

# Usefulness of Clinical Lectures in First Two Years of Integrated Teaching; Student's Perspective

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## ABSTRACT

**Background:** Integrating clinical content into problem-based learning tutorials is associated with learning motivation of undergraduate medical students. Medical students are being exposed to clinical lectures and rotations starting from 1<sup>st</sup> year in most of the medical colleges across Pakistan.

**Aim:** To determine perspective of 1<sup>st</sup> and 2<sup>nd</sup> Year MBBS students regarding clinical lectures as part of integrated teaching.

**Study Design:** Cross-sectional study

**Place and Duration of Study:** HITEC Institute of Medical Sciences, Taxila from 1<sup>st</sup> July 2021 to 31<sup>st</sup> December 2021.

**Methodology:** One hundred and seventy eight students of 1<sup>st</sup> and 2<sup>nd</sup> year were enrolled. Students who attended clinical lectures for last three months were randomly selected in this study. Structure proforma having ten items scored on five-point Likert scale was used to collect data. Data was analyzed using SPSS version 28. Frequencies were calculated for categorical variables, whereas mean and standard deviation was calculated for continuous variables (age).

**Results:** Eighty (44.9%) were males and 98 (55.1%) were females. Ninety eight (55.1%) were from first year and 80 (44.9%) were from second year. Integration of clinical lectures in early years was reported to help in concept building by 46.6% (n=83, strongly agree) students. According to 45.5% (n=81) students, integration of clinical content makes learning interesting. Median score calculated for the participant's perception about role of integrated teaching in stimulating interest, concept building, passing exams, ease of schedule was 4 which suggested that majority of the participants agreed to it.

**Conclusion:** Our data showed that early clinical exposure through lectures and clinical rotation stimulates interest in learning by concept building and helps medical students to perform better in their professional examinations.

**Keywords:** Medical education, Integrated curriculum, Early clinical exposure, Students perception

## INTRODUCTION

Integration means the organization of scheme of curriculum to interrelate the subjects which are frequently taught in separate departments.<sup>1</sup> Medical education has been dichotomized into basic and clinical sciences. In 1910 Flexner described 'basic plus clinical' model based on the concept that knowledge and understanding of basic sciences determines decision making power and sound clinical reasoning of physician.<sup>2</sup> This traditional method of medical teaching includes lectures, teacher centered teaching methodology, tutorials, little or no group discussion. In each subject knowledge is imparted restricted to one part of course in particular time of period with no communication between faculty members of basics as well as clinical subjects. This leads to disjointed and irrelevant delivery of knowledge with repetitions and lack of motivation.<sup>3</sup> This one way transmission of knowledge is assessed annually by theory as well as viva examinations.<sup>4</sup>

As the time passes by to cope up with challenges of era of highly skilled techniques, procedures and apparatuses, USA in 1952 introduced integrated system of medical education. It comprises of understanding of basic subjects, its correlation with clinical cases and PBL (problem based learning). Faculty of basic sciences should be in collaboration to formulate curriculum for all the years of medical education base on integrated system. In PBL various topics are discussed with full participation of students guided by faculty facilitator.<sup>5</sup> It puts emphasis on reduction of compartmentalization of different disciplines and aspects of medical studies to attain integration in different phases.<sup>6</sup>

The traditional educational system and curriculum of five years of duration is being followed in most of medical colleges of Pakistan. In first two years basic sciences are taught without any clinical exposure in any form like electives, shadowing or mere observer-ship of real life clinical practice. Clinical exposure starts from 3<sup>rd</sup> year of MBBS along with lectures of basic sciences. Quality and quantity of taught basic sciences is the matter of dispute among students and clinicians. In recent century sub-continent has produced some great clinicians at the expense of immense hard work and over-burden by this traditional system of education as it is believed that it laid foundation for clinical practice and enhances ability to reach clinical diagnosis. On the other hand it is being proposed that there should be more emphasis on clinical

teaching from the beginning with less accentuation on basic sciences, formulating time constraint program that does not exhaust students and still provide opportunity of self-learning in limited time period. Integrated method of teaching has been adopted by HITEC institute of medical sciences Taxila since its establishment in 2016 in hope to make future health professionals critical thinkers, self-learners and contemporary. The purpose of our study were to assess the perception of medical students regarding integrated versus non-integrated system and to analyze students feedback regarding integrated curriculum.<sup>7</sup>

Different studies have been done to analyze the perception of integrated education system amongst undergraduate students. Study done at MS Ramaiah Medical College, Bangalore, India in year 2009 by mean of questionnaire with five point Likert scale with minimum of one and maximum of five rating concluded that integrated system was more interested and useful.<sup>1,3</sup>

Another study was done in Jordan, 2020 by utilizing online, self-administered questionnaire comprised of 5 domains targeting student's perceptions, attitudes and suggestions about integrated medical education system generally concluded that importance of basic medical sciences cannot be ignored but integrated system is more functional.<sup>2</sup>

Another study was also done at two medical institutions of Rawalpindi and Islamabad in 2021 with integrated and traditional education system respectively. After written informed consent paper format DREEM questionnaire was administered to study integrated versus traditional education system and later had more positive reviews.<sup>7</sup>

The various aspects of integrated system done at Rawalpindi medical college in 2015 by developing questionnaire based on Likert scale on which commonest responses were assessed. Integrated system was preferred by the students. This study was aimed to determine 1<sup>st</sup> and 2<sup>nd</sup> Year MBBS student's perspective regarding clinical lectures as part of integrated teaching at HITEC-IMS.

## MATERIALS AND METHODS

After taking approval from Institutional Review Board, the cross-sectional study was conducted in HITEC-IMS, Taxila, Pakistan, from 1<sup>st</sup> July 2021 to 31<sup>st</sup> December 2021. A total of 178 students

of 1<sup>st</sup> and 2<sup>nd</sup> year MBBS participated in the study. In this study sample size has been calculated using Open Epi online calculator for proportions. Keeping in view population size as 1000000, anticipated population proportion of students who did not prefer integrated teaching was 21.6%<sup>1</sup> confidence interval of 95%, the sample size calculated is 116. All those students who have attended 3 months of integrated teaching on campus, were included in the study whereas recently in migrated (Less than 3 months) students were excluded from the study. Sampling technique used was simple random sampling. Structured and validated questionnaire in English language was used to collect data, after informed consent from the students. Questionnaires were distributed among medical students including pertinent questions regarding different aspects of integrated learning system and student's perceptions towards that system. Perceptions were measured by scoring perceived benefits of integrated teaching on 5-point likert scale (SA-SD) in terms of stimulating interest, concept building, passing exams, ease of schedule, wastage of time and difficulty in focusing on examination subjects. Student perceive integration ineffective for score ranging from 10-29, Neutral (score=30) and perceived integration beneficial for score ranging from 31-50. Statistical package for social sciences (SPSS) version 28 was used for statistical analysis. Descriptive statistics was used

to determine the relationships between variables. P value of <0.05 was considered statistically significant.

**RESULTS**

Eighty (44.9%) were males and 98 (55.1%) were females. Ninety eight (55.1%) were from first year and 80 (44.9%) were from second year. Majority of the students 115 (64.4%) were hostellite and 63(35.4%) were day scholars. Results regarding pre medical qualification showed that 169(94.9%) did FSC and 9(5.1%) did A-level. 127(71.3%) were aware of the meanings of integrated teaching while 51(28.6%) were not aware of the meanings. Perception was measured by scoring perceived benefits of integrated teaching on 5 point Likert scale (SA-SD). Median score calculated for the participant's perception about role of integrated teaching in stimulating interest, concept building, passing exams, ease of schedule was 4 which suggested that majority of the participants agreed to it. While participant neither agreed nor disagreed with perception of role of integrated teaching in wastage of time, difficulty in focusing on examination subjects and stressful for preparing for the exam subjects integrated teaching the median score calculated for was 3. Computed total score of perception for all students ranged from 10 to 40 with a mean score of 39.2+6.15 SD and a 95% CI of mean was 38.34 to 40.15 (Table 1, Fig. 1).

Table 1: Perceptions of the students about integrated teaching

Variable	Strongly agree	Agree	Not sure	Disagree	Strongly disagree	Low perception scores	Median score (out of 5)
It helps in concept building	83 (46.6%)	87 (48.9%)	3 (1.7%)	1(0.6%)	3(1.7%)	7(39.3%)	4
Helps in developing conducive Environment for learning	66 (37.1%)	91 (51.1%)	15 (8.4%)	4(2.2%)	2(1.1%)	48(26.9%)	4
Adhering to lecture schedule is easy	58 (32.6%)	72 (40.4%)	31 (17.4%)	14(7.9%)	3(1.7%)	21(11.8%)	4
it is helpful in passing examination	57 (32.0%)	84 (47.2%)	30 (16.9%)	3(1.7%)	2(1.1%)	35(19.6%)	4
It develops interest in learning	81 (45.5%)	70 (39.3%)	18 (10.1%)	4(2.2%)	3(1.7%)	25(14%)	4
its pleasure to attend lecture in Integrated Teaching	77 (43.3%)	75 (42.1%)	16 (9.0%)	7(3.9%)	3(1.7%)	26(14.6%)	4
It should be continued in coming classes	82 (46.1%)	73 (41.0%)	14 (7.9%)	5(2.8%)	3(1.7%)	22(12.4%)	4
Is it stressful for preparing for examination subjects	34 (19.1%)	53 (29.8%)	47 (26.4%)	35 (19.7%)	8(4.5%)	97(54.5%)	3
Integrated Teaching disturbs pace of learning	46 (25.8%)	43 (24.2%)	37 (20.8%)	43 (24.2%)	8(4.5%)	95(53.4%)	3
Integrated Teaching is not helpful for time management	31 (17.4%)	51 (28.7%)	46 (25.8%)	38 (21.3%)	11 (6.2%)	100 (56.2%)	3

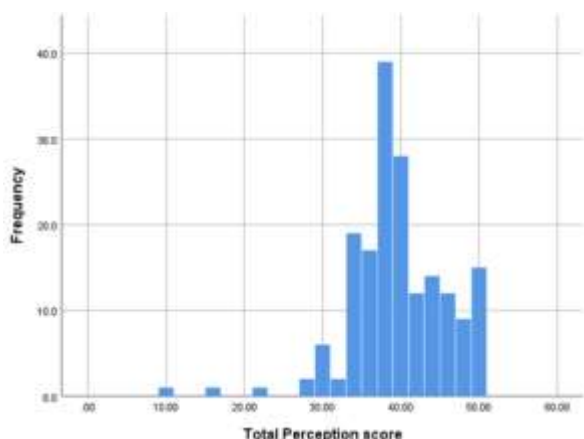


Fig.1: Histogram for total perception scores

**DISCUSSION**

Teaching basic sciences in context of clinical sciences during early years of medical teaching has been recommended for making teaching stimulating, practical and to enhance relevance. However, in our context, previously following traditional curriculum exposing student to clinical situations after two years of basic teaching, this early clinical exposure in form of vertically integrated curricula is varyingly perceived by medical students. Results of the present study showed that majority of students strongly agreed (n=83,

%=46.6) and agreed (n=87, %=48.9) to usefulness of integrated teaching with early clinical exposure in concept building. Majority of respondents agreed (n=91, %=51.1) that integration in form of early clinical exposure and clinical lectures develops conducive environment for learning during early years at medical school. These findings are consistent with study carried out by Anil B. Warkar in India, which showed that 80% students felt that clinical lectures and exposure enhanced their interest in basic sciences learning and application. Clinical integration was reported to help in building knowledge by 83% students, whereas 92% felt motivated to study basic sciences by integrated clinical teaching in early years. Consistency of these results is likely due to similar teaching environment and social structure of the teaching institutes in neighbouring countries.<sup>8</sup>

Present study demonstrated that, 45.5% students (n=81) strongly agreed and (n=70, %=39.3) agreed that integration of clinical content in basic sciences teaching helps to develop interest in learning. Students reported to attend clinical lectures enthusiastically in Integrated Teaching (SA n=77, %=43.3) that inspired them in understanding the concepts of health and disease in community. Regarding effectiveness of clinical exposure in academic performance, 47.2% (n=82) agreed that integrated teaching helps in passing basic sciences examination in early years by improving understanding, clarification of concepts and by real time application. Coincidentally, similar results of integrated clinical teaching in basic sciences years were reported by an international study conducted among 32 medical schools by B Okay et al.<sup>9</sup> Clinical integration in early years helped to improve

student's orientation to various aspects of medical practice. It improved student's communication skills, professionalism as well as helped them to understand patient's perspective by providing orientation to community and health system.

Attending clinical lectures integrated with basic sciences content was pleasurable 43.3% (n=77) students, who strongly agreed compared to 42.1% (n=75) students who agreed with it. This finding contradicts the results of a study done by Mahmood<sup>10</sup> in Pakistan, which showed that 59% medical students didn't like the traditional lectures as mode of information transfer. Since in integrated curriculum, clinical lectures are taken in context of basic sciences content thereby increasing the relevance and understanding with practical application. This is probable reason for liking clinical lectures during early years of medical education by medical students.

Basic sciences teaching integrated with clinical knowledge was perceived effective by majority of students in present study. Majority of students either strongly agreed (n=82, %=46.1) or agreed (n=73, %= 41) about continuation of clinical integration during 2<sup>nd</sup> Year MBBS. These findings are supported by the results of another study conducted by Muraleedharan<sup>11</sup> in India, which reported that 67% (n=98) perceived integration useful particularly the vertically integrated sessions with clinical departments involving patients. Lectures or teaching sessions using clinical vignettes were reported extremely useful by 81% (n=119) students in same study. These findings support the results reported by present study.

Results of another study conducted at Qatar showed that 71% reported to learn about patient care from early clinical exposure. Additionally, 55% were able to discuss management of common clinical problems with physicians during early years of medical teaching. This early clinical exposure helped them (62.5%) to take histories and examine the patients confidently. In contrast to these finding, results of our study showed that theory based clinical exposure in early years of medical teaching makes the learning interesting (45.5%) and pleasurable (43.3%).<sup>12</sup>

## CONCLUSION

Early clinical exposure through lectures and clinical rotation stimulates interest in learning by concept building and helps

medical students to perform better in their professional examinations.

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