ABSTRACT

**Background:** Pathology is a key subject at the pre-clinical stage of medical training which needs regular feedback. The clinical years of medical students start from 3rd year MBBS, where importance of pathogenesis of disease is taught that enable the students to appreciate medicine with better conception. Monitoring the teaching and learning methods of the facilitators is necessary for departmental quality improvement. **Objectives:** The objective of the present cross-sectional study was to evaluate the student’s feedback in form of questionnaire about pathology teaching followed in the college in Lahore Medical & Dental College from 2021 to Dec 2021. **Methodology:** 345 students participated in the study and filled a structured pre-validated feedback questionnaire regarding the didactic lecture method of teaching being followed at pathology department Lahore Medical and Dental College. Questionnaire included set of questions on teaching and learning methods. Descriptive statistics were used in the form of frequency distribution and percentages were used to analyze the data. **Results:** 33.3% students found pathology subject interesting, 47.5% clinically helpful, and 27.5% considered General Pathology to be a difficult subject. **Conclusion:** Taking feedbacks from the students is one of the accepted and reliable methods of assessment. Majority of the students were satisfied with the present teaching learning method. Introduction of integrated teaching and case based and group-based discussion was favored by majority of the students. Regular feedback will improve our future teaching strategy. **Keywords:** Pathology, Integrated teaching, Feedback, Students, Education
INTRODUCTION
Students studying in third, fourth and second year are of great significance in Bachelor of Medicine and Bachelor of Surgery (MBBS) and Bachelor of Dental Surgery (BDS) respectively. These are the years where they start getting exposure to clinical knowledge and a glimpse of clinical training zealously. Pathology for a student of medicine is of great significance as it helps them to get a good understanding of disease and understand medicine better (1). Furthermore, if pathology is taught in effective way, it increases the chances of student adopting it as a professional career in future. In clinical practice pathology plays a pivot role. The laboratory investigations narrate the inside story of the human body which helps in quick and early diagnosis of disease. Depending on the information physician make their judgments regarding the pathological processes (2).
System of teaching and examination in University of Health Sciences (UHS) affiliated medical colleges of Pakistan including Lahore Medical & Dental College comprises of interactive lectures, followed by small group. In small group discussions practical work and OSPE are also covered. During COVID-19 era, developments in field of teaching have been made by introduction of online Google classrooms where all the necessary content and assignments were shared with students. As far as examinations are concerned system of Annual Examination is in place. Students are prepared to sit in these exams by college by holding monthly tests followed by midterm and send up examination (3, 4).

By using student feedback continuous efforts are being made to enhance and professionalize lecture delivery and exam conduction in a teaching institution. As students mostly consider Pathology and microbiology as an easy subject and our department as the most helpful one, so we rely on our students’ suggestions and perceptions for our continuous teaching and learning process. In this regard student feedback is one of the most common approaches being used across the globe (5). This allows getting direct response from students regarding what they think about the current methods/modes of education and what according to them would make learning further convenient. Keeping above discussion in mind this study was conducted using a Pre-validated questionnaire that was distributed among the students of (3rd and 4th year) MBBS and (2nd year) BDS. The objective of the study was to record the opinion of students regarding teaching and assessment system in place and what improvements could be made to improve learning and understanding of pathology subject.

MATERIALS & METHODS

Study Design
This cross-sectional study was carried out on 345 Students of third and fourth year MBBS and Second year BDS, who were about to appear in university professional exams at the Pathology department in Lahore Medical and Dental college in 2021. Purposive sampling was used to select students who gave consent to be included in the study. The study was conducted by the permission of the ethical and review board. Ethical considerations including complete
Disclosure about the study, confidentiality of the participant’s data was assured.

**Inclusion and Exclusion Criteria**

Students from the pathology department of the Lahore Medical and Dental College who were ready to take university professional exams included third- and fourth-year MBBS and second-year BDS students were considered for this study. All students in the MBBS and BDS second, third, and fourth years were not included in the current study.

**Data Collection Instrument**

Students were given a pre-validated feedback questionnaire to fill, regarding didactic lectures, teaching and learning techniques being used by Pathology Department in LMDC. It contained 11 questions regarding perceptions about subject, 4 regarding teaching tools, 2 regarding mode of assessment, 6 regarding teacher’s appearance/dress and at last 5 regarding the changes that student recommend.

**Statistical Analysis**

For statistical analysis of data SPSS 20 was used.

**RESULTS**

345 students took part in the study. Gender distribution showed female predominance 62% whereas men comprised 38%.

**Subject Perception**

33.3% students found subject interesting, 47.5% agreed that knowledge regarding pathology is helpful clinically, 51.9% suggested that integration of pathology with clinical rotations will be helpful and 27.5% considered General Pathology to be a difficult subject (Figure 1).

**Teaching Methodology**

Content: 49.3% and 46.4% students expressed satisfaction with clinical correlation and lecture content. 47.8% agreed that important points during the lecture were properly highlighted and 51% students agreed that explanation given during the lecture regarding the subject/topic being taught was satisfactory. Quality: 41.7% strongly agreed that teachers encouraged them to ask questions during lectures. 56.5% expressed satisfaction over delivery and pace of lecture (Figure 2).

Tools: In regards to readability and usefulness of content of presentation 47.8% and 49.3% students expressed satisfaction. 35.4% students found method of lecture delivery innovative (Figure 3).

**Methods of Teaching**

42.3% found didactic lecture as a very effective method of teaching and learning. 32.5% students also agreed that power point presentation as part of lectures were effective and helpful (Figure 4).

**Mode of Assessment**

36.5% were in strong agreement that written assessment is an effective method of assessment as compared to 29.9% who were in strong agreement that viva voce is an effective method of examination (Figure 5).

**Influence of Teacher’s Dress**

20.9% students agreed that dressing of teacher did affect there learning, 24.1% students also agreed that teachers dressing also impacted their behavior (Figure 6). Further, 23.2% of students agreed that teacher’s formal attitude towards the lecture and students had a good impact on teaching and learning whereas 19.7% agreed that teachers with casual attitude were more effective. Majority students 84.3%
suggested that case-based study should be introduced. 71.9% students also suggested that integrated system of medical education should be implemented and 69.3% students were also in favor of small group discussions.

Figure 1. Subject perception

Figure 2. Teaching content

Figure 3. Teaching tools
DISCUSSION

Educational environment plays pivotal role in determining the success of a curriculum in place (5) so to get maximum output from students it’s very important to continuously try and improve it. In this regard student feedback has proven to be most convenient and vital in assessing and reviewing methods of teaching as well as examination in medical education (6, 7). Besides being convenient it’s also inexpensive to obtain (8).

Majority of participants comprised of girls similar to the observation in study of Dr NA Shaikh et al., and Dr Shyamala Srujana. In regards of subject perception 33.3% of students found pathology to be interesting subject, 49% believed that knowledge of pathology will be clinically helpful and 51% suggested that integration of pathology with clinical rotations will be helpful as compared to the study of Dr Shyamala
Srujana according to which 45.68% students found pathology to be interesting subject and 68.4% students suggested that pathological knowledge will be helpful in clinical rotations (1). Effectiveness of Teaching Methodology is determined by content of lecture, its quality and teaching tools used during the lecture. Clinical correlation and content are one of most important aspects of a lecture as they play key role in determining practical utility of the subject and help improve student understanding of the subject. In this regard 49.3% and 46.4% students expressed their satisfaction respectively. 41.7% strongly agreed that faculty encouraged them to ask the questions during the lecture and 56.5% expressed satisfaction over delivery and pace at which lecture was being delivered. Along with this 47.8% students also agreed that all the important points were covered properly in lecture and explanation given to clarify them was sufficient, this observation was in accordance with the study conducted by DR Shyamala Srujana where majority observed method of explanation and highlighting of important points to be satisfactory (1).

In terms of readability and usefulness of lecture presentation 47.8% and 49.3% students expressed satisfaction. While only 35.4% students found method of lecture delivery innovative. 42.3% agreed and found didactic lecture to be an effective method of teaching and learning. 32.5% also agreed that power point presentations as part of lecture were also effective and helpful in process of learning. Whereas in a study by Amar R Shah and others found that 60% students found didactic lectures satisfactory and 85.8% found power point presentation satisfactory (10).

In regards to written assessment 36.5% students found it to be effective method of assessment whereas only 29.9% students strongly agreed that viva is effective method of examination. In regard to teachers dressing 20.9% agreed that teachers dressing did impact there learning as was observed in another study that, keeping in view the importance of dress and other factors associated with it played important role in learning along with a positive impact in a professional setup (11). Whereas 24.1% students also agreed that teachers dressing impacted their behavior, a study by Rollman and Steven A observed that students considered teachers who opted for informal clothing to be friendlier, understanding, fair and passionate (12).

In Islamic country dressing of women is considered of significance due to culture and traditions hence in case of female teachers 26.1% of students agreed that female teachers with decent covered dressing make them more likable among students whereas only 12.2% agreed that female teachers with casual dressing like jeans, tight clothing make them more likable among students (1, 5).

Teacher’s attitude towards class has also proven to be an important factor in determining students’ performance similar observation was made in a study by Ekperi P et al., which showed positive significance of relationship between teacher’s attitude and his student’s academic performance. In our study 23.2% of students agreed that teacher’s formal attitude towards the lecture
and students had a good impact on teaching and learning on the other hand 19.7% agreed that teachers with casual attitude were more effective (13). Majority students suggested that case-based study with integrated system of medical education and small group discussion should be introduced to enhance the learning experience similar findings were seen in study by Quadri SS, et al where more than 75% of the students felt the need for introduction of integrated curriculum, case-based and group discussions (1). The limitations of this study are the small sample size limiting the generalizability of the results. We plan to conduct the research on more number of students in future.

CONCLUSION

Student feedback is considered to be one of the most reliable source of data collection. Majority of students in study were satisfied with current teaching, learning and assessment method, they also agreed that teachers dressing and behavior impacts teaching and learning. Students also felt strong need for introduction of case-based study followed by implementation of integrated system of medical education. Small group discussions were also favored by students.

ACKNOWLEDGEMENTS

We thank all the participants who honestly and willingly participated in this research.

DECLARATIONS

Authors’ Contributions
FS contributed to study concept; AA and TT contributed to study design, data collection. JA and AA contributed in data analysis and interpretation. SIR did the literature review and critically reviewed the manuscript. All the authors read and approved the final manuscript.

Ethical Approval
Ethical approval was obtained from Ethical Review and Research committee of Lahore Medical & Dental College (Path/3630).

Conflict of Interest
The authors declare no conflict of interest among them.

Funding
None

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