program remove major obstacle in shortage of workforce in health sector

73. Title: "The Changing Trends Of Dengue Fever Consecutive Outbreaks In A Tertiary Care Hospital"

Introduction: Dengue is vector borne disease transmitted by Aedes Aegypti mosquito bite. WHO ranks dengue world's 17th neglected tropical disease (50 million cases/year; 2.5 million people residing in high risk areas). Pakistan is frequently facing dengue outbreaks during summer and fall seasons despite of awareness campaigns and preventive measures. Current study was conducted while RIHS observed rising number of dengue cases (June 2015-Jan 2017). Study aims to compare hematological and serological profile in subsequent outbreaks. This may lead to measures for better patient care and outcome, to minimize complications and enhance facilities in health care centers as per changing trends of Dengue.

Methodology: This descriptive cross sectional study was conducted at Medicine Dept. RIHS (July2015-Jan2017) after ethical approval. Total 130 confirmed adult Dengue fever cases selected from RIHS Dengue isolation wards by convenience sampling. 65 cases included in group A (Jul.2015-Jan.2016) & 65 in group B (Jul.2016-Jan.2017). Pre-existing hematological disorder, ITP, malaria/typhoid co-infection, liver disease & terminally ill cases excluded. Demographic details, clinical findings, hematological counts, dengue serology (Dengue NS-1, IgG & IgM) documented. Data analyzed by SPSS-V21, frequencies calculated for qualitative variables & mean+SD for quantitative variables; Chi-square and student-t tests applied with significant $p<0.05$.

Results: Among 130 cases (71.5% males & 28.55% females), with no significant difference in gender (p=0.846). Mean age was 29.9+10.8 years (group A) vs. 31.7+14 years (group B; p=0.410). Mean symptoms duration 4.7+1.5 days (group A) vs. 3.7+2 days (group B); shorter duration in group B (p=0.003). Fever, vomiting and abdominal pain were comparable (p>0.05), bleeding and myalgia frequent in group B; headache in group A (p<0.05). Group A had 95.4%(DF), 3%(DHF) and 1.5%(DSS) Vs. 80%(DF), 13.8%(DHF) and 6.2%(DSS) in group B (p=0.028). Mean platelet count 48,003+38,030 (group A) vs. 30,170+27,087 (group B; p=0.003). No difference in dengue serological markers (p>0.05).

Conclusion: Subsequent dengue outbreaks show increased bleeding tendency, myalgia, thrombocytopenia, higher frequency of DHF and DSS stage presentation as compared to classic DF despite of earlier approach to hospital after symptoms onset. There is need to revisit the screening and management guidelines as per changing trends in subsequent outbreaks. Measures need to be taken regarding awareness campaign, early approach to well-equipped facility, monitoring hematological profile, diagnostic tools and improving patient care in severe forms of dengue i.e. DHF and DSS. Dengue being preventable and treatable disease needs multi-level, systematic and coordinated approach for better outcome.

74. Title: Building the first Primary Immune Deficiency Diseases Institute in Pakistan.

Introduction: Primary immunodeficiency's (PIDs) are a widely heterogeneous group of inherited defects of the immune system consisting of at least 350 underlying genetic deficits currently known. Patients with PIDs can present with, or develop recurrent and chronic infection, often by multiple microbes but also sometimes by a single pathogen, as increasingly recognized. The number of PIDs is expected to grow exponentially in the coming years. Pakistan has a population of 200 million and documented highest consanguinity in the world. Yet for a population this size we have very few reports of PIDs from Pakistan in the literature.

Methodology: The ten warning signs of primary immune deficiency are well-known and well cited. They were included as a part of the questionnaire given to physicians. Other questions related to PIDs were included as well. This was a cross sectional study. Random physicians were approached from different tertiary care medical colleges and the attached hospitals in Pakistan. Physicians were asked to fill out the aforementioned questionnaires. All medical graduates from a recognized

medical college in Pakistan and currently practicing were eligible to take part in the study.

Results: A total of 141 Health Care providers took part in the survey, from four major medical colleges. About 55% of the participants had not seen any patients with PID. 86% were not aware of the 10 warning signs of PID and 97% were not familiar with PIDs family history. About 50% did not offer any treatments to their patients with PID. 61% thought that PID patients are always seriously ill. 84% thought that patients with PID should not receive any live vaccines. Lastly, 55% of those interviewed did not know where to refer a patient with PID.

Conclusion: Pakistan is in desperate need of a proper PIDs institute for the prevention, recognition and management of PIDs. A registry also needs to be established. Research done in Pakistan in the field of PIDs is expected to have major global impact towards our understanding of these complex and multisystem diseases.

75. Title: Perceptions Of The Strabismus Among The Age Of 11-16 Years Old School Children

Introduction: Education is the key and a prerequisite for health. However, education cannot achieve its potential if young people do not attend school because of poor health and related conditions. Ocular misalignment (Strabismus) is one of the major reasons of refractive error in children. Studies have proved that Surgery to improve ocular alignment appears to herald major improvements in the quality of psychosocial functioning for the majority of adults.

Methodology: DESIGN: qualitative, descriptive, cross sectional, survey study.

Methods and materials: This study was conducted in Abbottabad district of KPK, Pakistan. Data collections were started from four schools in the month of August 2012, with equal representation of boys and girls. To increase trustworthiness of the data, schools were chosen from both government and private sectors. Two different instruments of the qualitative research i.e. semi structured interview and focus group discussion were used to collect the data. Four students, for semi-structured interviews and six students for focus group discussion from age 11 to 16 no gender restrictions were conveniently chosen with help from teachers, fifty percent participants were wearing spectacles for refractive errors of vision.

Results: The main findings of this study were encouraging to note that the students had some understanding about refractive errors particularly about Squint in eyes. According to our study, Ocular misalignment has negative effect on life including education and marriage especially in case of girls as most of affected children feel ashamed of having squint.

Conclusion: Increasing awareness and education in the community, especially addresses the social and cultural sides of the refractive errors is very important. The school setting offer good opportunities for implementation of health education programmes. These 11 to 16 years older children can be part of child-to-child health promotion package to help and look after the younger one. Adopting a holistic approach in providing health facilities, which apart from other aspects addresses the cultural, social and economic factor, is needed. This study provides baseline data on the perceptions of squint among 11 to 16 years older school children. This data can be helpful in designing appropriate eye health education programme for school children and teachers.

76. Title: Level Of Stress In Students Of A Private Medical College In Lahore, Pakistan

Introduction: Medical education is quite demanding both physically and emotionally (Radcliffe & Lester, 2003). A medical student is required to work hard to cover the extensive course material. They have to remember a large amount of material in order to pass the exams. They spend up to 7 hours a day in the medical college, where they have to attend lectures, practical and small group discussions within the college premises, and when they are taken to the hospital for the early clinical exposure, they have to interact with the patients, take history from them and practice their clinical skills on them. Medical students often report being tired.

Methodology: The Medical student stressor questionnaire (MSSQ), which is a validated questionnaire, was used in a descriptive cross-sectional study to assess the various stressor that a medical student deals with in academic life at the University College of Medicine (UCM) at University of Lahore (UOL). The questionnaire was made available on google forms and the link was shared with the students on MOODLE. Participation was voluntary. All the students enrolled in the first and second and third year MBBS classes at UCM were included in the study. The students of fourth and final year MBBS classes at UCM were excluded from the study. The questionnaire has 20 questions that determine the academic, interpersonal &

intrapersonal, teaching and learning, social, drive and desire, and group activities related stressors. The students were asked to provide data related to their gender, study and physical activity routine and family and social support. The data was analyzed using SPSS software version 23.

Results: On the MSSQ, second- and third-year students reported being most stressed by the academic related stressors, while the drive and desire related stressors were rated as causing mild to moderate stress. Interpersonal and intrapersonal related stressors along with teaching and learning related stressors and group activity related stressors and social related stressors were rated as causing moderate stress.

First year MBBS students rated the teaching and learning related stressors to be the most stressful four them, followed by academic related stressors, interpersonal related stressors and social related stressors. They rated drive and desire related stressors to be causing mild stress. Group activities related stressors were rated as least stressful by the first year MBBS students as compared to the second- and third-year students.

Conclusions: First, second- and third-year students rated academic related stressors and teaching and learning related stressors as being most stressful. Measures should be taken to make the learning environment less stressful for them.

77. Title: Effect Of Estrogen Receptor Alpha Genes Variants On Severity Of Breast Cancer

Introduction: Reproductive factors pose a risk for sporadic breast cancer (BC) development owing to the lifetime exposure to estrogen, a hormone responsible for cell proliferation in the breast. The variants of the estrogen receptor (ER) alpha gene have reportedly been associated with BC risk in numerous populations. The objective of the study was to determine whether the risk and severity of sporadic BC were associated with the rs2228480 and rs3020314 (ESR1) variants in a Pakistani population.

Methodology: A total of ninety DNA samples from sporadic BC patients were studied. These samples were subsequently genotyped by Pyrosequencing. Later, the epidemiological, clinical, and reproductive factors were analyzed. Statistical tests conducted included the $\chi 2$ test, Fisher' s exact test, and Mann-Whitney and Kruskal-Wallis tests or their parametric equivalents.

Results: There was a high frequency of the rs2228480*GG genotype among the ER-positive tumors (OR = 2.13; 95% CI = 1.189–3.816) and it underlined minor association with clinical stage 0 (OR = 0.324; 95% CI = 0.116–0.904). The rs2228480*GA genotype was associated with minor ER expression, whereas rs2228480*GG was associated with high expression of the progesterone receptor (PR). The frequency of rs3020314*CC was high among women who breastfed (OR=2.11; 95% CI=1.203–3.702), and it showed high association with clinical stage 0 (OR=4.383; 95% CI=1.606–11.96) whereas it had minor association with systemic arterial hypertension (OR = 0.53; 95% CI = 0.319–0.880).

Conclusion: The rs2228480 and rs3020314 variants did not alter sporadic BC risk, but they did modulate the BC severity

78. Title: Gestational Diabetes Mellitus Is Still A Great Problem

Introduction: Gestational Diabetes Mellitus (GDM) refers to diabetes that develops in the course of pregnancy and remits following delivery. It is defined as the appearance of hyperglycemia in a pregnant woman previously not known to be diabetic. It predicts risk for overt diabetes in women1, 2. GDM affects the health of pregnant women and infants. About 3-10% of all pregnancies are complicated by diabetes. Annually 21 million of the world (7% of the population) is reported4. It is more common in developing countries including India and Pakistan. The increasing prevalence in developing countries is related to decreasing levels of physical activity, changes in dietary patterns and increasing prevalence of obesity. In Pakistan it is difficult to predict any uniform prevalence levels because of wide differences in living conditions, socio-economic levels and dietary habits.

Methodology: This was a prospective/descriptive hospital based study conducted at a tertiary care hospital Hyderabad from September 2014 to November 2014. Total 168 pregnant females between the ages 20-40 years & in their 24th to 28th week of gestation were enrolled for the study. The ladies were asked to come in the morning with an overnight fast of 10-12 hours for Oral Glucose Tolerance Test (OGTT). All these pregnant ladies were offered 75 gm of glucose D dissolved in 100 ml of plain water. After two hours, blood sample was collected. The glucose value exceeding 140mg/dl was declared as a case of GDM.

Results: A total of 168 women were enrolled GDM was diagnosed in 25(14.8%) women. Most of the participants were below 26 years of age [47(27.9%)] and highest number of participants were in the age group 20-25 years so the prevalence rate was

higher in this group. The mean age of participants was 30.2±5.83The prevalence rate of gestational diabetes mellitus was higher in women with age group 31-35 years (36%). Majority of the patients with GDM were 3rd and 4thgravidas (32%) and multipara (40%) out of 27 cases of GDM. Twenty seven women (16%) women had family history of diabetes mellitus. Among this 12/27 (44.4%) women were found with GDM. Total 14 (8.33%) women were found obese, out of these 14 women, 8 (57%) women had GDM.

Conclusion: The present study reports 14.8% prevalence of GDM from a tertiary care hospital of Hyderabad. A significant higher incidence of GDM was present in females who are aged, multiparous, and overweight & have relative's history of diabetes mellitus. This study emphasized the necessity for GDM screening in our population because the number of medium/high risk population for GDM was high & ought to be assessed after proper risk stratifications. So it is concluded that early screening of pregnant females gives an early diagnosis of GDM & it is the necessity of an hour.

79. Title: Mutational Spectrum Of Cyp1b1 In Pakistani Families Affected With Primary Congenital Glaucoma

Introduction: Glaucoma is the second prominent cause of impaired vision, in global world. Over 60 million individuals are presently affected all over the world and 12 million are sightless because of glaucoma. Primary congenital glaucoma (PCG) is frequently occurs in childhood and lead to blindness during newborn or in very young children. PCG, is describe by structural defect in the trabecular meshwork and beginning of disease in newborn or very young age period before three years. It is most prevalent in populations with high rates of consanguineous marriages. The main gene involved in PCG is CYP1B1 that is located on GLC3A.

Methodology: Two PCG affected clinically well-characterized consanguineous families were studied. Genomic DNA was extracted from EDTA blood samples through "QIAGEN" extraction kit. Primers were specifically designed for amplification of CYP1B1 gene. Amplification was performed on Thermal Cycler ABI I9700. The sequencing reactions were performed on an automated ABI PRISM® 310 Genetic Analyzer, and analyzed in control subjects and patients to identify the disease-causing mutations.

Results: Analysis of four PCG affected members from two families showed homozygous variations in CYP1B1 including one pathogenic missense i.e. p.R390H, and two SNPs one synonymous D449D and one missense N453S were identified in both families. Different bioinformatics tools such as Polyphene 2, SIFT, VEP and VEST were used to evaluate the pathogenic effect of missense mutation. Multiple sequence alignment of CYP1B1 protein from various species was performed using ClustalW2.1. And it was observed that Arginine at 390 positions is conserved in all species. A mutation molecular 3D structure was also generated using I-TASEER protein modeling server to determine intra-molecular changes which leads to deleterious effect.

Conclusion: Major cause of PCG is mutation in CYP1B1 gene. The clinical significance, among the relatives of primary congenital glaucoma is to identify the risk of developing glaucoma. In family cases, these mutations will be helpful in decreasing the syndrome rate. These investigations will give us advantage to identify the mutations in pathogenesis in different people and will allow us to improve simple and rapid diagnostic test for analyzing such cases.

80. Title: Quality Of Mcq's Developed By The Faculty Of Public Sector Medical College

Introduction: Assessment is one of the vital components of teaching and learning cycle. In the subject of medical education, many assessment tools are used but among these tools, Multiple Choice Question (MCQ) is an entrenched, trustworthy method of assessing knowledge. MCQs are developed by the faculty of Sheikh Zaid Medical College for MBBS examinations and are the mandatory requirement by College of Physicians and Surgeons of Pakistan (CPSP) to become supervisor. The quality of multiple choice questions developed by the faculty of Sheikh Zaid Medical College is not up-to the mark that is why I planned this study to identify commonly occurring flaws and suggest measures for quality improvement.

Methodology: This quantitative study was conducted in Sheikh Zaid Medical College Rahim Yar Khan over six month period after the approval of the study proposal. Every faculty member is supposed to write 25 MCQs in order to become supervisor. I collected 500 multiple choice questions from 25 faculty members ready for submission to CPSP. The quality of all MCQs was checked in terms of item writing flaws and cognition level.

Results: Absolute terms were observed in 10(2%), vague terms in 15(3%), implausible distracters in 75(15%), extra detail in correct option 15(3%), unfocused stem 63(12.6%), grammatical clues 39(7.8%), logical clues 18(3.6%), word repeats

19(3.8%), >then one correct answer 21(4.2%), unnecessary information in stem 37(7.4%), lost sequence in data 15(3%), all of above16(3.2%), none of above 12(2.4%) and negative stem 23(4.6%). Cognition level l (recall) was observed in 363(72.6%), level ll (interpretation) in 115(23%) and level lll (problem solving) in 22(4.4%) items. Total 378(75.6%) flaws were identified and four commonest flaws were implausible distracter 75(15%), unfocused stem 63(12.6%), grammatical clues 39(7.8%) and unnecessary information in stem 37(7.4%).

Conclusion: Faculty Development Program (FDP) should be planned in order to improve the quality of items. Our main objective is to decrease the number of item writing flaws and improve cognition level towards problem solving and application of knowledge.

Key Words: Items, items writing flaws, cognition level, faculty development program.

81. Title: Perception of Medical students regarding educational environment in Sheikh Zayed Medical College Rahim Yar Khan; A cross-sectional survey using the Dundee Ready Education Environment Measure (DREEM) questionnaire"

Introduction: The learning environment is the physical surrounding in which learning takes place. Positive learning environment is mandatory for more and more learning in every aspect of life. The learning environment at Sheikh Zayed Medical College (SZMC), Rahim Yar Khan has not been previously studied. The main objective of this study was to measure the learning environment of medical students in pre-clinical years. So, this study was carried out using the Dundee Ready Education Environment Measure (DREEM) to obtain student perceptions about the learning environment of a newly established medical college in remote area of south Punjab.

Methodology: The DREEM questionnaire was administered to undergraduate medical students in first and second year class (basic sciences) during the first two weeks of June 2015. The students' perceptions were evaluated by noting their degree of agreement with a set of 50 statements using a Likert-type scale. The mean overall score and the scores of subcategory were calculated and compared among different respondents.

Results: Two eighty six of the 300 students (95.33%) completed the questionnaire. The overall mean score was 113.68 (maximum score 200). The mean+SD score for students' perception of learning was 26.65±10.235 (maximum score, 48), while the score for students' perceptions of teachers was 26.63±10.177 (maximum score, 44). The mean+SD scores for students' academic self-perception, students' perception of the atmosphere, and students' social self-perception were 17.17±6.73 (maximum score, 32), 26.89±10.89 (maximum score, 48), and 16.34±6.70 (maximum score, 28), respectively.

Conclusion: The perception of student's educational environment was positive amongst all domains of DREEM inventory. This indicates an adequate level of satisfaction in most areas of the existing environment. This means that educational environment will enhance learning but still certain areas need improvement. Regular student feedback is needed after addressing the deficient points. Continuous evaluation of learning environment should be emphasized.

82. Title: Patient's Perception Analysis; A Tool to Enhance Service Quality of Dental Care

Introduction: Now-a-days health care service is a word of mouth to enhance service quality. Patient's perception plays a key role as it determines the degree of patient's satisfaction. Evaluation of dental service quality sheds more light on relationship between service quality and patients satisfaction in health care setting. The aim of present study is to determine patient-dentist relationship and to explore the elements which are responsible for the GAP between patient's perception and satisfaction.

Methodology: A cross-sectional survey was conducted using validated questionnaire among patients attending out-patient Department of University Dental Hospital, University of Lahore over a period of 3 months. The questionnaire was designed according to Donabedian and SERVQUAL models of service quality assessment. A total of 200 questionnaires were selected for the study based upon study criteria.

Results: Overall patients were satisfied /agreed with the elements of 3 major Domains; Structure, Process, Outcome. Highest percentage of positive responses was obtained in Process domain (67%). In Structure Domain the agreed responses regarding hospital facilities outnumbered the other elements (59.5%). In Outcome Domain overall perception fell into satisfied category (58.5%). Consideration of professionalism, interaction, reactivity and administration was also expressed.

Conclusion: Present study provided a conceptual framework to analyze patient's perception and satisfaction in dental care. Therefore, a diagnostic tool was developed to assess dental service quality and to discover the areas that needs improvement.

83. Title: Predatory Journals and bogus Publications! Academic scams of the 21st century

Introduction: The traditional publishing of printing journal articles has undergone a paradigm shift in the last two decades with the emergence of an open access model, which allows researchers all around the globe to access research without barriers and to increase the impact of their hard work. At the same time another model of publishing based on academic exploitation of authors and researches has emerged termed as "Predatory Publications and Journals" The aims of this presentation are to highlight the threat of predatory publishing and to discuss guidelines to detect and avoid predatory journals

Methodology: Academic publishing has undergone a paradigm shift in the 21st century and the open access (OA) model has gained momentum. This has helped disseminate knowledge to a wider audience. Unfortunately, some groups and individuals have exploited this situation to launch online journals of reputable credibility called predatory journals. Predatory publishing refers specifically to publishing practices which exploit the author-pays model by "setting up bogus publishing operations and tricking authors into thinking that they are legitimate scholarly publishing outlets". These journals or publishers abuse the open-access publishing model and are interested in money making rather than disseminating research

Results: Both young and experienced researchers have been duped by the predatory journals which are now in thousands. They are characterized by a very rapid publishing without any formal and transparent peer review process, lack of qualified editorial board members and false address. They mostly operate from India, China and Nigeria. Guidelines have been issued and websites like (www.thinkchecksubmit.org) offer resources to detect predatory journals.

Conclusion: A collaborative effort from all stake holders (Professional and academic organizations, medical institutes, authors and editors) is required to increase the awareness regarding the rising menace of predatory and unethical publishing. The future fight against the predatory publishing will be long and should employed multi-pronged strategies. Some of the winning strategies can be training the future researchers, academics and students; implementing strict and clear rules regarding publishing, and financially supporting researchers from the developing countries

84. Title: Four Legged Chair: Dental students Qualitative perception about teaching faculty, Administration and Academic Environment at University college of Dentistry University Of Lahore.

Introduction: Education system in a dental institute is a four legged chair: The teaching faculty, the administration, the academic Environment and The students. Students are the end buyers of Dental education so the dental education system should also incorporate the perspective of students with respect to other 3 parameters. The present study was motivated to focus on the qualitative aspects of student's perspective on the other three main parameters in university college of Dentistry (UCD) University of Lahore (UOL).

Methodology: A qualitative survey with open ended questions was done in final year BDS class of 2018 in UCD UOL. The questionnaire was distributed to all the class, Strength of 75. 55 questionnaires were received back and one of them was completely empty.

Results: The data was stratified with respect to larger fields and smaller areas and sub areas identified by the students. The students were able to pint out as many as 5 and as less as 2 areas and sub areas in already given fields. They highlighted various issues which can change the strategy of dental institute and improve overall education system.

Conclusion: Students are very well aware of the strengths and weaknesses of teaching faculty, administration and academic Environment. They have not only drawn a map or words to show the true picture of present dental education system but they have very wisely suggested various options which can lead to significant improvement.