ORIGINAL ARTICLE

LECTURES IN MEDICAL EDUCATON: WHAT STUDENTS THINK?

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Background: The volume of medical knowledge has increased exponentially and so has the need to improve the efficiency of current teaching practices.With increasing emphasis on interactive and problem based learning, the place of lectures in modern medical education has become a questionable issue. Objectives were to assess the perspective of undergraduate medical students regarding the role and effectiveness of lectures as a mode of instruction as well as the ways and means that can be employed to enhance the effectiveness of lectures. **Methods:** A cross sectional study was carried out among 2nd to final year medical students from five medical colleges including both private and public sector institutions. A total of 347 students participated by completing a structured questionnaire. Data was analyzed using SPSS-17. **Results:** Sixty seven percent students considered lectures as a useful mode of instruction (47% males and 77% females), whereas 83% of the students reported that clinical sessions were superior to lectures because of small number of students in clinical sessions, active student participation, enhanced clinical orientation, and interaction with patients. About 64% responded that lectures should be replaced by clinical sessions. Majority of the students (92%) reported not being able to concentrate during a lecture beyond 30 minutes, whereas 70% skipped lectures as they were boring. A significantly greater proportion of male respondents, students from clinical years, and those who skipped lectures, considered lectures to be boring, a poor utilization of time and resources, and could not concentrate for the full duration of a lecture compared to females, students from preclinical years, and those who do not skip lectures, respectively. **Conclusion:** Lecturing techniques need to be improvised. The traditional passive mode of instruction has to be replaced with active learning and inquiry based approach to adequately utilize the time and resources spent on lectures.

Keywords: Lectures, medical students, medical education, clinical sessions, active learning

J Ayub Med Coll Abbottabad 2013;25(3):21–5

INTRODUCTION

The objective of medical education is not just memorizing or cramming of facts, but a holistic approach that enhances problem solving skills and critical thinking.[1] How far lectures can serve in fulfilling this objective remains questionable.

Lectures are probably the most commonly used and yet the most frequently criticized mode of instruction. The most consistently leveled criticism against lecture, as a mode of instruction, is that it just facilitates transfer of information as a one way communication with little cognitive gain. As modern education is shifting its focus on a more inclusive, thought stimulating approach, the disapproval for passive lecturing is growing on grounds of inefficiency, lack of interactivity and authoritarianism.[2–5] For this reason, conventional lectures are either being improvised to ensure a learning environment that matches up to these changing trends or completely replaced with other teaching methods and modalities that facilitate interactive learning and greater student participation.[6–11] Various studies have compared the effectiveness of a traditional lecture to other techniques involving active learning approach and the results clearly favor the use of such techniques.[12–17] With increasing availability of computer assisted teaching programs, including online lectures, which provide a learner with the comfort of learning at his own pace and schedule, the time spent in lecture halls needs additional reasons to be justified.[18,19]

Lecturalgia is a frequently used term highlighting the 'painful' aspects of sitting through a long, monotonous and boring lecture.[20,21] Multiple studies suggest that concentration span sharply declines after fifteen to twenty minutes, which indicates that a considerable duration of a lecture goes to waste, making it impossible to achieve desired learning outcomes.[5,20,21] The skill or individualized style of a lecturer also strongly influences the effectiveness of a lecture.[22]

Despite all criticism, lectures still remain the cornerstone of medical education. The most important argument, particularly in an education system with meager resources, is that lectures are an effective use of time and resources and benefits a large number of students with minimal expense.[9] Other than this, lectures can also provide new information that is not found in standard texts, compile information from various sources, and even play a role of a social event.[23,24] The recent incorporation of technology, like various response systems, in a lecture has completely changed

the dynamics of lecturing, facilitating interactive environment even in large classrooms[25–27], but it appears to have little feasibility for educational systems already challenged by severe lack of resources.

As this mode of instruction has its pros and cons, it is imperative to understand the perspective of various stake holders, including students, to determine the place of lectures in medical education, so that the medical curriculum is revamped to optimally fulfill its objectives.

MATERIAL AND METHODS

This cross sectional study was carried out with an objective to assess the perspective of undergraduate medical students regarding the role and effectiveness of lectures as a mode of instruction as well as the ways and means that can be employed to enhance the effectiveness of lectures. Our study population was second to final year medical students, belonging to five medical colleges, including three public and two private sector institutions. Sample consisted of 347 students who were selected using systematic random sampling (two medical colleges), and convenient sampling techniques (three medical colleges). Data was collected using self-administered, structured questionnaires after obtaining informed consents. No personal identifiers were used, data was kept secured and confidentiality was maintained. SPSS-17 was used for data entry and analysis. Descriptive statistics were computed for different variables.

RESULTS

Our study participants were almost equally distributed across the four classes, about two-third of them was female and majority scored 60–69% marks in the last professional examination (Table-1).

As Table-2 depicts, 67% (77% females and 48% males) of our study participants found lectures useful for their education.While giving their opinion regarding various aspects of lectures, only 40% of the students found lectures to be sufficiently interactive, 43% thought lectures were boring and monotonous, whereas half of them considered lectures to be authoritative in form and style. More than half (56%) of the respondents believed lectures are useful because of lecture notes (Figure-1).

A significantly greater proportion of male respondents, students from clinical years and those who skipped lectures considered lectures to be boring/monotonous and a poor utilization of time and resources as compared to females, students from preclinical years and those who do not skip lectures (Figures: 2–4).

An overwhelming 83% of the students from clinical years, i.e., fourth year and final year, responded that clinical sessions were superior to lectures as a mode of instruction. When asked for the reason, the common responses were: clinical sessions are easier to retain and recall, active learning, and interaction with patients during clinical sessions. In accordance with the above mentioned response, majority (64%) gave an opinion that lectures should be replaced by clinical sessions (Table-3). A significantly greater percentage of male students (70%) thought that lectures should be replaced by clinical sessions as compared to female students (54%). When students were asked about their concentration span during a lecture, 92% could not concentrate during a lecture beyond 30 minutes. Among our respondents, a significantly higher proportion of males (95%), students from clinical years (96%), and those who skip lectures (95%), were not able to concentrate for the full length of a lecture as compared to females (90%), students from preclinical years (87%) and those who do not skip lectures (86%) respectively. In line with this response, majority (54%) gave an opinion that duration of a lecture should be reduced (Table-4). A significantly greater number of males (65%) and students who skip lectures (64%) wanted the duration of lectures to be reduced as compared to females (49%) and students who do not skip lectures (32%), respectively. As Table-4 shows, 70% of our study participants (79% males vs. 63% females; 62% preclinical years' students vs. 76% clinical years' students) reported skipping lectures, and among them 63% skipped lectures once a week or more.

Ninety-two percent of our study participants from all years reported that effectiveness of lectures could be enhanced by involvement of clinical scenarios. Similar percentages thought lectures could be improved by conducting discussion sessions, question and answer sessions, or a brief review at the end of a lecture (Figure-5).

Table-1: Demographic characteristics of study participants (N=347).

Characteristic	Frequency	Percentage
Age (years)		
17–19	38	11
20–22	249	72
23–25	60	17
Gender		
Male	115	33
Female	232	67
Class		
2nd year	86	25
3rd year	87	25
4th year	92	26
Final year	82	24
Nationality		
Pakistani	331	95
Other	16	5
Residence		
Home	164	47
Hostel	183	53
Score in FSC/A-Level equivalence		
60–69	3	1
70–79	31	9
80–89	282	81
>90	31	9
Score in last professional		
50–59	21	6
60–69	194	56
70–79	125	36
>80	7	2

Table-2: Usefulness of lectures by gender

Gender	Agree	Neutral	Disagree	Total
Female	179 (77%)	23 (10%)	30 (13%)	232
Male	55 (48%)	35 (30%)	25 (22%)	115
Total	234 (67%)	58 (17%)	55 (16%)	347

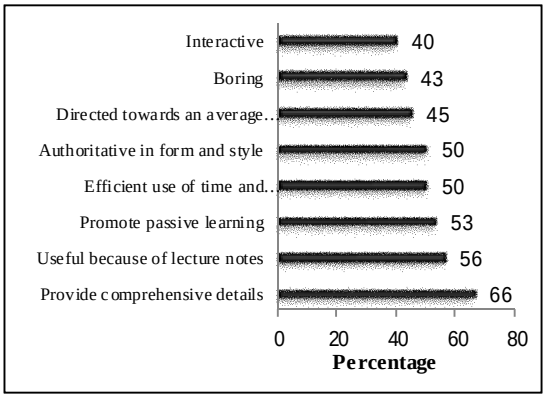

Figure-1: Students' opinion about lectures (n=347)

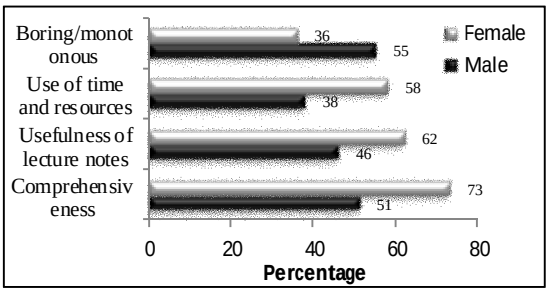

Figure-2: Students' opinion about lectures by gender (n=347)

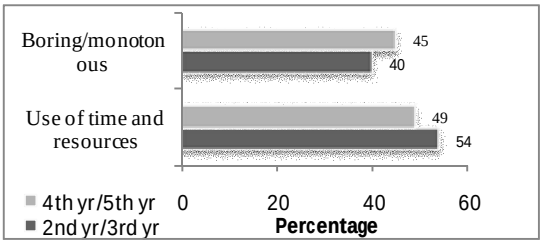

Figure-3: Students' opinion about lectures by class (N=347)

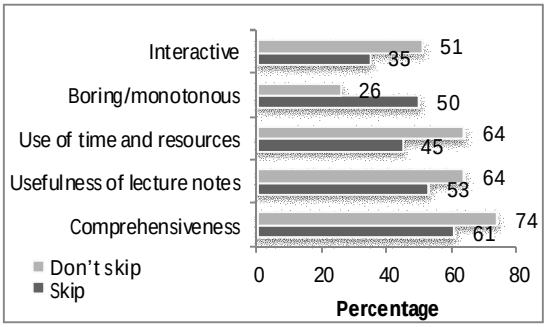

Figure-4: Students' opinion about lectures by skipping classes (N=347).

Table-3: Students' opinion regarding comparison of lectures with clinical sessions (Students from clinical years only (n=173).

Characteristic	Frequency	%
Clinical sessions are superior to lectures as a mode of instruction.		
Strongly agree/agree	144	83
Neutral	24	14
Strongly disagree/disagree	5	3
If you strongly agree/agree, why?		
Small no. of students in clinical sessions	78	45
Active learning and student participation	92	53
Clinical orientation	86	50
Interaction with patients	90	52
Clinical sessions are easier to retain and recall.	93	54
If you strongly disagree/disagree, why?		
Time not adequately utilized	29	17
Sessions are conducted by junior doctors	49	28
Theoretical aspect of the topic not covered properly	49	28
Lectures should be replaced by clinical sessions.		
Strongly agree/agree	111	64
Neutral	43	25
Strongly disagree/disagree	19	11

Table 4: Students' opinion regarding duration of lectures

Characteristic	Frequency	Percentage
The duration of the lectures should		
Be reduced	188	54
Be increased	19	5
Remain the same	140	40
For how long are you able to concentrate during a lecture?		
Not at all	19	5
First 10 minutes	56	16
First 20 minutes	111	32
First 30 minutes	131	38
45 minutes	29	8
Do you skip lectures?		
Yes	243	70
No	104	30
If YES, how often?		
Rarely	128	37
Almost once a week	87	25
Almost twice a week	69	20
Almost thrice a week	35	10
Almost daily	28	8

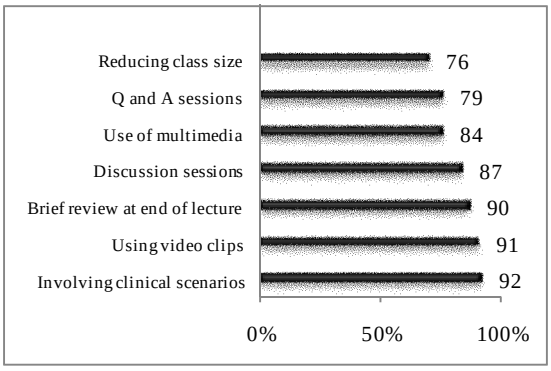

Figure-5: Students' opinion on how the effectiveness of lectures can be improved (N=347)

DISCUSSION

An education in medicine nowadays involves both learning and learning how; the student cannot effectively know, unless he or she knows how.[1]

Lectures do facilitate learning to a variable extent but whether they answer this 'how', remains highly questionable as this mode of instruction is blamed to produce little cognitive gain.[9] Various studies conducted in Pakistan found lectures to be an inefficient mode of instruction, recommending improvisations.[28–31] The results of our study reinforced the above mentioned findings.

In addition to this, analysis of the responses that we got revealed some intriguing trends. An interesting finding was that male students consistently rated lectures to be a poor mode of instruction. Social and cultural contextualization might give us a better understanding of this trend than a purely educational approach, but this aspect is beyond the scope of this study.

Similarly, students from clinical years expressed their dissatisfaction with the didactic mode of teaching with an overwhelming opinion that clinical sessions are superior to lectures. A number of studies have reported poor and unsatisfactory level of clinical skills among medical students and fresh graduates[32,33] one of the possible explanations of which could be a disproportionately greater focus on theoretical teaching, ignoring the much important clinical aspects of medical education. This finding is particularly important if any restructuring of curriculum or teaching techniques have to be made, as a greater emphasis on clinical education and training is required because evidently, students from clinical years have not been able to adequately utilize the time spent on lectures.

While analyzing the data for students who skip lectures and those who do not, we found significant differences. Students who skip lectures appear to have a shorter concentration span during a lecture and found lectures to be boring, less interactive and less comprehensive as compared to students who do not skip lectures. Probably these are some of the reasons that these students skip lectures for. It is not possible to write off their opinion altogether considering them outliers, as our results show that these students represent the majority. So in order to bring these students back to lecture halls, their feedback has to be taken into account.

Various studies have found that concentration during a lecture does not extend beyond twenty minutes or may be even less.[5,20,21] The findings of our study reflect the same opinion. So, what about the rest of 15 or 30 minutes? Multiple studies have discussed the benefit of small interventions to maintain the concentration of students and enhance the effectiveness of lectures like use of video clips, demonstrations, discussion sessions, review of the lecture content etc.[9,22] Our respondents seem to agree with the above mentioned findings, suggesting that incorporation of these techniques can significantly improve the effectiveness of lectures.

STRENGTHS AND LIMITATIONS

We had a large sample involving students from five medical colleges including both public and private sector institutions. The gender ratio of our study participants is similar to that in medical institutions. Results of our study are generalizable to similar population.

RECOMMENDATIONS

Lecturing techniques have to be improvised for an optimal utilization of time and resources spent on lectures and to meet the learning goals. Training programs for lecturers can help in this regard.[24] Further studies to assess students' ability to recall lecture content and its comparison with clinical sessions and other modes of instruction, like small group discussions, can be carried out.

CONCLUSION

Lecturing techniques need to be improvised. The traditional passive mode of instruction has to be replaced with active learning and inquiry based approach to adequately utilize the time and resources spent on lectures.

ACKNOWLEDGEMENT

We are thankful to the faculty of participating institutions for their help in data collections. We are also indebted to all the study participants for sparing time to fill the questionnaire, without which this research would have not been possible.

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