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Research Article

Pattern of Bedside Teaching at the University of Benghazi-Libya

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Abstract

Background: Bedside teaching (BST) is considered an integral part of the learning process for medical students. It is a fundamental component of clinical training and an essential tool in the creation of a competent physician.

Objectives: This study aimed to evaluate the pattern of current and past methods of (BST) within the Faculty of Medicine at the University of Benghazi.

Method: This questionnaire-based cross-sectional study was carried out by conducting three questionnaires submitted manually to medical students, teaching staff and patients to assess the effectiveness of bedside teaching. The total number of volunteers who participated in the study was 639 of which 538 were current students, 58 patients, and 43 teaching staff.

Result: The majority of involved students were satisfied with BST with an agreement on its effectiveness, better understanding of knowledge and better communication with notes given its short allocated time and students-teaching staff ratio. Teaching staff were satisfied too but disagreed with students' opinions on the time as well as the student-teaching staff ratio. Regarding patients, they were very cooperative and some of them were enjoying the discussion with them majorly agreeing to allow medical students to take history and perform examination after taking permission prior the session’s start. Our study was supported by many other articles that agreed on the effectiveness of involving students in BST instead of classroom teaching while pointing out similar difficulties regarding teaching methodologies and a need for organization and topic selection to be critically assessed and improved.

Conclusion: Time constraints, few wards, and unavailability of patients have been identified as the most frequently encountered impediments to bedside instruction. The survey found strong support for (BST) but a few numbers of obstacles to its implementation. Further research is needed to review methods to enhance teaching at the bedside.

Keywords: Bedside Teaching; Pattern of teaching. Libya; The University of Benghazi

Abbreviation

BST : Bedside teaching

Introduction

Bedside clinical teaching (BST) is described as teaching in the presence of patients. It is apart of the study program that is directly concerned with the patient's health problem. Compared to the undergraduate study, clinical teaching is the most suitable for the objective of medical college[1,2]. The University of Libya is considered one of the oldest universities established in the Arab World. It was established in 1955 as a Public University with two premises in Tripoli and Benghazi and later disestablished in 1973. These colleges were split into two new universities; the University of Tripoli located in the northwest of Libya, and the University of...
Benghazi located in eastern Libya.

Thenames were changed during the last regime in 1976 to Al FatehUniversity and Garyounis University respectively and regained theoriginal names after the fall of the regime in 2011. The Faculty of Medicine in Benghazi was founded in 1970 and it was thefirst medical school in Libya. Other faculties related to medicine such as the Faculty of Pharmacy, Faculty of Medical Technology and Faculty of Nursery were also established in Benghazi in the early 1970s. All medical sciences in 1985 were collected in one region in Benghazi and called Al-Arab Medical University which has been separated from the University of Benghazi. All medical science faculties including the Faculty of Medicine were reinstated as part of the University of Benghazi in 2011.

Benghazi is now known as the center for medical education in Libya and has taken the lead of educating the first generation of Libyan physicians. Many of these medical graduates are now working in leading positions reputed as some of the best medical centers around the world. In 1976 the Faculty of Medicine was founded by the University of Tripoli. Basically, the medical education within Benghazi medical faculties is composed of two mean parts: the basic medical sciences, and the bedside clinical teaching [3]. Bedside teaching (BST) is considered an integral part of the learning process for medical students. It is a fundamental component of clinical training and an essential tool in the creation of a competent physician. Sir William Osler (1849-1919), one of Canada’s most renowned physicians, was the first to introduce BST to medical education in 1892. Describing modern medical education as something that needed to be taught at the bedside, he claimed: “Medicine is learned by the bedside and not in the classroom” [4].

Many aspects beyond knowledge like communication skills, physical examination findings, humanistic aspects of clinical medicine, and the opportunity to role-model professional behavior cannot be addressed or assessed effectively in the traditional classrooms. All of these aspects in addition to the opportunity to observe the learners are best performed with bedside teaching [5]. This study aimed to evaluate the pattern of current and past methods of BST within the Faculty of Medicine at the University of Benghazi by exploring the perceptions and opinions of the medical students, teaching staff, and patients. Reflectively, it will compare outcomes with the modern methods present worldwide by highlighting the defective points and identifying best practice interventions to overcome them. The overall aim is to improve the level of medical education within the university and strive forward to graduate higher professional standards and skilled physicians in the future generations of medical studies.

Materials and Methods

This is a questionnaire-based cross-sectional study conducted by manually submitting three questionnaires for teaching staff in the clinical departments, medical students in the final two years of their degree, and patients admitted to hospitals affiliated to the University of Benghazi. Our questions were customized to evaluate the effectiveness of the clinical teaching methodologies with emphasis on BST. The nature and components of our questions can be represented by (Figures 1-3). The nature and aim of this research were explained to each participating subject who consented while being interviewed. After collecting the results, they were analyzed and the qualitative questions were addressed within the findings. This study first compares the clinical learning tools and methodology within the university in 2007 and 2017, then the current clinical teaching at the University of Benghazi with other universities worldwide.

![Figure 1: Students responses to the questionnaires.](image)
Figure 2: Teachers responses to the questionnaires.

Figure 3: Patients responses to the questionnaires.
Result

The outcome results were composed of the questionnaires submitted manually to each volunteer. The total number of volunteers who participated in the study was 639 of which 538 are current students, 58 patients and 43 teaching staff members (Figure 1). There were a total number of 2135 students during the final two years of the 2017 academic year (1244 Fourth year and 891 Fifth year) of which 1685 females and 450 males. In the year 2007 the total number was only 784 students. In this study 538 students participated by responding to the questionnaire. This represents (25%) of the total number of students in the final two academic years in 2017. The students were aged between 20 and 35 years old, with unequal number of female students compared to male students (466 versus 72) and there were 316 fourth-year students and 222 fifth-year students. Their responses to the questionnaires are shown in Figure 1. Overall there were 36 comments from the students regarding BST. The majority of the students agreed that bedside teaching is the most effective way of learning clinical skills, also that teaching staff member have different way of teaching, that a large number of students attend teaching sessions and that the type of case should be selected by the teacher, not students. In addition, they claim to better understand in bedside teaching sessions as the language of the teacher is clear to them. Furthermore, they agreed that all students are treated equally in teaching sessions. On the other hand, most of the students disagreed about the methods of the final medical exam and that teaching was not covering all variety and number of cases. In addition, students agreed that there is shortage in number of teaching staff in relation to the large number of students. Besides, the teaching time does not follow the timetable and, on top of that, is not enough for teaching sessions. A final drawback is the duration of courses in the different departments is short to cover all cases. Finally, most of the students have no comment about the cooperation of teaching staff with them.

A total number of 43 teaching staff participated in the study, 34 males and 9 females. Their ages ranged from 40 to 62 years old. The following is a breakdown of their academic ranking: 3 x Assistant Lecturer, 17 x Lecturer 8 x Assistant Professor, 8 x Associate Professor and 7 x Professor. The Department of Medicine provided 13 participants. The Department of Surgery provided 23 participants, The Department of Pediatrics provided 3 participants and the Department of Gynecology provided 4 participants against a total of 274 teaching staff from various Clinical Departments in the Faculty of Medicine in 2017. All are of Libyan nationality (107 from the Department of Medicine, 63 from the Department of Surgery, 58 from the Department of Pediatrics, 35 from the Department of Gynecology and 11 from the Department of Ophthalmology). Therefore, the volunteers comprised only 11.78%. In comparison with 2007, there were a total of 321 from various nationalities (112 from the Department of Medicine, 99 from the Department of Surgery, 54 from the Department of Pediatrics, 41 from the Department of Gynecology and 15 from the Department of Ophthalmology). Their responses to the questionnaire are shown below in Figure 2.

There were 8 comments from the teaching staff regarding BST. The majority of the teachers agree that bedside teaching is the most effective way of learning clinical skills, also they have different way of teaching, a large number of students attending teaching sessions. They furthermore agreed about having the patient’s permission before starting clinical teaching, also indicating that the heads of department cooperate with them, that time is enough for giving clinical teaching, that cases should be selected by them not the students, and finally that the students were cooperative with the teachers.

On the other hand, the methods of the final medical exam were not satisfying, and the teaching did not cover all variety and number of cases. Moreover, the basic medical knowledge of the students was not satisfactory, and a final drawback was that the students were late to attend the clinical teaching.

The comments from the teaching staff regarding BST basically were about a total of 58 patients from nine working hospitals in Benghazi who participated in the study in 2017 from various clinical departments. There were 7 males and 51 female patients volunteer in this study. Their ages ranged from 15 to 90 years old. Their responses to the questionnaire are shown below in Figure 3. There were no specific comments, notes or feedback from any of the patients. Most of the patients agreed about the history being taken by the students and discussion of their cases carried out in front of them as this almsakes them aware of their condition. In addition, early morning time is suitable for them, and also they prefer to give permission before teaching. On the other hand, most of them disagree on the 2 hours’ duration time for teaching. More importantly, they were adamant the physical examination by the students better to be avoided since, in general, they did not enjoy it.

Discussion

Clinical teaching is concerned with the learning of some clinical skills such as history taking, physical examination, clinical thinking, and communication skills. Most of the patients’ diseases can be diagnosed after history taking and up to 75% of diagnoses can be reached after a physical examination [6]. Since the start of medical education at the University of Benghazi in 1970, there has been a drastic increase in the number of medical students graduates from the Faculty of Medicine. However, the overall methodology and teaching styles, including the number of teaching staff, number and presenting cases and the number of teaching hospitals have declined. On the other hand, the economic situation, the financial corruption, the war and the political conflict in this country also play a major role in the quality and reduction of medical education outputs. Notably, BST has become more obvious after the fall of the regime in 2011.

BST is defined as supervised teaching in the presence of a patient with an expert clinician supervising a group of students at the patient’s bedside to elicit a history or observe physical signs. Historically this was the most common form of medical student education outputs.
teaching. However, currently, it is primarily seen as an adjunctive teaching method to classroom-based and informal teaching. Documented reasons for this include time constraints on tutors, increasing reliance on biochemical testing and medical imaging, and consultation of subspecialists. Despite this, medical students still desire BST, and anecdotal reports have described declining amounts of this particular teaching modality and, in some centers, a total lack thereof. However, the opinions and perceptions of current medical students and teaching staff regarding this teaching modality remain largely unpublished in Libya.

Medical education is considered one of the highest types of education which requires a high level of knowledge and skills to deliver very accurate and precise medical information to medical students consisting of two main stages, namely, the basic medical sciences and bedside or clinical teaching [7,8]. Proper BST allows the physician and patient to interact at the bedside; through this physician-patient interaction process, medical students are simultaneously afforded the opportunity to learn clinical skills, clinical reasoning, physician-patient communication, empathy, and professionalism. In actual practice, comprehensive history taking can help the physician diagnose up to 56% of patient problems, which may arise to 73% if a physical examination is added. Gathered information and a proper diagnosis can be reached by obtaining a good medical history and performing an efficient clinical examination. Clinical teaching which involves the patient is enriched by these visual, auditory, and tactile experiences.

BST was widely used across medical schools in the first half of the previous century and was estimated to represent as much as 75% of all clinical training in the 1960s[9]. Supporting the notion that despite already declining hours spent on BST, this style of clinical practice and education has declined since 1978, as highlighted by Ahmed, who reported the proportion of teaching time taken up by BST had declined from 75% 30 years ago to only 16% today. In our study, students are found to be motivated to engage in clinical reasoning and problem solving if their preceptor acting as a role model, provides adequate demonstration and guidance. This is noted clearly in the response and perception of the student's questionnaire and also was mentioned in their comments. Several other skills essential with patient contact can be for a great part be learned at the bedside. Most importantly, communicating effectively with real patients, but also medical ethics (for example discretion regarding sensitive subjects) and adequately obtaining a structured history without the use of extensive medical terminology [10,11]. The majority of the students have no comment regarding the cooperation of teaching staff.

**Students**

The student insight was that teaching staff did not always listen to questions they would have liked to ask, even though most of the students were treated with equal respect. The majority of the students agreed that the duration for the course of BST in the different departments was not enough. This is because the duration of BST which is scheduled by different clinical departments was short. Other reasons include an absence of teaching staff, a lack of patients, and limited teaching hospitals. On the other hand, the hours during one BST session were not enough. In another study, the practical hindrances for a limited duration of BST vary from time constraints, patients not being in bed and noise on the ward [6]. The language of teaching staff, on the other hand, was clear and appropriate and the students were able to understand. However, they were not restricted to the hours of teaching during the session of BST and this affects it by reducing the overall duration of clinical teaching. Students prefer that the selection of the cases to be by the teaching staff; however, there were no clear explanations for this. Obviously, the number of teaching in medical faculty was not enough. This is reflected by the huge number of students in one group attending the same BST session; on the other hand, the number and variety of cases in the hospitals were not enough for all groups. The teaching staff has different styles and different schools in teaching medical student's history-taking and medical skills. Most of the students are not satisfied with the method of the final clinical examination.

In 1983, Coopers showed that physical examination skills and history taking (with regard to gastrointestinal pathology) practiced with real patients in addition to healthy subjects in teaching sessions resulted insignificantly better scores on an OSCE (objective structured clinical examination) for fourth-year medical students [12]. There was a trend for better scores related to group size (smaller groups received a better OSCE score). Students consider BST the most effective way of learning clinical skills and in their opinion, it is a major reason not only for passing the final clinical examination but also for creating a professional physician.

1. **Teaching Staff**

In reviewing the teaching staff questionnaire, most of the students were cooperative with them. Teaching staff prefer selection of the cases for teaching by themselves because they are more knowledgeable in that particular case and they can give and add more information to the students and to cover most topics with a variety of cases seen by the students. Concerning the selection for BST by teachers, a qualitative study showed that the students mainly are to select patients according to defined learning objectives in order to ensure an optimal learning context [13]. There was a controversy between teaching staff regarding the duration for the course of BST, but most of them were satisfied with the hours of one BST session. Most of the students were cooperative, attending the BST session in time, this is because the time table was reachable for everybody. The perception regarding the basic medical knowledge of the students seems appropriate. The head of the clinical departments was very cooperative with their teaching staff, although their number is not enough and this leads to the time constraint for the teaching staff and the number of medical students in each group makes it worse. Besides, the number of teaching hospitals is very limited.

The traditional teaching hospitals have become more specialized, and less suitable and welcoming for general medical
Most of the teaching staff agreed that they should gain permission before starting BST. One of the most important obstacles facing medical students is that teaching staff have different methods, different schools and different references during BST [16]. This difficulty is present in our university and it is not seen or noted in the literature. On the other hand, the method of the final exam should be reconsidered. Teaching staff considers the BST as the most effective way of learning clinical skills. Due to increasing in other activities of teachers, the number of bedside rounds is decreasing, therefore time usually given to the patient has become much shorter than before [17].

Patients

Most patients enjoyed BST and they were very cooperative with students, they thought that BST increase their awareness about their disease and they prefer discussing their disease in their presence. In their opinion, students should gain permission before starting BST because some of them may feel unwell or will not be available at that moment for example: patient may be having their investigations done or preparing themselves for surgery or may be there are already discharged from hospital. Some patients are naturally anxious when they come to hospitals; this fear is more exaggerated when they are seen by a large group of students [18,19]. Patients noted that the number of medical students in one group is too large and this increases their embracement even though students respect them and communicate with them in an appropriate way and in an appropriate time, and history taking by medical students was acceptable but most of them are not accepting physical examination.

Hospitals

In Benghazi there are 13 main hospitals and health care facilities which are affiliated to the University of Benghazi in 2007 with total active beds (Benghazi medical center with 1200 beds, but only 360 beds active was still not opened in 2007, Al-Jalla hospital 480 bed, Paediatrics hospital 400 bed, AlKuwayfiyiah hospital 200 bed, Hawari general hospital 500 bed was still not opened in 2007, Hawari Nephrology center 40 bed, Hawari Urology and ENT center 120 bed.

Hawari Cardiology center 40 bed, Hawari Radiology center no beds only OPD, Al-Jomhouriah hospital 650 bed, Ophthalmology hospital 110 bed, 7th October hospital 160 bed and Psychiatric hospital 300 bed). However, in 2017 and because of the war in Benghazi there were only 4 hospitals working with total 1440 active beds (Benghazi medical center 360, Al-Jalla hospital 480, Paediatrics hospital 400 and AlKuwayfiyiah hospital 200) and the other 9 main hospitals were closed because their location are in a war zone and some of them are destroyed because of bombing. Therefore, there is a significant reduction in the total number of beds in Benghazi in 2017, which is resulting in a huge decrease in the number of patients.

Conclusion

Up to our knowledge, this is the first study of its kind conducted and published in the literature concerning medical education in Libya. Time constraints and excessive classes highlight the unique benefits of BST which result in its high demand by students, regardless of the discipline being taught because medicine is all about patient. We can’t imagine how medicine can be taught away from the patients. BST is the only site where history taking, physical examination, compassion, and a caring manner can be taught and learned by example. As Flexner said. The facts are locked up in the patient. To the patient therefore, the medical student must go’.

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Approval by the Ethics Committee

This research was approved by the Vice President of the faculty of Medicine and the Ethics Committee of the University of Benghazi.

References


