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Research Article

FACILITATORS AND BARRIERS FOR BEDSIDE TEACHING IN THE TEACHING HOSPITALS OF COASTAL SOUTH INDIA

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ABSTRACT

Objectives: The aim was to assess and compare the perception of clinical faculty toward bedside teaching (BST) for undergraduate medical students and the barriers encountered by them.

Methods: The present cross-sectional study was carried out among clinical faculty of three tertiary care hospitals attached to a medical college in Mangalore. A total of 94 clinical faculties, excluding the post-graduates, were approached by using convenient sampling. A semi structured questionnaire was distributed to the participants of this study. The response to the perceptions and barriers of BST was captured using five-point Likert scale.

Results: The age of the study participants ranged from 27 to 60 years (mean age of 38±8.85 years). Most of the study participants strongly agreed that BST is an essential part of clinical medicine, which improves communication skills, practical skills by providing trigger scenarios to stimulate learning. They disagreed toward classroom teaching being equal to BST in imparting knowledge and students being capable of acquiring knowledge from clinical books without BST. There was a significant difference in perception score of barriers toward BST among medical and surgical faculty in relation to bigger group size and increase the workload being deterring factors for effective BST.

Conclusion: BST is still valued by the clinical fraternity as an efficient teaching tool for the medical students even in this era of simulation based training.

Keywords: Bedside teaching, Facilitators, Barrier, Clinical faculty.

INTRODUCTION

Sir William Osler, one of the greatest promoters of bedside teaching (BST) as a mode of medical education, made the following famous quotes; "To study the phenomena of disease without books is to sail an uncharted sea while to study books without patients is not to go to sea at all." "Medicine is learned by the bedside and not in the classroom" [1,2]. The patient's bedside is considered one of the most ideal settings to teach physical examination and medical interviewing. The main objective of this method is to demonstrate physical findings in the patient [3].

Though BST is believed to be one of the most important and effective tool in teaching a variety of skills important for the medical profession, which include clinical and communicational skills, the practice of BST is declining and this has played a major role in causing a sharp decline in trainees' clinical skills [4]. Profound advances in technology, in imaging, and in laboratory testing and our fascination for these aspects of patient care, account for part of this decline [5]. Other hindrances include increased patient turnover in hospitals, the assumed violation of patients' privacy and an increased reliance on technology in the diagnostic process, time constraints, patients not in bed, noisy ward, lack of support from ward staff, patient anxiety, lack of own understanding of student learning needs, lack of student knowledge in basic science' and lack of student clinical skills [6]. The decline in BST has led to the lack of knowledge about various physical diagnostic skills among students [7]. If this teaching modality is to remain a valuable educational method for inculcating clinical skills, Impediments to BST need to be overcome.

The objective of this study is to assess and compare the perception of clinical faculty toward BST for undergraduate (UG) medical students and the barriers encountered by them.

METHODS

The present cross-sectional study was carried out among clinical faculty of three tertiary care hospitals attached to a medical college in Mangalore. The sample size for the present study was calculated based on the study, which showed that 95% of the clinical faculty strongly agreed that BST is an effective way to teach professional skills to UG medical students [8]. Taking 5% relative precision and 95% confidence level the sample size was found to be 85. Adding 10% as non-response error, final sample size was calculated to be 94.

After obtaining the clearance from the Institutional Ethics Committee of Kasturba Medical College, Mangalore, permission was obtained from the medical superintendents of the concerned hospitals for conducting the study. The clinical faculties, excluding the post-graduates, were approached by using convenient sampling and were explained about the purpose of the study and a written informed consent was taken from all those willing to participate.

A semi-structured questionnaire, prepared by referring to the relevant published literature, was distributed to the participants of the study. This questionnaire consisted of questions pertaining to the perceptions and barriers regarding BST. The response to the perceptions and barriers of BST was captured using five-point Likert scale; 1 being strongly disagree, and 5 being strongly agree. Data obtained were entered and analyzed using statistical software "Statistical Package

for Social Sciences" version 11.5. Descriptive statistics such as mean, proportions, and standard deviation were used for expressing the results. Unpaired t-test was used to see the difference in mean scores of perception and barriers for BST among medical and surgical faculty. $p<0.05$ was considered as statistically significant.

RESULTS

Among the 94 clinical faculty who were enrolled in the study, more than half were in the age group of 26-35 years (n=49, 52.1%) followed by those in the age group of 36-45 years (n=25, 26.6%) and the rest were >45 years of age (n=20, 21.3%). The age of the study participants ranged from 27 to 60 years (mean age of 38±8.85 years). It was observed from the present study that the majority of the study population were males (n=59, 62.8%) and most of them belonged to the medical specialty (n=53, 56.4%). The study revealed that the majority of the participants were assistant professors (n=29, 30.9%). The proportion of senior residents (n=22, 23.4%), professors (n=22, 23.4%) and associate professors (n=21, 22.3%) was found to be almost equal. The median experience of the clinical faculty was found to be 6 years with inter quartile range of 2.75-13 years. A large number of clinical faculty had an experience of ≤5 years (n=45, 47.9%), followed by those with experience of 6-15 years (n=34, 36.2%) and then by >15 years of experience (n=15, 16%). The baseline characteristics of the study population are depicted in Table 1.

Clinical faculty perception toward BST was assessed by using five-point Likert scale and comparison of mean perception score between medical and surgical specialty are depicted in Table 2. Most of the study participants strongly agreed that BST is an essential part of clinical medicine, which improves communication skills, practical skills by providing trigger scenarios to stimulate learning and teaches humanistic aspects of medicine. They disagreed toward classroom teaching being equal to BST in imparting knowledge and students being capable of acquiring knowledge from clinical books without BST. They had a neutral view about subjecting the students to mannequin stimulation prior to BST. However, while analyzing the perception score among medical and surgical faculty, no significant difference was found.

Clinical faculty perception of barriers toward BST was assessed by using five-point Likert scale. Most of the clinical faculty strongly agreed that engaging students from different semesters, bigger group size, insufficient knowledge of students in applied basic sciences and students not knowing the local language formed the major constraints in effective BST. They had a neutral view about students not following a desired decorum being a barrier to BST. Increased workload of the faculty (research/administrative/clinical), lack of incentive/reward for taking bedside classes and interruptions while taking classes such as phone calls, visitors, noisy wards received neutral response as being impediments to BST. They strongly disagreed on shorter length of patient stay and were neutral on lack of patient co-operation being a deterring factor for BST. Lack of blackboards or X-ray boxes and lack of pre-planned schedule were not considered as barriers to BST by clinical faculty. There was a significant difference in perception score of barriers toward BST among medical and surgical faculty in relation to bigger group size and increase workload (research/administrative/clinical) being deterring factors for effective BST. Comparison of perception of barriers toward BST among medical and surgical faculty are shown in Table 3.

Table 1: Baseline characteristics of study population (n=94)

Characteristics	Frequency	Percentage
Age group (years)		
26-35	49	52.1
36-45	25	26.6
>45	20	21.3
Sex		
Male	59	62.8
Female	35	37.2
Specialty		
Medical	53	56.4
Surgical	41	43.6
Designation		
Senior Resident	22	23.4
Assistant Professor	29	30.9
Associate Professor	21	22.3
Professor	22	23.4
Experience (years)		
≤5	45	47.8
6-15	34	36.2
>15	15	16.0

DISCUSSION

Clinical education which includes substantial BST is essential to inculcate important skills in students. Most of the skill necessary in patient contact can be best learned at the bedside which involves communicating effectively with patients and also medical ethics. In the modern era of education, various barriers to this teaching modality are prevalent which needs to be overcome.

The present study was carried out to determine the perception of clinical faculty towards BST and the various barriers faced in its practice. The present study included 94 clinical faculties of both medical and surgical specialty where in equal representation of associate professors and professors were taken, and the median experience of the clinical faculty was 6 years. This is in line with a multicenter qualitative study conducted in the US where 50% of the study population was associate professor or professors with average 14 years of experience [8].

Table 2: Comparison of perception towards BST among medical and surgical faculty (n=94)

Perception towards BST	Medical mean score (±SD)	Surgical mean score (±SD)	p*
It is an essential part of clinical medicine	4.96 (0.19)	4.93 (0.26)	0.45
It ensures better student participation	4.72 (0.66)	4.61 (0.66)	0.43
It improves communication skills of students	4.70 (0.60)	4.68 (0.60)	0.90
It inculcates practical skills/ knowledge	4.83 (0.37)	4.78 (0.47)	0.57
It teaches students the humanistic aspects of medicine	4.51 (0.74)	4.49 (0.63)	0.88
It provides trigger scenarios to stimulate learning	4.47 (0.72)	4.56 (0.63)	0.53
It builds the ability to arrive at differential diagnosis	4.60 (0.63)	4.39 (0.89)	0.17
Students can acquire knowledge even from clinical books without BST	2.26 (1.30)	2.56 (1.36)	0.28
Classroom teaching imparts equal knowledge as BST	2.40 (1.09)	2.44 (1.02)	0.84
Mannequin simulation prior to bedside exposure helps the students in orienting themselves regarding patient approach	3.55 (0.97)	3.61 (0.91)	0.75
BST should include demonstration of simple/ diagnostic procedures (IV cannulation, lumbar puncture, CPR), investigations	4.02 (0.79)	4.24 (0.86)	0.19

*Unpaired t-test. IV: Intravenous, CPR: Cardiopulmonary resuscitation, BST: Bedside teaching, SD: Standard deviation

Table 3: Comparison of perception of barriers towards BST among medical and surgical faculty (n=94)

Barriers towards BST	Medical mean score (±SD)	Surgical mean score (±SD)	p*
It is difficult to engage students from different semesters	3.47 (1.13)	3.93 (1.08)	0.052
Bigger group size hinders effectiveness of teaching	4.08 (0.78)	4.39 (0.70)	0.046
Increased workload (research/ administrative work)	3.13 (1.05)	3.68 (3.68)	0.014
No separate incentive/reward for taking bedside classes	2.83 (1.26)	3.15 (1.33)	0.244
Interruptions due to phone calls, visitors, excessive noise in wards	3.04 (1.10)	3.27 (1.07)	0.313
Shorter length of patient stay in hospital	2.62 (0.98)	2.85 (1.23)	0.316
Lack of patient co-operation	3.06 (1.04)	3.22 (0.98)	0.445
Students not knowing the local language hinders complete history taking	4.02 (0.97)	3.83 (0.83)	0.321
Insufficient knowledge of students in applied basic sciences	3.75 (0.93)	3.78 (0.90)	0.894
No blackboard or X-ray view boxes for discussion	2.72 (0.96)	2.73 (0.97)	0.942
No pre-planned schedule for classes	2.58 (1.04)	2.71 (1.03)	0.573
Students do not follow desired decorum (e.g.: improper dress code, use of cell phones)	3.25 (1.09)	3/63 (1.11)	0.093

*Unpaired t-test, BST: Bedside teaching, SD: Standard deviation

When the perception of clinical faculty toward BST was assessed, it was observed that the majority agreed BST is an essential part of clinical medicine. This finding was corroborated with that obtained in the study conducted in John Hunter Hospital, Newcastle, Australia [9] where 95% of the study participants believed BST was an important modality in teaching clinical skills to the student.

The main hindrances to BST found while assessing the result of the present study were increased group size, engaging students from different semesters, insufficient knowledge of students in applied basic sciences and students not knowing the local language. These findings are akin to those obtained in a study conducted in Newcastle, Australia [9]. In addition to the above mentioned barriers, lack of support from the nursing staff, unavailability of patients due to visiting relatives, noisy wards and patients not in bed were mentioned as impediments, which were not found in our study. Lack of reward was highlighted as the main barrier to BST [9], which was not considered as a barrier in our study. A similar study conducted in Dundee, UK [10] was analyzed and it showed that limited patients with good clinical signs, lack of privacy in the wards, shorter length of patient stay in the hospital, interruptions from phone calls and relative were the main hindrances. These were not found in our study. In contrast to the results obtained in our study with respect to barriers to BST, another multicenter qualitative study conducted in the US [8] specified patient related issues like hostile/angry patient, concern for patient discomfort, concern for discussion of sensitive issues in front of the patients as barriers to effective BST.

On screening a focus group study of clinical teachers conducted in US [11], performance pressure in younger teachers was emphasized as an important barrier to BST. This particular barrier was not brought out in our study.

CONCLUSION

BST is still valued by the clinical fraternity as an efficient teaching tool for the medical students even in this era of simulation based training. Even though, it was perceived as an important teaching modality, it is not without impediments. Identifying and overcoming these impediments will enhance the ability of UG medical students to incorporate their theoretical knowledge with practical skills.

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REFERENCES

1. Stone MJ. The wisdom of Sir William Osler. Am J Cardiol 1995;75:269-76.
2. Lindeboom GA. Herman Boerhaave (1668-1738). Teacher of all Europe. JAMA 1968;206(10):2297-301.
3. Kroenke K, Omori DM, Landry FJ, Lucey CR. Bedside teaching. South Med J 1997;90(11):1069-74.
4. Ramani S. Twelve tips to improve bedside teaching. Med Teach 2003;25(2):112-5.
5. LaCombe MA. On bedside teaching. Ann Intern Med 1997;126:217-20.
6. Peters M, Ten Cate O. Bedside teaching in medical education: A literature review. Perspect Med Educ 2014;3(2):76-88.
7. K Ahmed Mel-B. What is happening to bedside clinical teaching? Med Educ 2002;36(12):1185-8.
8. Gonzalo JD, Heist BS, Duffy BL, Dyrbye L, Fagan MJ, Ferenchick G, *et al*. Identifying and overcoming the barriers to bedside rounds: A multicenter qualitative study. Acad Med 2014;89(2):326-34.
9. Nair BR, Coughlan JL, Hensley MJ. Impediments to bed-side teaching. Med Educ 1998;32(2):159-62.
10. Shehab A. Clinical Teachers' Opinions about Bedside-based Clinical Teaching. Sultan Qaboos Univ Med J 2013;13(1):121-6.
11. Ramani S, Orlander JD, Strunin L, Barber TW. Whither bedside teaching? A focus-group study of clinical teachers. Acad Med 2003;78(4):384-90.