



Assessment of the level of satisfaction of final year's medical students with the clinical training at taif teaching hospitals, KSA

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ABSTRACT

Background: Quality is a major concern of health care agencies all over the world. Medical students in phase III spend many weeks in different clinical departments for acquiring clinical skills and competencies. Among places of clinical training and education are outpatient clinics, internal departments (bedside training), and emergency rooms. The purpose of the study was to evaluate medical students' satisfaction with clinical education during medical internship and the effects of variables in the organizational domain on satisfaction. **Methods:** A cross-sectional descriptive analytic study was conducted. Fifth and sixth year medical students at the Taif College of Medicine were asked to fill a questionnaire to clarify whether they are satisfied with the clinical training at the teaching hospitals in Taif. The level of satisfaction and the association between it and different items of clinical training were identified. Ethical issues were considered. The overall internal consistency (alpha) of various component scales in the curriculum was 0.88 with a range of alpha 0.82-0.91 in various domains. Appropriate statistical tools were used. **Results:** A total of 257 final years, students responded to the survey. They were 160 males (62.3%), and 97 females (37.7%). Overall satisfaction regarding clinical training was 53.4%. The association between respondents' gender and the characteristics of some of the four disciplines of satisfaction revealed significant differences between male and female students. However, the difference in overall satisfaction among male and female students did not reach to the significant level. **Conclusions:** Around half of final years students in Taif College of Medicine was satisfied with clinical education at Taif hospitals. **Recommendations:** Continuous evaluation of student satisfaction is to be essential part of the clinical training service offered by our College at the teaching hospitals to ensure continuous students' satisfaction and to overcome the barriers against proper clinical training. More concern is to be directed to establishing an up-to-date, well-furnished and well equipped skill lab at the college for training of the students. Of course, pushing forward for finalizing the university hospital will help overcoming all the barriers against adequate satisfaction of our students with their clinical training.

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BACKGROUND

As quoted from Osler 'To study the phenomena of disease without books is to sail an uncharted sea whilst to study books without patients is not to go to sea at all', and: 'Medicine is learned by the bedside and not in the classroom' are quotes of the famous Sir William clinical training is paramount importance [1]. William Osler (1849-1919) was, in the century after Herman Boerhaave, among the greatest promoters of bedside teaching as a mode of medical education and his words are still valid more than a century later [1, 2]. Traditionally, bedside teaching has always been seen as a primary teaching modality in which most aspects of clinical practice can be demonstrated and trained. It 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 [3]. The recent explosion of imaging and laboratory testing has decreased its use [4]. Today's estimates range from 8-19% if at all present in medical training [3, 5].

Bedside teaching has been described as one of the ideal clinical teaching modalities, in which history taking and

physical examination skills, together with professional attitude, can be combined to provide a holistic approach in the diagnostic process and in patient care. Students and residents 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 [3, 6, 7, 8]. Furthermore, a thorough and detailed history and physical examination have been shown to provide the correct diagnosis in 73% of cases, on average. In certain circumstances, this percentage can be over 90% [9]. Feedback on satisfaction regarding clinical training of students is crucial for continuous improvement of the training activities and training programs offered to final years medical students [7]. Dissatisfaction may result in students changing their sites of learning and even their interest in training, which might have bad effects on the education in general. This of course will badly affect the level of the future of clinicians [8].

The College of Medicine, Taif University offers high quality clinical training at the Ministry of Health (MOH) and Military Hospitals in the Taif area. As teaching institutions, hospitals usually struggle to find a balance between meeting the

needs and convenience of patients and students. Students' satisfaction with the clinical training at MOH and Military hospitals they receive is crucial because it will influence their pattern and levels for clinical skills attainment. It has been shown that students who were more satisfied with clinical training had better performance and higher grade point averages (GPAs) [8]. Therefore, information on students' feedback about satisfaction is necessary to properly evaluate the adequacy of training being provided [7]. As a part of the undergraduate medical education, final-year medical students have to undergo a placement-based training in different departments for some weeks in different hospitals across the region. Although job satisfaction has been amply studied, literature on satisfaction with clinical education is quite limited. The number of medical students placed at each hospital at one time, depends on the size of the hospital, teaching facilities available within the hospital, number of training staff and the MOH and military regulations applicable for that region.

Learning environment may have a profound effect on the students' performance and behavior and outcomes of the clinical education. Learning occurs in a number of places other than the classrooms: hospitals, personal interaction with teachers and trainers at the hospitals, libraries, other students and staff on campus outside, via the internet etc. The learning environment must be projected in both a physical space and a cognitive space. The physical space of the training places is managed as the teacher prepares the classroom for the students. So, the following questions have to be raised: Is the environment warm and alluring? Does the training place arrangement match the trainer's philosophy and plan of training? Do the students have access to necessary facilities such as libraries and information technology? Are the disturbing features of a department eliminated? Attending to these and similar questions aids the authority managing the learning environment and training facilities to students.

Since the students' satisfaction has been associated with their later professional attitudes, career commitment and retention, professional education faculties should be concerned with students' satisfaction as an outcome of the educational process. A low satisfaction rate in training may in the future, result in less number of trainees being interested in these departments as students' satisfaction has long been associated with their future career commitment. Teaching faculties should be concerned with students' low satisfaction rate as an outcome of the educational process [9].

RATIONALE AND AIM OF THE STUDY

It is well established that certain factors present in the environment can affect how well learning takes place. This checklist is intended to offer assistance in identifying those aspects of the learning and clinical training environments that are working well, and those that may need attention. It

may be used in various ways. This checklist is a support for trainers concerned with notes and assessing the quality of the environments in which student learning is taking place. It covers a range of factors that may be influencing the students' behavior, including whole college policies, physical environment, hospital organization and individual training and learning approaches and strategies. The process of completing the checklist may give authorities an indication of areas where solutions to behavioral issues may be found. Within this, observations by colleagues may also be found to be particularly useful. So far, literature on students' satisfaction with clinical training in clinical departments is somewhat limited.

The aim of our study was to design and use a validated questionnaire to evaluate satisfaction of final years male and female medical students with hospital-based education and influence of different domain variables on this satisfaction.

RESEARCH DESIGN

A cross sectional analytical observational study was conducted at the College of Medicine at Taif University. A random sampling technique was employed. A self administered (English) questionnaire was used. It contained 34 variables under 4 Domains or disciplines.

MATERIALS AND METHODS

All final-years (5th and 6th years) medical students were given a questionnaire to assess their satisfaction with clinical education and training in different clinical departments during their placement in hospitals across the region. Each question in the questionnaire is generating a closed response. The students fulfilling the following set out criteria were enrolled in the study: 1. Informed consent from the university students for participating in the study. 2. Fifth and six year students of any age and gender. 3. Supervised questionnaire administration by the co-investigators 4. Completely filled sheet regarding demographic information. First, the study objectives were explained to the students. Informed consent was taken and full confidentiality was assured to the participants. They were made to fill out a pretested questionnaire which included 34 items in line with the study objective to assess students' opinions and expectations concerning the clinical training at the hospitals. The questions on the our questionnaire were carefully derived from other similar questionnaires at the international level like the graduate exit questionnaire in line with the study objective after necessary modification to measure the criteria affecting students' satisfaction [9-10]. In addition to the socio-demographic characteristics (age, study year, and gender), the questionnaire consisted of 4 sections: The following domain variables were assessed: Quality of administration and efficacy of Training Members (9 items), approachability to patients (availability of resources for adequate training) (8 items), assistance to students and learning environments (9 items) and satisfaction with the

schedule of training at the hospitals (8 items).

The questionnaire was written in the English with a 5-point Likert response scale ranging from one (strongly disagree) to five (strongly agree). The 5-point scale was later transformed during data analysis to a 3-point response scale ranging from A (disagree) to C (agree), with B corresponding to “neutral or uncertain”. Participating students were advised to read each item carefully before responding. Help was given to students from the research team on demands. The questionnaire was validated and pretested prior to data collection. It was administered in a private setting with guidance. The validity of the questionnaire was determined through checking content validity. The overall internal consistency (alpha) of various component scales in the curriculum was 0.88 with a range of alpha 0.82-0.91 in various domains. The mean percentages of satisfaction were calculated to estimate the overall ranking analysis of individual satisfaction disciplines. Percentages of agreement on all items of each of the 4 main disciplines of satisfaction were calculated and presented. Percentages of overall satisfaction on the 4 main domains and disciplines were calculated and presented, overall satisfaction of male and female students with the four studied domains is presented.

Ethical clearance

The Research Ethics Committees of the College of Medicine Al Taif University, as well as all concerned hospitals approved this study and permissions of the directors of the concerned hospitals were taken. The staff and hospital names were kept anonymous. The names of students chosen to answer the questionnaire were also kept anonymous. All data were kept confidential.

Statistical Analysis

Data were collected and introduced into excel program. Data were statistically analyzed using SPSS package release 18 (SPSS Inc., Chicago, IL) used in Windows 8. Data were

presented as tables and figures. Percentages, means, and standard deviations were calculated for qualitative and quantitative data. Chi-square test (X2) and Fisher’s exact test were performed to statistically analyze qualitative data. Other tests were computed whenever indicated. Non-parametric tests were used when appropriate. A 2-tailed P value < 0.05 was considered to denote statistical significance.

RESULTS

Table 1 shows the baseline characteristics of the participants. A total of 334 final years medical students were asked to participate in the study. Only 79.3% out of 334 (257) students consented to be included in the study based on the inclusion criteria.. The male to female ratio in our study was 1.6:1 reflecting the gender composition at the participating colleges. Participants aged around 24 years between 22 and 25 years. One hundred and sixty students (62.3%) were males whilst the remaining 97 students (37.7 %) were females with no significant statistical difference between both groups. As regards the students’ level, 158 students were 5th year (61.5 %), and 99 students (38.5 %) were 6th year students.

Satisfaction with the domain of quality of administrative regulations and efficacy of clinical trainers.

As shown in table 2, it was noticed that overall satisfaction with the domain of quality of administrative regulations and efficacy of clinical trainers was less than satisfactory. Only 52.2% of the interviewed students were satisfied with this domain, and the remaining 47.9 % of these students were unsatisfied. Within this domain, the majority of the participating students (69%) were satisfied with the experience of the training doctors. The lowest rates of satisfaction were noticed in the items of a number of training doctors in relation to the number of students and the levels of feedbacks from the trainers (937.3%). As table 7 illustrates, 48.4% of males and 55.8 % of female students were satisfied (p<0.05)..

Table 1. Characteristics of studied students

Character			
	Male students	Female students	Total
Total Number of 5 th and 6 th year students	No (%) 210 (63)	No (%) 124 (37)	No (%) 334 (100)
Responded students			
	Male students	Female students	Total
Gender	No (%) 160 (62.3)	No (%) 97 (37.7)	No (%) 257 (100)
Study year	5 th year No (%) 158 (61.5)	6 th year No (%) 99 (38.5)	Total No (%) 257 (100)

Table 2. Quality of Administrative regulations and efficacy of clinical trainers.

	Item	Satisfied (%)	Dissatisfied (%)
1	Satisfaction with administrative regulations in hospitals during training.	54.8	45.20
2	Satisfied with the trainers awareness of medical students' learning needs and objectives	51.8	48.20
3	Satisfied with number of hospital doctors in relation to number of students	35.6	64.50
4	Satisfied with number of faculty staff members in relation to number of students	39.00	61.00
5	Satisfied with level of feedback by trainers on students' progress'	47.20	52.50
6	Satisfied with experiences of hospital doctors	60.00	40.00
7	Satisfied with experiences of faculty staff's trainers	68.70	31.30
8	Satisfied with active contribution of hospital trainers.	56.40	43.60
9	Satisfied with active contribution of hospital staff members in the training.	55.2	44.80
	Total	52.10	47.90

Satisfaction with availability of and approachability to resources for adequate training

As shown in table 3, about half 54% of the students in this study were satisfied with the approachability to patients and the availability of resources essential for adequate training. The remaining 46.00 % of these students were unsatisfied. Within this domain, the highest rate (74.5%) of satisfaction was for approachability to patients with common diseases and the lowest satisfaction rate (36.4%) was for the item of approachability to patients with rare diseases, diagnosis of which requires specialty. In this domain, as shown in table 7, satisfaction rates were 51.2% and 56.8% for male and female students respectively ($p < 0.05$).

Assistance to students and adequacy of learning environments.

The discipline of assistance given to students and learning environments at the hospital satisfied only 51.14% of final years students. (Table 4). So, ~ 49% were dissatisfied. The lowest rates of satisfaction within this domain were (30.24) in the item of access to "information technology" facilities at the concerned hospitals (computers, internet, data base, etc), adequacy of size of the outpatient clinics for training

(28.5) and subgroup size (the number of students in each clinic), (35.4%). The highest rate of satisfaction (60%) was in the item of availability of training at the outpatient clinics. Regarding this domain, 50.4 % and 52% of male and female students respectively, were satisfied (table 7). However, the difference in rates of satisfaction among both groups was not statistically significant.

Satisfaction with the program and schedule of training in the hospitals.

The level of satisfaction with the schedule and program of training at the hospitals is illustrated in table 5. Fifty six percent of the respondents were satisfied with this domain, while 44% % were unsatisfied. The highest rate of satisfaction within this domain was with the item of the time allocated for hospital training scheduled for hospital training (62.5%), while the methods of "practical evaluation" at the end of the course had the lowest rate (41.2%) of satisfaction of the studied students. As shown in table (7), male students were more satisfied with this domain (60.6%) than female students (51.1). The difference in satisfaction rates in both groups was statistically significant. ($p < 0.05$)

Table 3. Availability of and Approachability to Resources for Adequate Training

	Item	Satisfied (%)	Dissatisfied (%)
1	The approachability to hospital trainers	56.1	43.90
2	The approachability to college trainers	63.00	37.00
3	Satisfaction with access to patients for completion of case histories	62.50	37.40
4	The access to patients for completion of general and systemic examination	51.9	48.10
5	Availability of suitable patients for training according to our learning objectives in the curriculum	51.00	49.10
6	Approachability to patients with common diseases	74.50	25.50
7	Approachability to patients with rare diseases, diagnosis of which requires specialty	36.40	63.60
8	Approachability to all places of services provided to the patients at the hospitals (imaging departments, ER, CCU, ICU, operation theaters, Labs. etc.)	38.50	61.60
	Total	54.00	46.00

Table 4. Assistance to Students and Adequacy of Learning Environment.

	Item	Satisfied (%)	Dissatisfied (%)
1	Availability of recommended reading materials and books in hospital/college library	49.7	50.30
2	Access to information technology facilities at the hospitals. eg. (computers, internet, data base)	30.24	69.76
3	Availability of training at the outpatient clinics	60.00	40.00
4	Adequacy of the size of the clinics for training	28.50	71.50
5	Subgroup size (the number of students in each clinic)	35.40	64.60
6	The methods of "practical evaluation" at the end of the course	48.8	51.20
7	Availability of adequate places for adequate discussion with training staff	54.9	45.10
8	Availability of suitable patients for adequate bedside training.	55.2	44.80
9	Subgroup size (the number of students clerking on one patient at department)	46	54.00
	Total	51.14	48.86

Table 5. Satisfaction with the program and schedule of training in the hospitals

	Item	Satisfied (%)	Dissatisfied (%)
1	The clinical teaching provided in the department	54.9	45.10
2	The clinical part of the module as a whole.	59.9	40.10
3	Schedule of training at the outpatient clinics (OPCs)	56.7	43.30
4	Schedule of training at bedside setting	55.5	44.50
5	The number of weeks scheduled for hospital training	61.3	38.70
6	The number of days per week scheduled for hospital training	63.8	36.20
7	The average number of patients available for each student for clerking every day	55.7	44.20
8	The methods of practical evaluation at the end of the course	41.2	58.80
	Total	56.20	43.80

Overall satisfaction with all domains

The overall satisfaction with all four disciplines was shown in table 6. The mean percentage of overall satisfaction for these disciplines was 53.4%, denoting a low to moderate level of satisfaction. It was 52.2% % and 54.1 % for males and females respectively. Around 47 % of students were overall unsatisfied with all disciplines and domains of hospital training. The highest rate (56.2%) of satisfaction of the students was with the domain of schedule of hospital training, while the lowest rate (51%) of satisfaction of these students was with the domain of assistance and adequacy of learning environment. As demonstrated in table 7, the association between respondents' gender and characteristics of the 4 disciplines of satisfaction revealed no significant differences between male and female students in this respect.

DISCUSSION

Bedside teaching has been an integral part of medical education, however, over the past century; the classic bedside model has suffered from several challenges. Increasing medical school class sizes and needs of educators to provide enormous quantities of information within a limited time period have led educational efforts away from the bedside and into the lecture hall. This drift has been inverted somewhat over the past 20 or 30 years because of

the great concerns about the increasing depersonalization of medicine [11, 12]. With a renewed emphasis on small group clinical interactions, a core element in current education of aspiring physicians includes real-time feedback on their skills regarding history taking and physical examination at the hospital settings [13-15]. The main aim of this study was to evaluate medical students' satisfaction with clinical education and influence of different domain variables on this satisfaction. Trainees' satisfaction is an index for evaluating medical education, however, there are few researches measuring this factor [16-18], and generally, we can say that the literature is somewhat limited and poor in this respect.

The response rate in our study is relatively high similar to that of studies conducted by many researchers [8, 9, 19]. Female students were also represented in this study, so this study was conducted on both male and female sections of the College of Medicine, Taif University. The male to female ratio in our study was 1.6:1. The present study failed to find a significant relationship between gender and satisfaction which is in line with other studies [7, 21, 22]. It was shown in the present study that about half (53.4%) of the final years students were overall dissatisfied with training in the teaching hospitals. Overall satisfaction was more or less for both males (52.2%) and females (54.1%). This finding is in line with other studies [9, 23-25].

Table 6. Overall satisfaction with the four main disciplines.

Domain		Satisfied (%)	Dissatisfied (%)
1	Administrative regulations and quality of clinical trainers.	52.10	47.90
2	Availability of and approachability to resources For adequate training).	54.00	46.00
3	Assistance to students and learning environments	51.14	48.86
4	Satisfaction with the schedule of training in the hospitals	56.2	43.80
Overall Satisfaction		53.36	46.64

Table 7. Overall satisfaction of male and female students regarding the four disciplines.

Domain		Male (%)	Female (%)	Overall satisfied (%)	P value
1	Administrative regulations and quality of clinical trainers.	48.4	55.8	52.10	< 0.05
2	Availability of and approachability to resources for adequate training).	51.2	56.8	54.00	> 0.05
3	Assistance to students and learning environments	50.40	51.88	51.14	> 0.05
4	Satisfaction with the schedule of training	60.6	51.8	56.2	< 0.05
Overall satisfaction		52.2	54.15	53.4	> 0.05

In the present study, the least satisfaction was from the domain of assistance to students and learning environments (51.1%). This finding is very similar to that of others [9, 24]. This finding can be explained by the fact that the training environment in the sites of clinical training is not prepared for this purpose, as these hospitals are mainly prepared for provision of care to patients. Training in these institutions may come as second task. Medical schools are under the pressure to adapt to changes in the health care system as well as maintaining excellence in education [24]. This could have led to the low or moderate overall satisfaction with clinical education found in our study, though this assumption calls for more investigation. Also, this finding may be attributed to the high levels of expectations, our students may have.

Around 52 % of the study sample reported that they were satisfied with the administrative regulations in the hospitals during training time. This left around 48% of the respondents with dissatisfied feeling regarding this domain. This rate of satisfaction can also be explained by the fact that the students are trained in the MOH and Military hospitals, where the main concern of the administrators in these hospitals is directed to patient care. In this study, only 63% of our students were satisfied with the experience of the trainers. This comes in agreement with that of others [9] who reported that the rate of satisfaction among their studied students was 33%. In the present study, female students were more satisfied (55.8%) than male students (48.4%). The difference was statistically significant.

The Domain of availability and approachability to resources for adequate training satisfied 54%% of all studied students. Female students were more satisfied (56.8%) than male students (51.2). However, the difference did not reach the

statistically significant level. The approachability to college trainers satisfied 63% of students. This finding is compatible with that of others who presented different scoring rates ranged from 10% to 60% in different hospitals studied [21]. Our study showed that the approach to common and epidemic diseases and rare diseases diagnosis of which requires specialty in outpatient and bedside teaching were significant predictors of satisfaction in medical students, this finding is similar to that of other researches [23, 24]. In their studies, the number of new inpatients and outpatients was not related to students' overall satisfaction.

Our study showed that the least satisfaction rate was from the domain of assistance to students and learning environments (51.4%), that comes in line with that of other authors [9, 24]. This can be attributed to the fact that the training environment in the sites of clinical training is not prepared for this purpose, as these hospitals are prepared for provision of care to patients [24] not for students training. The lowest rate of satisfaction within this domain was the item "access to information technology (IT) facilities" at the hospitals such as computers, internet, and database, and the item of subgroup size. This comes in line with that of other researchers [23, 24] who found that the access to IT facilities was available to medical students in the studied hospitals, but the accessibility score ranged from 25% in some hospitals to 60% in others. In the present work, both female and male students were nearly equally satisfied with the domain of assistance and adequacy of learning environments. In the present work, the domain of the program and the schedule of training satisfied about 56.2% of our students with slight higher rates of satisfaction in male than female students. This finding comes in line with that of others [24, 25]. In our study, duration of bedside training have a considerable

association with student's satisfaction. This comes in contrast with that of other researches [21] who reported that it seems that students' participation and practice is more important than time of teaching.

A variety of policies and approaches are proposed to offer some counterbalance to the increasing decline in bedside teaching [26]. reforming the attitude of faculty members regarding bedside teaching is proposed by some authors [27]. Educational interventions are proposed to change the amount of time spent on bedside teaching [28]. Some authors found that a shift of some training tasks to residents or interns to decrease the workload for clinical staff, has been successful [29, 30]. It is also recommended by some authors that clinical teaching at bedside setting should be structured well before, during and after the encounter, thus reducing the risk of possible uneasiness from the side of students, trainers as well as the patient [31, 32].

There are several limitations to this study that may deserve mention. First, the questionnaire for assessing students' satisfaction was not tested for reliability. The satisfactory response was divided into two parts (satisfied and dissatisfied). Second, our findings may not be applicable to other settings simply because it was conducted at hospitals that are not committed primarily to teach, therefore limits generalization for other medical colleges where the situation may be different. Lastly, our results, which were derived from a large academic medical center and an affiliated multiple community hospitals, may not be fully generalizable to other hospital systems. So, collecting data from more and diverse settings may further increase the generalizability of such results. The strengths of our study include the large number of questions used questionnaire that covered most of issues related to the activities at the teaching hospitals, the pilot study at the start of the research in addition to the high response rate.

CONCLUSION

Studies based on the opinions and satisfaction levels of students may have a considerable role in monitoring, identifying positive and problematic areas and implementing necessary revisions of an educational program. This study fulfills the objective set by the study protocol for this project of assessing the satisfaction and concerns among final year medical students in regards to clinical training carried out at Taif hospitals. The results indicated that only around half of male and female students were satisfied with the clinical training at the Ministry of health and Military hospitals at Taif. This study will act as a guide for authority and staff members on both male and female sectors to ensure students' satisfaction as an indicator for the quality of training, being part of the total quality management policy of the college and the university.

RECOMMENDATIONS

Continuous evaluation of student satisfaction is to be essential part of the clinical training service offered by our College of Medicine at the teaching hospitals to ensure continuous students' satisfaction and to overcome the barriers against proper treatment. More concern is to be directed to establishing an up-to-date, well-furnished and well equipped skill lab at the college for training of the students. Of course, pushing forward for completing the university hospital will help overcoming all the barriers against adequate satisfaction of our students with their clinical training.

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COMPETING INTERESTS

The authors declare that they have no competing interests.

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