A HOLISTIC APPROACH TO BEDSIDE TEACHING FROM THE VIEWS OF MAIN USERS

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Abstract

Introduction: Clinical education concerns with acquiring lots of skills and competencies that enable health professionals to function properly and provide services effectively. The aim of this study was to evaluate a holistic examination on bedside teaching from the views of its main users.

Materials and methods: This is a cross sectional study on 70 teachers (clinical and nursing), 70 students (medical and nursing), 400 patients in Jahrom University of Medical Sciences. Data gathering tool was a three-part questionnaire in which the first part was assigned to demographic data, the second part was 10 five-part questions aiming at investigating bedside teaching quality for teachers, students, and patients. Reliability was 0.83, 0.78, and 0.89 respectively.

Results: The results showed that teachers evaluated bedside teaching in three areas of communication skills (50.4), proper clinical examination (44.4), and developing professional skills (44.4) more than other fields. Sharing some in common, the students also had a higher average in acquisition of professional skills (83.3) enhancing knowledge of students (82.3) and obtaining a suitable model of communication (72.3). The patients also considered factors such as high self-esteem, feeling of satisfaction (3.83), humanized health care (3.83), and transfer of information to both teachers and students (3.83) higher than other factors.

Conclusion: According to the results, it is necessary to appropriately train teachers to meet these standards, and while justifying students to implement this method and its benefits, patients' satisfaction, enhancing health care, and effective clinical governance should be provided.

Key words: Bedside teaching, Teachers, Students, Effectiveness

Introduction

Bedside teaching includes any kind of training in the presence of the patient, regardless of the environment in which this training is presented. Several studies indicated that clinical teaching is an effective method of training and today it is used less than in the past, but students, patients, and faculty members strongly support this teaching method(Subha and 2003). In this way, clinical skills related to communication between doctor and patient, physical examination, clinical reasoning and obtaining specific skills of professionals will be learned better than classroom instruction methods (Williams, et al. 2008). Ramani and colleagues also expressed the benefits of clinical teaching as communication skills, clinical examination findings, teaching human aspects of clinical medicine and creating conditions to model professional behavior, so that these qualities cannot be shown effectively in the classroom (Ramani, et al. 2003).

Furthermore, the clinical teaching provides opportunities for teachers to observe students (El-Bagir and Ahmed 2002)(4). There is also evidence that suggests that these patients also enjoy this teaching method, because they gain a better understanding of the disease (Janick and Fletcher 2003)(5). In research conducted by Williams Kit and colleagues on four-year medical students and internal residents in first and second years in medicine school at Boston University, students believed that clinical teaching is valuable and necessary to learn clinical skills and expressed that this method is used less frequently and there are many obstacles in performing it, including lack of respect to the patient, time constraints, lack of attitude, knowledge and skills of the teachers, and also mentioned strategies for solving these problems(Williams, et al. 2008) (2)

Ramani and colleagues conducted a study focused on four groups including senior assistants, skilled teachers in clinical teaching, faculty members of hospitals affiliated to Boston University and named the main obstacles as reduction of clinical teaching skills, and the fear of clinical teaching. They believed that teachers should be trained in almost all unreachable levels of clinical diagnosis and this puts them under a lot of pressure. They expressed that teaching is less important than research in the universities and teaching ethics is missing. Thus, they presented some strategies to eradicate these obstacles including: developing clinical teaching skills by teaching faculty members in clinical skills and teaching methods, ensuring that teachers possess great capabilities in clinical teaching, making a learning atmosphere to allow the teachers to accept their limitations, and eliminate low value of teaching in the departments with appropriate recognition and considering rewards for the successful teachers. In the present study, expert teachers and professors stated that the ethics of clinical teaching must be established on emphasizing the importance of using this method to get students to think clinically(Ramani, et al. 2003).

Aldeen and Gisondi also conducted a study on clinical teaching in emergency department and expressed that the emergency department is an ideal atmosphere for clinical teaching because of high volume of patients, high acuity and severity of diseases and pathologies that provide a variety of patient-centered educational opportunities(Aldeen and Gisondi 2006).

One of the major concerns of the clinical teachers is creating a learning-teaching approach to transfer learning which occurs in the teaching environment to the real and clinical environment. Since interaction between medical staff and patients is considered as an important fact in clinical work and is necessary for treatment process and this interaction is in the presence of the patient, therefore, research and teaching strategies should be as close as possible to the real environment (Brien 2002). Clinical training mission is to train qualified students with necessary knowledge, attitudes, and skills, and to achieve this objective, standardized clinical training is an essential component of the educational programs, since approximately 50% of the teaching programs are dedicated to clinical works (Irma, et al. 2011). It is generally accepted that research methods should focus on beliefs, values, and behavior of teachers in the education system (Karimi Moonaghi et al 2010). But in recent years, research on teaching methods and their applications are more superficial and thus, deeper investigation is required (Heimlich and Norland 2002) . Clinical teaching is a valuable method used by teachers despite their relative familiarity with it. Another notable point is failure to meet teaching standards in implementing this method and lack of appropriate use of it in clinical teaching. The aim of this study is to investigate quality and effectiveness of bedside teaching on students, teachers, and patients' points of views and determine constraints and challenges and propose strategies to remove them and finally, positive steps are taken to use these teaching methods more effectively.

Materials and Methodologies

This is a cross-sectional study to investigate the effectiveness of bedside teaching on teachers, medical students, and patients' attitudes in the hospital affiliated to Jahrom University of Medical Sciences. Cluster random sampling was carried out on medical students in various fields of medical sciences (medical and nursing students) and all nursing and clinical faculty. Approximate number of students in the two groups of medicine in three levels (externs - Interns) and nursing and training courses were 70. 50 teachers of different groups (nursing and medicine) participated in this study that performed clinical teaching for the students. In the patients' group, in a two-month period, all patients who were present in bedside teaching numbered 400 and bedside teaching was carried out on them.

Approving the research proposal and obtaining approval of the research director, validity of the questionnaire was confirmed according to reliable sources (1, 3, 6), and then 10 expert professors confirmed it. Reliability in three sectors (teachers - students and patients) was proved with Cronbach's alpha by working on a pilot sample respectively (0.78- 0.83 and then 0.89). The questionnaires were given to students (doctors, nurses), patients and staff and then coded, collected, and analyzed using SPSS statistical software. It is worth mentioning that the questionnaires were designed by Likert method (never, to very high, 0-4) and in addition to demographic questions, 11 more questions were included which assess the effectiveness of clinical teaching from the viewpoints of masters, students, and patients. Data was analyzed using descriptive statistics such as mean, standard deviation, and Spearman and K2 test.

Inclusion criteria for the study were the interest of students, teachers and patients to participate in the study, as well as internship and performing bedside teaching by the teachers and exclusion criteria included illiterate patients, patients with somatic and psychiatric disability, patients in critical units because of the lack of accountability, patients where this method was not determined in their wards and patients in ambulatory wards.

Results

The results showed that the pattern of acquisition of good communication, training, performing physical exam, gaining professional skills and increased general information have a higher average. From the students' views, gaining professional skills and increasing students' general information and obtaining appropriate communicative plans have higher average.

Table 1: Mean score of bedside teaching quality from the perspective of both teachers and students

Questions	Students	Teachers
	Average and SD	Average and SD
Gaining a good communication model	4.50(0/54)	3.72(0/98)
Teaching clinical examination	3.72(0/98)	3.58(0.98)
Gaining professional skills	98(0/72.3)	3.83(0.92)
Increasing students' information	4.19(0.71)	3.82(1.02)
Increased students' information based on evidence-based medicine	3.61(0.79)	3.65(1)
Encourage information search and removing knowledge gaps due to not knowing the contents	3.67(0.96)	3.50(1.09)
Learning how to engage the patient in the treatment process of him/herself	3.57(0.97)	3.33(1.14)
The implementation of this method in all sectors including hospitals, clinics and operating rooms	3.50(1.01)	3.56(1.06)
Transfer maximum information in minimum time	3.48(0.95)	3.44(1.08)
Correct way to take history	4.01(0.85)	3.67(1.10)
Learning the exact methods of reporting and documentation of patient records	4.01(0.80)	3.57(1.17)

Table 2 (opposite page) shows that most students considered the quality of bedside teaching from moderate to high.

Additional results showed that there is a significant relationship between the effectiveness of bedside teaching and field of study (02/0 P = ,60/17 X2). But there is no relationship between age, sex, and method effectiveness. There is a significant relationship between viewpoints of both sexes on the effectiveness of bedside teaching (T= 3/87, P= 0.02). Other results showed that there is a significant difference among students in terms of fields of study.

Table 3: Mean differences in terms of effectiveness of bedside teaching based on field of study

Field	Average	Mean square	F	P
Nursing	51.39(6.9)	424.35	6.95	0.0001
Anesthesia	36.30(10.1)			
Operating room	38(2.1)			
Emergencies	25(1.2)			
Medicine	46.2(6.7)			

Table 2: Descriptive statistics of the effectiveness of bedside teaching from students' views

Questions	Very low	Low	Average	High	Very high
Gaininga good communication model	6(4.3)	5(3.6)	40(29)	57(41.3)	30(21.7)
Teaching clinical examination	6(4.4)	10(7.3)	41(29.9)	58(42.3)	22(16.1)
Gaining professional skills	6(4.3)	3(2.2)	27(19.6)	74(53.6)	28(20.3)
Increasing students' information	5(3.6)	8(5.8)	32(23.2)	54(39.1)	39(28.3)
Increased students' information based on evidence-based medicine	5(3.6)	11(8)	43(31.2)	47(34.1)	32(23.2)
Encourage information search and removing knowledge gaps due to not knowing the contents	7(5.1)	16(11.6)	44(31.9)	43(31.2)	28(20.3)
Learning how to engage the patient in the treatment process of him/herself	99(6.61)	23(16.9)	42(30.91)	38(27.9)	24(17.6)
The implementation of this method in all sectors including hospitals, clinics and operating rooms	8(5.8)	12(8.7)	37(26.8)	56(40.6)	25(18.1)
Transfer maximum information in minimum time	6(4.3)	20(14.5)	45(32.6)	41(29.7)	26(18.8)
Correct way to take history	9(6.5)	9(6.5)	32(23.2)	56(40.6)	32(23.2)
Learning the exact methods of reporting and documentation of patient records	11(8)	13(9.4)	31(22.5)	51(37)	32(23.2)

vs

Additional results related to the effectiveness of this method indicated that the majority of patients were in the age groups 60-51 years (25.3%) and the majority with 43.3% in wards, 52% men's internal ward, and 48% women's ward, and majority had primary education.

Table 4: shows that this method is most effective in raising self-esteem and feelings of patient satisfaction and cause medical care to become humanistic and useful information passes to students and the teachers.

Component	Mean	Min	Max
Increase patient awareness of the disease.	3.47(1.31)	1	5
Patient awareness of treatment	3.58(1.19)	1	5
Increasing patient participation in the treatment process.	3.65(1.24)	1	5
Humanized health care	3.77(1.19)	1	5
Increased self-esteem and satisfaction	3.78(1.22)	1	5
Convey useful information to teachers and students	3.76(1.22)	1	5

59.9% of the patients evaluated the bedside teaching as high and very high, 26.5% average, and only 3.3% low and very low.

Other results showed that the quality and effectiveness of this method are high, and very high from the viewpoints of patients. Other results showed that there is a significant relationship between age and education in terms of correlation between age and effectiveness of bedside teaching (p= 0.008, r= 0.15).

But there is no significant relationship between the effectiveness of bedside teaching in terms of sex, kind of disease, the ward, and the education.

Other results indicated that there is a significant relationship between patients' viewpoints of effectiveness of bedside teaching based on age (F=2.47, P=0.03). But as other cases show, it is suggested that the effectiveness of the method based on demographic variables was not significant.

Table 5: Difference of bedside teaching effectiveness based on demographic variables

Demographic Variables	States	Total square	Df	Mean square	F	P
Age	Within group Between group	699.615 15344.60	5	139.92 56.62	2/47	0.03
Ward	Within group Between group	141.48 15902.73	3	47.16 58.25	0.81	0.48
Disease	Within group Between group	81.22 15963	2	40.61 58.25	0.69	0/49
Education	Within group Between group	413.38 15630.83	3	137.79 57.25	2.40	0.06

Discussion

The results show that obtaining a good communicative pattern, appropriate teaching, clinical examination, acquisition of professional skills and increasing students' scientific information on the viewpoints of teachers have a higher average.

In another study conducted to investigate the experiences of advisor faculties and fourth-year students of medicine in a qualitative study on bedside teaching of medical students and advisor faculties, advisor faculties were under pressure considering time spent over other commitments, despite enjoying this approach. The results showed that all of the teaching strategies used by the teachers were not welcomed with great enthusiasm by the students. Students considered the teachers as an educational model (Stark 2003a).

In a study conducted by Celenza, Rogers, with the aim of investigating the effectiveness of bedside teaching on patient care with a 6-month perspective study in emergency department, people stated that the most common lesson they took from this method was skills in history taking and physical examination and cited clinical reasoning as the most important lessons learned from this approach(Celenza and Rogers 2006).

Studies conducted by Gonzalo et al on 51 local residents and 102 medical students from educational rounds and bedside teaching revealed that time spent in clinical practice for the learners to learn bedside teaching is very important for professional development and that this method is preferred by the learners compared with other methods of bedside teaching training (Gonzalo, et al. 2009).

In another study, hospitalists spent an average of 101 minutes on teaching rounds and an average of 17 minutes inside patient rooms or 17% of their teaching time at the bedside. This study showed rounds that included time spent at the bedside were longer on average than rounds that did not include time spent at the bedside(Crumlish, et al. 2009).

In research conducted on 27 patient attendants, 22 patients, and 21 residents, the attendants expressed their satisfaction with bedside teaching and presented a case report in a conference room in a linear range. 96 versus 92 out of 100 linear parts, expressed their preferences with bedside teaching (95 vs. 15), and comfort (89 vs. 19) in this range. But there was no significant difference in residents' satisfaction and comfort in applying this method. These people were more comfortable in asking questions (84 vs. 69), having the art

of asking questions (85 vs. 67) in the conference room. This study showed that 81% of patients' attendants wished that the next examination was with their patient.

Evidence shows that bedside teaching includes 61% of clinical training and performed examinations. This method takes more time than the typical round (Landry, et al. 2007).

A study conducted to evaluate this educational method and its impacts on the attitudes of students and patients, revealed that although there is a slight difference among some students, to present the contents away from the patient's bedside, students expressed that students learned more about diagnosing and staying by the patients' bedside at the time of bedside teaching. But students' knowledge of mechanism of diseases was lower than presentation out of clinical wards(Rogers, et al. 2003).

In a study conducted on 108 patients and 142 fourth-year medical students at Washington University, students and patients preferred bedside teaching as a teaching method; patients more easily communicate with doctors and talked about their health issues.

Also, two groups of patients and students benefited more from participating in bedside teaching (17).

In another study aiming at examining viewpoints of internal residents and medical students, it became clear that this approach is effective in developing skills such as history taking 55%, physical examination skills (89%) professional 72%, physician-patient communication skills 83%, differential diagnosis 43%, and patients' management 59% (Jed, et al. 2009).

Some evidence states that outcome of this method is dependent on 1) the value of peer assessment in a group, (2) variety of teaching strategies, (3) the opportunities to provide feedback to learners, (4) the art of asking questions effectively, and (5) the possible relationship between a teacher's skills and successful bedside teaching (Beckman 2004).

In another study the importance of peer assessment was investigated and the benefits such as high value of using peer assessment, applying an unlimited number of teaching strategies, applying this method to revive missed opportunities, the art of asking question effectively, and the relationship of teacher maturity and bedside teaching were emphasized. The results of this study are the same with the abovementioned results considering bedside teaching approach so that the development of communication skills, performing proper clinical examination, and improvement of professional skills, were expressed as the most important results regarding the quality of this method.

The results also showed that all of the teaching strategies used by teachers in this method may not be welcomed by the students. And, despite the fact that students and teachers are partners in education, general agreement about the quality, quantity and clinical teaching may fail to be materialized considering appropriate clinical teaching(Stark 2003b).

In the present study, despite acceptable reported quality of bedside teaching and its clinical aspects (moderate to high) which indicates the relative familiarity and acceptable application of this educational method, lack of time is considered as an obstacle to applying this technique.

The positive effects of this method can be noted as numerous roles of the clinical teachers including, actor, director, audience, passive, and listener. Also, in presenting this method, the patients undergo less passive roles and mere audience (Lynn 2009). This can justify the obtained results regarding patients' satisfaction and their consent to participate in this educational method.

Also, the positive effects of this method on patients' participation in health care plans and changing their positions due to participation can be noted as an advantage of this method. However, no negative impact on patients' care was found. The results of this study are consistent with the results presented in the following study (Celenza and Rogers 2006). Other advantages of this method may include opportunities to gather additional information, direct observation of learners' performance, humanizing care for patients, non-judgmental language, improving patients understanding of their disease and feeling active on the side of patient(Janicik and Fletcher 203). All of these outcomes justify patient satisfaction with the use of this method.

Given the quality of the bedside teaching provided by main users of this educational method, it is necessary to consider different approaches and strategies such as clinical skills, teaching methodologies by the teachers, ensuring the application of this method aiming at understanding these points to rely on their knowledge and skills, creating a learning environment that allows teachers to become aware of their limitations and examine their capabilities, sufficient reward for the efforts of the teachers, and emphasis on the revival of ethics in bedside teaching (Ramani, et al. 2003).

Among other strategies to reduce barriers examining the clinical setting, are addressing time constraints by adopting a flexible training program, proper patient selection, ensuring the learners, improve learner autonomy in the teaching process, and developing evidence-based education. (Keith, et al. 2008).

Conclusion

Considering the importance of bedside teaching method and regarding the good views of the teachers, patients, and middle and high students' views, it is necessary to provide training classes to develop teachers' capabilities, justify the students and mention its benefits, and to pave the way to use this method appropriately. Also, using this method considering the positive and appropriate patients' views, can provide a holistic analysis of health care and improve health and to provide effective implementation of clinical governance.

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References

1. Subha R. Twelve tips to improve bedside teaching. Medical Teacher, ,2003 ;25(2): 112 - 115.

2. Williams K, Rammani S, Fraser B, Orlander JD. Improving Bedside Teaching: Findings from a Focus Group study of learners. Acad med 2008 ; 83: 257-264.

3. Ramani S, Orlander JD, Strunin L, Barber TW. Whither bedside teaching? A focus group study of clinical teachers. Acad med 2003; 78: 384-390.

4. EI-Bagir M, Ahmed K. What is happening to bedside clinical teaching? Med Educ 2002; 36: 1185-1188.

5. Janicik RW, Fletcher KE. Teaching at the bedside: a new model. Med Teach 2003; 25 (2): 127 - 130 .

6. Aldeen AZ, Gisondi MA. Bedside Teaching in the Emergency Department. Acad Emerg Med. 2006 Aug;13(8):860-6.

7. Brien RO. An overview of the Methodological Approach of Action Research. 2002. Available from: http: // www. Web.Net/~robrien/ papers/ arfinal.html

8. Irma H. Mahone , Sarah P. Farrell ,Ivora Hinton , Robert Johnson ,et. al. Participatory Action Research in Public Mental Health and school of Nursing: Qualitative findings from an Academic - community partnership. Journal of Participatory Medicine; 2011 ,3.

9. KarimiMoonaghi H ,Dabbaghi F ,Oskouieseid F ,Vehvilainen-Julkunen K.I. Binaghi T Teaching style in clinical nursing education: A qualitative study of Iranian nursing teacher's experiences. Nurse Education in Practice 2010; 10: 8-12.

10. Heimlich J E., Norland E, 2002. Teaching style: where are we now? New Directions for adult and continuing Education 93 , 17- 25.

11. Stark P. Teaching and learning in the clinical setting: a qualitative study of the perceptions of students and teachers. Medical Education 2003;37(11):975-982.

12. Celenza A , Rogers IR. Qualitative evaluation of a formal bedside clinical teaching programme in an emergency department. Emerg Med J 2006;23:769-773 .

13. Gonzalo JD , Masters PA Simons RJ , Chuang CH. Attending rounds and bedside case presentations: medical student and medicine resident experiences and attitudes. Teaching and Learning in Medicine 2009;21(2):105-10.

14. Landry MA , Lafrenaye S , Roy MC , Claude Cyr C. A Randomized ,Controlled Trial of Bedside Versus Conference-Room Case Presentation in a Pediatric Intensive Care Unit. Pediatrics 2007;120;275-280

15. C Rumlish C M ,Yialamas M A, McMahon G T. Quantification of bedside teaching by an academic hospitalist group. Journal of Hospital Medicine 2009;4(5): 304-307.

16. Rogers HD , Carline JD , Paauw DS. Examination room presentations in general internal medicine clinic: patients' and students' perceptions. Acad Med. 2003 Sep;78(9):945-9.

17. Rogers HD Carline JD , Paauw DS. Examination room presentations in general internal medicine clinic: patients' and students' perceptions. Acad Med. 2003 Sep;78(9):945-9.

18. Jed D. Gonzalo ,Philip A. Masters and Richard J. Simons, Cynthia H. Chuang. Attending Rounds and Bedside Case Presentations: Medical Student and Medicine Resident Experiences and Attitudes. Teach Learn Med. 2009; 21(2): 105-110.

19. Beckman T J. Lessons Learned from A Peer Review of Bedside Teaching. Academic Medicine 2004; 79(4): 343-346.

20. Stark P. Teaching and learning in the clinical setting: a qualitative study of the perceptions of students and teachers. Medical Education 2003;37(11):975-982.

21. Lynn V. Monrouxe . The Construction of Patients' Involvement in (Attewell 2006) Hospital Bedside Teaching Encounters. Qual Health Res July 2009 ; 19 (7): 918-930.

22. Celenza A, Rogers IR. Qualitative evaluation of a formal bedside clinical teaching programme in an emergency department. Emerg Med J 2006;23:769-773 .

23. Janick WR ,Fletcher KE. Teaching at the bedside: a new model. Medical Teacher 2003; 25(2) : 127-130 .

24. Keith N W, Subha R, Bruce F, Jay D O. Improving Bedside Teaching: Findings from a Focus Group Study of Learners. Academic Medicine 2008 ; 83 (3): 257-264.

Further reading

Aldeen, A.Z., and M.A. Gisondi. 2006 Bedside Teaching in the Emergency Department. 2006; by the society for academic Emergency medicine doi: 10. 1197/J.aem. 2006. 03. 557. Acad Emerg Med 13(8):860-6.

Attewell, J. 2006 From research and development to mobile learning: Tools for education and training providers and their learner. The International Review of Research in Open and Distance Learning 7(3): Available from www.irrodl.org.

Beckman, T .J. 2004 Lessons Learned from A Peer Review of Bedside Teaching. Academic Medicine. 79(4):343-346.