

Perception of students regarding Clinico-Physiological conference (CPC); an innovative educational intervention: a cross sectional study

Attiqua Khalid, Sadia Nazir*, Uzma Zafar, Zaima Ali, Anser Asrar, Abdul Majeed Chaudhry

Lahore Medical & Dental College, University of Health Sciences

*Correspondence:

Dr. Sadia Nazir

Associate Professor Physiology

Lahore Medical & Dental College, University of Health Sciences

Abstract:

Physiology is an experimental scientific discipline and is of significant significance in medicine and associated health sciences usually been taken into consideration as an essential basis for clinical sciences. In recent time there was an accelerated trend in the direction of incorporation of medical problems inside the coaching of Physiology. To enhance clinical knowledge of students clinico-physiological conferences have been performed in physiology department for the last 13 years. The purpose of current study was to determine the perception of medical students regarding clinic-physiological conference.

Method: A descriptive cross-sectional was conducted in physiology department at the Lahore Medical & Dental college (LMDC), Lahore. The study group comprise of total 170 students from 2nd year and 3rd year MBBS classes. Convenient sampling approach was done. A 5-point Likert scale starting from 1 (strongly agree) to 5 (strongly disagree) become used to determine students' perception towards clinic-physiological conferences with the use of a self-administered questionnaire. The data was analyzed using SPSS-20.

Outcomes: Total of 60% students found that clinic-physiological conferences provides self-motivation for improving knowledge. 69.4% students agreed these conferences provide better understanding of a clinical situation. 54% students were found that clinico-physiological conferences simplify the complex topics of physiology.

Conclusion: The clinico-physiological conferences had been found useful, interesting and stated to be a very good supply of clinical information. It is recommended that those conferences need to be conducted more frequently, made more interactive and patients should be presented as case studies at some point of the conferences.

Keywords: Clinico-physiological conference, Physiology, innovative teaching, students' perceptions, teaching methodology.

INTRODUCTION:

There are many developments in scientific knowledge and innovations in medical education field that demand continuous amendments in medical school curricula. Goal of medical institutes is to design and implement a program that train the future medical graduates with appropriate knowledge, attitude and skill so that they can accomplish high level of ability and performance when they encounter real situations such as in tests^{1,2}. It is therefore imperative that the medical education system integrate and implement appropriate teaching strategies to achieve this goal. Traditional teaching methods are commonly used in most of medical colleges in which students more often memorize the educational contents, and usually forget them easily after a short period of time^{3,4}. In recent years many new innovative teaching strategies such as problem based learning, clinic-basic conferences, self-directed learning & community orientation have been introduced in field of medical education for better learning and command of students on the topic⁵. The most practical and realistic approach in medical educational assessment is to focus on students' perception of their experience with a learning program⁶. The World Federation for Medical Education (WFME) (WFME 1994) has recommended the training of 21st century physician to educate practitioners in providing efficient and excellent healthcare offerings, excellent communication skills with sufferers, better critical thinking and become a life-long learner, as well as participants of multidisciplinary teams for the community's advantage⁷. The world Health Organization (WHO) suggested the image of the "5-star doctor" as the correct profile of a medical doctor having a mixture of these following attributes: Care provider, decision maker, Communicator, leadership and manager⁸. According to Mission and Vision statement of Lahore Medical & Dental College, a medical graduate along with qualities of 5- star doctors proposed by WHO also have two new qualities of researcher and lifelong learner, so in order to be 7- star graduates they have qualities of Care provider, Decision maker, Communicator, Community leader, Manager, Researcher and Lifelong learner. As in these clinic-physiological conferences students presented the assigned topic so it develop the communication skills, critical thinking and enhances the confidence of students. As physiology deals with the normal functions of the body, it is imperative to have in-

depth knowledge of the subject to know about the diseases and malfunctioning of the body. Physiology is taught traditionally by didactic way of lecturing such as lectures, tutorials and practicals⁹.

Clinic-physiological conferences (CPCs) have been introduced in Lahore Medical and Dental College since 2009. These CPCs involve integration of physiology with clinical sciences. Topics are notified to the students from the course covered in the lectures two to three weeks prior to CPC. All students are directed to study the topic and encouraged to actively participate. Two to three volunteers are given the task to prepare the physiological aspect of the topic. They prepare the assignment in-depth in collaboration with physiology and concern clinical departments. The format of CPC is that physiological aspects are discussed by the students and clinical aspects are discussed by consultant from the clinical department, followed by question answer session.

Effective feedback is a mean of promoting learner motivation, reconciling the communication gap between the learners and facilitators and implementation or modification of new teaching strategies¹⁰. It also discerns the plausibility and shortcoming of new teaching strategies and provide basis for necessary amendments.

This study is designed to obtain student feedback and to determine their perception of CPCs as innovative educational intervention for betterment of learning and attitude toward the physiology.

MATERIAL AND METHODS:

A Descriptive cross sectional study conducted in Physiology department, Lahore Medical and Dental College (LMDC). The study group comprise of total 170 students of 2nd and 3rd year MBBS, who were willing to participate, through non- probability convenient sampling technique. All regular students who appeared in exams were included in study, detained students and students who did not appeared in exams were excluded from study.

Verbal informed consent would be taken from the students. Structured questionnaire consisting of two parts, one consist of background information such as age, gender, class, exam result, high school education and second part consist of a Likert scale with 15 questions and 5 options ranged from strongly agree to strongly disagree about the students perception. The questionnaire was tested for reliability using Cronbach's coefficient alpha 0.89.

Data will be entered and analyzed using IBM Statistical Package for social Sciences (SPSS), version 20. Frequencies and percentages would be calculated for the background variables. Mean \pm SD for Likert scale scores. Chi-square test of significance will be used to determine the association between background variables and Likert scale scores. $P \leq 0.05$ will be considered as statistical significance.

RESULTS:

Total students from both the second year 114 (67%) and third year 56 (33%) MBBS classes were selected. The participants of the study comprised of 63 (37%) males and 107 (63%) females, while number of. The perception of medical students regarding the clinico- physiological conferences was analyzed on a 5-point Likert Scale, in which, 5=strongly agree, 4=agree, 3=neutral, 2=disagree and 1=strongly disagree. The response of students' in term of percentage and frequency given in table. (Table 1)

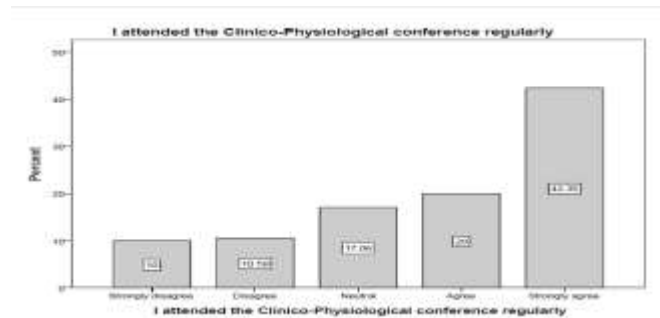
Table: 1

No.	Variables	Strongly disagree 1	2	3	4	Strongly agree 5
1	I am interested to attend Clinico-physiological conference	7.6 % (13)	10.6% (18)	27.1% (46)	27.6% (47)	27.1% (46)
2	I attended the Clinico-Physiological conference regularly	10% (17)	10.6% (18)	17.1% (29)	20.0% (34)	42.4% (72)
3	Presenting in Clinico-physiological conference enhances the confidence in students	5.3% (9)	7.6% (13)	21.2% (36)	28.2% (48)	37.6% (64)
4	Clinico-physiological conference helps me in becoming a lifelong learner	6.5% (11)	12.4% (21)	31.8% (54)	31.8% (54)	17.6% (30)
5	Clinico-physiological conference develops critical thinking skills in students	4.1% (7)	11.8% (20)	29.4% (50)	35.3% (60)	19.4% (33)
6	Clinico-physiological conference provides self-motivation for improving knowledge.	4.1% (7)	15.9% (27)	20.0% (34)	35.9% (61)	24.1% (41)
7	Clinico-physiological conference provides better understanding of a clinical situation	2.9% (5)	8.8% (15)	18.8% (32)	41.2% (70)	28.2% (48)
8	Clinico-physiological conference simplifies the complex topics of physiology	5.9% (10)	11.8% (20)	28.2% (48)	32.9% (56)	21.2% (36)
9	Clinico-physiological conference is helpful in better retention of the topic	4.1% (7)	12.4% (21)	27.1% (46)	36.5% (62)	20.0% (34)
10	Clinico-physiological conference should be held more frequently	6.5% (11)	14.7% (25)	34.7% (59)	25.9% (44)	18.2% (31)
11	Duration of Clinico-physiological conference should be reduced	8.8% (15)	19.4% (33)	25.9% (44)	21.8% (37)	24.1% (41)
12	Duration of Clinico-physiological conference should be increased	25.3% (43)	18.8% (32)	29.4% (50)	20.0% (34)	6.5% (11)
13	In addition to clinical departments, other basic	4.1% (7)	10.0% (17)	30.0% (51)	36.5% (62)	19.4% (33)

	and pre-clinical departments may be involved in Clinico-physiological conference	(7)	(17)	(51)	(62)	(33)
14	Clinico-physiological conference are helpful in getting good grades in examinations	4.1% (7)	15.9% (27)	41.8% (42)	24.7% (42)	13.5% (23)
15	Clinico-physiological conference develops communication skills in students	7.1% (12)	6.5% (11)	21.8% (37)	30% (51)	34.7% (59)

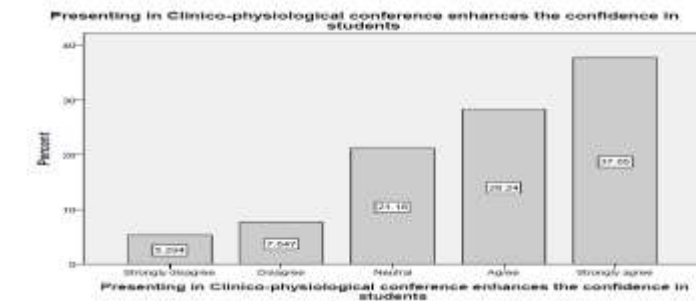
Majority of students regularly attend clinic-physiological conference (62.4%) as shown in fig.1

Figure: 1



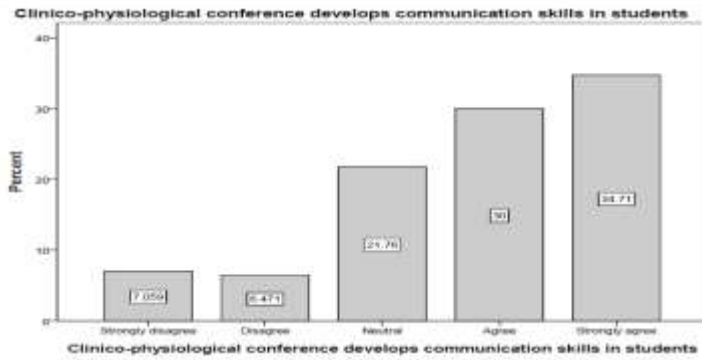
Clinic-physiological conferences enhances the confidence of students, 37.5 % strongly agree and 28.24% agree that as shown in fig.2.

Figure. 2:



These clinic-physiological conferences develop communication skills in medical students 34.71% strongly agree, 30% agree and only 13.6 % in total disagree it as shown in fig. 3.

Figure. 3:



DISCUSSION:

The importance of clinico-Physiological conferences is distinctly appreciated by the students, as is obvious from the opinions of most of the students attending these conferences. Majority of students interested and regularly attending clinico-physiological conferences. This also depicts students' interest towards the subject of Physiology. As physiology is a conceptual subject, these clinic-physiological conferences help to simplify the difficult topics and concepts of physiology as from the opinion of majority of students. These findings are consistent with findings of Rohlfen et al. which shows that innovative teaching methods help in foster knowledge acquisition, professional identity formation and learner satisfaction¹¹. The results of our study showed that clinico-Physiological conferences are a good source of clinical information; they develop understanding rather than memorization and encourage students to study harder. The literature review conducted did not identify any research in clinic-physiological conferences as a teaching method in the topic of Physiology. However, researchers have reported other current teaching methods of Physiology, preferred over traditional teaching methods. This is reflected in the work done by Nageswari which has shown that clinical-based physiology teaching has been able to articulate strong physiology concepts in a practical and friendly environment¹². Similarly, Majeed rewrote that discussion of a clinical case made in studying the subject of physiology in addition to generating interest in the student¹³. Consistent findings have been reported by Gosh and Pandya¹⁴. His research reported that traditional teaching is not the most effective way to teach physiology and that both

teachers and students prefer alternatives. Students seem to prefer the integrated methods used to teach physiology instead of traditional methods

clinically oriented physiology teaching has been able to explain tougher concepts of Physiology in a more effective and friendly environment¹². Similarly, Majeed have also documented that discussion on a clinical case facilitated in the learning of the subject of physiology in addition to generating interest of the student¹³. Consistent findings have been reported by Gosh and Pandya¹⁴. His study reported that traditional lecture is not necessarily the most effective way to teach physiology and that both teachers and students prefer other methods. Students are seen to prefer integrated methods used to teach physiology instead of traditional methods¹⁵. Our results have shown impact of CPC in improving the grades of students, they reported good grades in their exams these are in consistent with findings of Pal, Ravi & Singh et al. which reported improvements in assessments results and students attendance with innovative teaching methods rather than traditional teaching techniques¹⁶. Clinic-physiological conferences helped in improving the lifelong learning and enhanced the confidence of students as shown by results of our study. These results are in accordance with the results of Norman et al., Ortiz-Ordoñez et al. and Trevor Davies they reported that presentations helped the students to boost their confidence and aid to be lifelong learner^{17,18,19}. Results of our study have shown that duration of CPC time should be reduced this is in consistent with the findings of Wilson et al. and Eze et al. which reported that lecture duration effect the quality of teaching and learning in higher education, human attention span is limited, some researchers say, taking 20 minutes per hour^{20, 21}.

CONCLUSION:

Clinico-physiological conferences were reported interesting and helps in becoming a lifelong learner, promote critical thinking and improve the confidence of the students. These conferences simplifies the complex topics of physiology so these CPC should be more frequent to provides better understanding of a clinical topics.

ETHICAL CONSIDERATION:

Ethical approval would be taken from Institutional Review Board of LMDC

REFERENCE:

1. Wadoodi, A. and J.R. Crosby, Twelve tips for peer-assisted learning: a classic concept revisited. *Med Teach*, 2002. 24(3): p. 241-4.
2. Erlauer, L. (2009). The brain-compatible classroom: Using what we know about learning to improve teaching. *Procedia Social and Behavioral Sciences*, 1 (2009) 37–41
3. Subramani, P.C.Naga & Iyappan, V. Innovative methods of Teaching and Learning. *Journal of Applied and Advanced Research*, 2018: 3(Suppl. 1) S20- S22
4. Khairnar. C. M. (2015) Advance Pedagogy: Innovative Methods of Teaching and Learning. *International Journal of Information and Education Technology*, Vol. 5, No. 11,pp 869-872.
5. Broadbent, D. (1958). Perception and communication. Pergamon Press, London, p. 338.
6. Sydille K L. Evaluation of teaching and learning strategies. *Med Educ Online* (serial online) 2001;6:4
7. World Federation for Medical Education. 2007. Basic medical education: WFME global standards for quality improvement; p. 36
8. Boelen C. 1993. The five star doctor. An asset to heal care reform. 1-13
9. Layla S. B. dos Santos, Raquel G. Benevides, Cláudio R. N. Amorim, Rogerio M. F. Santos, Simone Souza de Oliveira, and Érica M. Granjeiro. Innovation in the teaching of human physiology at university and school: pedagogical process based on interdisciplinarity and learning station rotation. *Adv Physiol Educ* 45: 541–546, 2021.
10. Gunn. E. (2014) "Using clickers to collect formative feedback on teaching: a tool for faculty development," *International Journal for the Scholarship of Teaching and Learning*, vol. 8, no. 1, article 11.
11. Rohlfesen, C.J., Sayles, H., Moore, G.F. *et al.* Innovation in early medical education, no bells or whistles required. *BMC Med Educ* **20**, 39 (2020)
12. K. Sri Nageswari, Anita S. Malhotra, Nandini Kapoor, and Gurjit Kaur. Pedagogical effectiveness of innovative teaching methods initiated at the Department of Physiology, Government Medical College, Chandigarh. *Adv Physiol Educ* 28: 51–58, 2004.
13. Farrukh Majeed, Effectiveness of case-based teaching of physiology for nursing students. *Journal of Taibah University Medical Sciences* (2014) 9(4), 289-292
14. Siddiqui, F., & Malik, A. A. (2019). Promoting self-regulated learning skills in medical students is the need of time. *Journal of Taibah University Medical Sciences*, 14(3), 277–281.
15. Sarmishtha Ghosh and Himanshu V Pandya, Implementation of Integrated Learning Program in neurosciences during first year of traditional medical course: Perception of students and faculty. *BMC Medical Education* 2008, 8:44
16. Pal, Ravi & Singh, Mitasha & Goyal, Pooja. (2019). Outcome Assessment of Innovative Teaching on Performance of Medical Undergraduates. 12. 1.

17. Norman, Marie & Hyland, Terry. (2003). The Role of Confidence in Lifelong Learning. Educational Studies. 29. 261-272. 10.1080/03055690303275.
18. Juan Carlos Ortiz-Ordoñez et al. / Procedia - Social and Behavioral Sciences 171 (2015) 982 – 986
19. Trevor Davies, Confidence! Its Role in the Creative Teaching and Learning of Design and Technology, 2000, Journal of Technology Education Vol. 12 No. 1
20. Chika Eze and Ombajo Misava Edward, Lecture duration: A risk factor for quality teaching and learning in Higher Education. Integr. J. Edu. Train. 2017, 1: 1-5.
21. Wilson, K., & Korn, J. H. (2007). Attention during lectures: Beyond ten minutes. Teaching Psychology, 34, 2