Journal of Contemporary Medical Education
www.scopemed.org
DOI: 10.5455/jcme.20160614032416

Original Research

Final year medical students' satisfaction with clinical education and family medicine module. Suez Canal University. Egypt

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ABSTRACT

Background: Satisfaction is an indirect performance measure to the effectiveness of a curriculum. Faculties which provide professional education should be concerned with students' satisfaction as an educational process outcomes. Objective 1- to evaluate medical students' satisfaction with clinical education and factors in the organizational domain that could influence their satisfaction. Objective 2- to evaluate the students' satisfaction with family medicine module. **Methods:** This was a cross sectional descriptive analytic study carried out between September and October, 2015. Convenience sampling was used and It included all 136 final year medical students in Suez Canal University. The first questionnaire was used to evaluate the medical students' satisfaction with clinical education. Student Perception of Module (SPOM) questionnaire with 18 items was used to evaluate the student's perception of family medicine (FM) module. **Results:** The study included 136 students and the mean age was 23 (0.45) years. Overall satisfaction with clinical education was 86.8%. The majority of study sample (85.3%) was satisfied with outpatient training. Most of the study sample was satisfied with bedside and theoretical training (76.5% & 77.9 %) respectively. Students' satisfaction with family medicine modules revealed that across 80% of the 18 items, strong satisfaction ranged from 61.8% to 42.6%. **Conclusion:** Most of the students perceived clinical education and family medicine module positively. Future reevaluation of clinical education in Suez Canal University is recommended with consideration of the variety of diseases and improving instructor experience in bedside teaching. Reviewing FM module is recommended with special concern to make the students look the profession in positive way and to be intellectually more stimulating.

KEY WORDS: Clinical education; Satisfaction; Students

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Received: March 12, 2016
Accepted: May 16, 2016
Published: June 20, 2016

INTRODUCTION

Students' satisfaction is an educational process outcome and is an indicator of quality of medical education.It is associated with future professional attitudes, career commitment and retention [1]. Satisfied person is likely to be willing to exert more efforts than unsatisfied [2,3]. Quality is one of the key elements of the Millennium Development Goals, the definition of quality in higher education is multi-dimensional including teaching, staff-students relationships, services, facilities and research [4].

The effectiveness of a curriculum can be evaluated using direct performance measures (e.g., comprehensive evaluations, presentations and projects) and by indirect performance measures (e.g., students' satisfaction with the curriculum) [5,6]. The opinion and satisfaction of students is very important in assessment of teaching at the faculties and may have a considerable role in monitoring, identifying positive and deficient areas and in implementing necessary revisions of an educational program [7,8]. Also, students' satisfaction surveys could identify concerns about course shortfalls, provides room for improvements that contribute to improving the quality of teaching and learning [9].

Clinical training plays a role in enhancing medical education. Outpatient clinic could cover a wide range of general and specialty medical practices. Bedside teaching has been shown to improve certain clinical diagnostic skills among medical students and residents. Both outpatient clinic training and bedside teaching offer an efficient and holistic view of patient care several fundamental skills can be acquired by students (etiology, history, physical examination, laboratory tests, and therapy) and in addition to those found in ambulatory care (continuity, context, health education, economics, and responsibility). Unfortunately, bedside teaching has been on the decline [10-12].

Elements of job satisfaction can be categorized into three domains: personal, interpersonal, and organizational. Personal domain is considered as an individual's character and it is defined as specific characteristics that are related to the students (e.g. life satisfaction, self-esteem). Relationship between the student and the clinical instructor is categorized into interpersonal domain. The characteristics of clinical education that might influence satisfaction are categorized as an organizational domain, which are included number of teachers, patients, educational methods, and the practical skills that the students learn [13]. Previous research studied factors related to the organizational domain in relation to students' satisfaction [14].

Faculty of Medicine in Suez Canal University (FOM/SCU) conducts innovative educational strategies including: community-oriented and community based education (CBE), problem-based learning (PBL), student- centered education, evidence-based medicine (EBM), integration

between basic, social, behavioral and clinical sciences. In FOM/SCU, theoretical teaching (in the form of lectures and seminars) is part in the process of PBL, the students throughout the six years are confronted weekly with an educational priority health problem that may address medical condition, cultural, political, fundamental economic or financial topics [15].

Community based education and PBL go side by side in FOM/SCU where the students acquire the requested knowledge, attitude and skills [15]. Medical students are trained in primary care clinics in the first phase (first year) and second phase (second and third year) through weekly visits to urban and rural primary care units. In the third phase (from the fourth to sixth year) the students receive 14 weeks of field training, in primary care clinics with additional managerial and quality learning objectives [16]. In another words Family medicine module training is conducted in PHC throughout the first four years of education. Also the students during their 4th and 6th year of medical education receive hospital based training that includes bedside teaching and outpatient clinic education in clinical rotations of 8 weeks in internal medicine, gynecology and obstetrics, pediatrics and general surgery specialties. Students in year 5 receive rotations of 5 weeks of each of tropical medicine, orthopedics, ophthalmology and otolaryngology, psychiatry and dermatology.

Trainees' satisfaction is an indicator for evaluating medical education, but few researches measured this factor [17]. Identification of the environmental factors that could affect the level of students' satisfaction could be areas for improvement. It is the first time that satisfaction of the student with family medicine module is studied with the aim of improvement of learning and teaching of family medicine module. Objective 1- to evaluate students' satisfaction with overall clinical education, and factors in the organizational domain that could influence their satisfaction. Objective 2- to evaluate students' satisfaction with family medicine module.

METHODS

Design: This was a cross sectional descriptive analytic study, which was conducted between September and October, 2015. **Participants:** Convenience sampling was used which included 136 out of total 138 final year medical students, giving a response rate of 98.5%. **Setting:** The medical students were recruited to participate in primary care centres toward the end of their final educational year, 2014-2015.

Data sources: Two self - administered structured questionnaires on student satisfaction.

Questionnaire I: It was used to evaluate the medical students' satisfaction with clinical education, previously used by Ziaee et al. [14]. Clinical education was evaluated for its three subcategories including: outpatient training, bedside and theoretical teaching. The questionnaire included 6 questions: 3 questions about overall satisfaction with quality of medical education, practical and theoretical evaluation; 3 questions about organizational factors that could affect each of outpatient training, bedside and theoretical teaching. The students' satisfaction with overall clinical education and evaluation was classified into; completely, partial and none. Satisfaction scoring: one was given for completely and partial satisfaction while zero was given for none. Factors that lead to satisfaction with clinical education were assessed. Each student was asked to rank the important factors from one to seven for outpatient training and bedside teaching with one represent the most important and seven for the least important factor. Ranking factors related to theoretical teaching was from one as the most important factor to five as the least ranked factor. Each questionnaire had participant information including age, gender, marital status, perceived income as sufficient or insufficient and last academic grade. The questionnaire was previously validated [14]. Reliability of this questionnaire was evaluated through pilot study upon 20 medical students who were not included in the study. Internal consistency. Cronbach's alpha was 0.641 and Test-retest reliability was 0.93.

Questionnaire II: Student Perception of Module (SPOM) was used to evaluate the students' satisfaction with FM module. The questionnaire was designed to evaluate the quality of individual educational modules offered at higher education. It is 18 items questionnaire of students' satisfaction with their educational experience and previously used by El Ansari [18]. The 18 questions included multiple aspects of the students' learning and teaching experiences and covers the major areas of student attitude in relation to module administration, content, the perception of the module team, resources, assessment procedure and relevance.

The questionnaire included 10 items stated in a positive style (items 1-7, 15, 17, 18), and the remaining 8 items were in negative style. Items were scored on Likert 5-point scales (one for positive perception and five for negative perception'). Each student could provide a total score ranging from a minimum of 18 as very positive on all items to a maximum of 90as very negative on all the 18 items [19] but summary reduction was used; Low ratings (1 and 2 out of the five point scale) included very strong and strong satisfaction was taken as one and any other response was taken as zero to give rating ranged from zero to maximum 18. The questionnaire is validated and Cronbach Alpha reliability coefficient of the 18 questionnaire items was 0.7 indicating acceptable reliability [20].

Outcome variables: Satisfaction with overall clinical education (outpatient, bedside and theoretical teaching) and satisfaction of students with family medicine module.

Ethical considerations: Informed consent was obtained from the participants after explaining the objectives of the research. The questionnaires were anonymous but had code numbers. Confidentiality of data was maintained and

the students were free to accept or not to participate in the research.

Statistical methods

The collected data were analyzed using Statistical Package for Social Sciences –SPSS 20.0 (SPSS Ltd, Chicago, USA). Descriptive statistics: qualitative data were presented in frequencies and percentages and quantitative data were presented in mean (standard deviations) and median (interquartile range) for ordinal variables. Inferential statistics: For comparison of independent categorical variables: Chi square test was used and Fisher's exact was used when expected cells were less than 5. Mann Whitney test was used to test the relationship of student satisfaction with FM module and demographic characteristics. Tests were two tailed and P value was considered significant if <0.05.

RESULTS

The study included 136 students; the mean ages of the students was 23 (0.45) years,and most of them (92.6%) were aged between 22-23. About 2/3 of the study sample were females (63.2 %) and the majority of sample (97.1%) had sufficient income. Half of the sample reported very good of the last achievement grade. Overall satisfaction was (86.8 %). Most of the student reported satisfactory theoretical and practical evaluation (82.4% and 86.8%) respectively (Table 1).

Table 1. Characteristics of the study sample (n=136)

Variable	N=136	Percent
Age in years		
Mean (SD)	23 (0.45)	
Range	(22-25)	
Age categories		
22-23	126	92.6
24-25	10	7.4
Sex		
Female	86	63.2
Male	50	36.8
Marital status		
Single	132	97.1
Married	4	2.9
Income		
Sufficient	132	97.1
Insufficient	4	2.9
Last academic grade		
Good	38	27.9
Very good	72	52.9
Excellent	26	19.2
Overall satisfaction (with quality of clinical education)		
Satisfactory	118	86.8
Unsatisfactory	18	13.2
Satisfaction with theoretical evaluation		
Satisfactory	112	82.4
Unsatisfactory	24	17.6
Satisfaction with Practical evaluation		
Satisfactory	118	86.8
Unsatisfactory	18	13.2

Satisfaction with outpatient training

The majority of study sample {116/136 (85.3%)} was satisfied with outpatient training. The most important factors ranked by satisfied students were Appropriateness of duration of training, followed by other factors. There was significant relationship between satisfaction with outpatient training and each of appropriateness of educational atmosphere and class size (the number of students in each clinic) P values were 0.01 and 0.001 respectively (Table 2).

Satisfaction with bedside teaching

Most of the study sample was satisfied with bedside training 104/136 (76.5%), the most important factors ranked by satisfied students was course planning followed by the other 6 factors. There was significant relationship between satisfaction with each of Appropriateness of educational atmosphere (p value=0.038), Approach to common and epidemic diseases (p value=0.045) Good instructors' experiences (p value=0.011) and Approach to rare diseases diagnosis of which requires specialty (p value=0.023) (Table 3). There was statistically significant relationship between satisfaction with clinical education and gender ($\chi 2 = 5.84$, $df=1$, $p=0.016$).

Table 2. Relationship between educational factors and outpatient training

Ranked most important factor	Outpatient training				Fisher's exact p-value
	Satisfied (n=116)		Unsatisfied (n=20)		
	No.	%	No.	%	
Appropriateness of duration of training	26	22.4	4	20.0	0.069
Appropriateness of educational atmosphere	23	19.8	2	10.0	0.01*
Class size (the number of students in each clinic)	20	17.2	2	10.0	0.001*
Good instructors' experiences	18	15.5	4	20.0	0.058
Having a course planning	18	15.5	4	20.0	0.223
Approach to common and epidemic diseases	9	7.80	4	20.0	0.190
Approach to rare diseases diagnosis of which requires specialty	2	1.70	0	0	0.114

*P value is statistically significant if <0.05

Table 3. Relationship between educational factors and bedside teaching

Ranked most important factor	Bedside teaching				Fisher's exact p-value
	Satisfied (n=104)		Unsatisfied (n=32)		
	No.	%	No.	%	
Having a course planning	22	21.2	8	25.0	0.207
Class size (the number of students in each clinic)	20	19.2	6	18.8	0.329
Appropriateness of educational atmosphere	18	17.3	6	18.8	0.038*
Appropriateness of duration of training	14	13.5	6	18.8	0.385
Approach to common and epidemic diseases	14	13.5	4	12.5	0.045*
Good instructors' experiences	12	11.5	0	0	0.011*
Approach to rare diseases diagnosis of which requires specialty	4	3.8	2	6.2	0.023*

*P value is statistically significant if <0.05

Satisfaction with theoretical teaching

Most of the study sample was satisfied with theoretical training 106/136 (77.9%), the most important factors ranked by satisfied students was good instructors' experiences followed by the other 4 factors.There was significant relationship between satisfaction with approach to common and epidemic diseases (p value <0.001) (Table 4).

Overall satisfaction with clinical education and methods of evaluation

The majority of the student reported satisfactory theoretical and practical evaluation (82.4% and 86.8%) respectively. There was significant relationship between overall satisfaction with theoretical and practical evaluation (p value <0.001) (Table 5).

Student satisfaction with family medicine module

The percent of satisfied students across the 18 learning and teaching items, revealed that across 80% of the items, the percent of Students' satisfaction with their educational experience ranged from 61.8% to 42.6%. Participants were most satisfied with module ran smoothly, Module elements integrated into meaningful whole, assessment methods were appropriate, and module team provide opportunity to ask questions. However, they were least satisfied with module thought provoking, receiving helpful feedback, look at profession differently, and intellectually stimulating (Table 6). There was statistically significant relationship between satisfaction with family medicine module and gender mean ranks of female students was higher than mean ranks of male students (73.7 versus 59.5) (U =1700 Z= 2.04, p=0.042).

Table 4. Relationship between educational factors and theoretical teaching

Ranked most important factor	Theoretical teaching				Fisher's exact p-value
	Satisfied (n=106)		Unsatisfied (n=30)		
	No.	%	No.	%	
Good instructors' experiences	44	41.5	10	33.3	0.068
Class size (the number of students in each clinic)	22	20.8	6	20	0.534
Usage of educational equipment	20	18.9	4	13.3	0.268
Approach to rare diseases diagnosis of which requires specialty	10	13.5	6	12.5	0.319
Approach to common and epidemic diseases	10	9.4	4	13.3	<0.001*

*P value is statistically significant if <0.05

Table 5. Relationship between overall satisfaction with clinical education and satisfaction with methods of evaluation

	Overall satisfaction				$\chi 2$	p-value
	Satisfied(n=118)		Unsatisfied (n=18)			
	No.	%	No.	%		
Theoretical evaluation						
Satisfied	106	89.8	6	33.3	34.3	<0.001*
Unsatisfied	12	10.2	12	66.7		
Practical evaluation						
Satisfied	112	94.9	6	33.3	51.6	<0.001*
Unsatisfied	6	5.1	12	66.7		

*P value is statistically significant if <0.05

Table 6. Items of students' satisfaction with family medicine module

Questions	N= 136 (%)	Mean (SD)	Median (IQR)
Q1. Module ran smoothly	84 (61.8%)	2.37 (1.09)	2.00 (2.00-3.00)
Q14. Module elements integrated into meaningful whole	78 (57.4%)	2.54 (1.07)	2.00 (2.00-3.00)
Q6. Assessment methods were appropriate	74 (54.4%)	2.54 (0.949)	2.00 (2.00-3.00)
Q3. Module team provide opportunity to ask questions	74 (54.4%)	2.51 (1.11)	2.00 (2.00-3.00)
Q4. Module material was well presented	72 (52.9%)	2.51 (1.03)	2.00 (2.00-3.00)
Q7 Module team displayed good knowledge	68 (50.0%)	2.67 (1.21)	2.00 (2.00-4.00)
Q12. References needed for module available in library	68 (50.0%)	2.66 (1.24)	2.00 (2.00-3.00)
Q9. Module information available at beginning of module	66 (48.5%)	2.60 (1.18)	3.00 (2.00-3.00)
Q2. Module increased my interest in the subject	65 (47.8%)	2.61 (1.13)	3.00 (2.00-3.00)
Q16. Expect module to be of direct use in my career	64 (47.1%)	2.76 (1.21)	3.00 (2.00-4.00)
Q8. Module team correctly assumed level of skills I had	62 (45.6%)	2.76 (1.18)	3.00 (2.00-4.00)
Q11. Seminar group size small enough	62 (45.6%)	2.70 (1.19)	3.00 (2.00-3.00)
Q13. Work required for module was appropriate	60 (44.1%)	2.59 (1.44)	3.00 (2.00-3.00)
Q18. Teaching staff styles clear and stimulating	58 (42.6%)	2.72 (1.08)	3.00 (2.00-3.00)
Q5. Module was thought provoking	56 (41.2%)	2.76 (1.03)	3.00 (2.00-4.00)
Q10. Receive helpful feedback	56 (41.2%)	3.00 (1.17)	3.00 (2.00-4.00)
Q17. Module made me look at my profession differently	52 (38.2%)	2.89 (1.23)	3.00 (2.00-4.00)
Q15. Module was intellectually stimulating	52 (38.2%)	2.91 (1.21)	3.00 (2.00-4.00)

DISCUSSION

FOM/SCU final year medical students perceive positively overall clinical education. Studying factors that affect clinical education; the appropriateness of duration of training is the most important factor in outpatient training factor that influence theoretical teaching; course planning is the highest ranked factor that influenced bedside teaching and good instructors' experiences is the first ranked factor that influence theoretical teaching. Family medicine module is perceived satisfactory by most of the 18 items tool but still has many areas for specific improvement.

Overall satisfaction with clinical education was 86.8 %. this high satisfaction is congruent with other survey in Swansea that showed 91 % overall satisfaction [21], while it is higher than the Iranian which showed that overall satisfaction was 38.8% due to changes in health care system in Iran from 1994 have had an enormous impact on the medical education, students, instructors and health care workers satisfaction [14].

Also, the current study showed higher overall satisfaction than the study about the level of satisfaction of 5th and 6th years' medical students with the clinical training at Taif Teaching Hospitals in Saudi Arabia [8], where the overall satisfaction regarding clinical training was 53.4 %. The difference could be due to the combined PHC and hospital training in the current study.

There was statistically significant relationship between satisfaction with bedside teaching in clinical education/ family medicine module and gender; this was congruent with other studies which have shown that female students are more satisfied than male students in terms of their clinical education [1]. The majority of the study sample 85.3% was satisfied with outpatient training, this was congruent with other study in which student satisfaction in outpatient clinical teaching reached about 73 % [22]. The most important factors ranked by satisfied students were appropriateness of duration of training, followed by other factors. Yamani and Fakhari [23] mentioned that educational time is limited for the instructors and time management to allow them to teach and perform their medical duties.

There was significant relationship between satisfaction with outpatient training and each of appropriateness of educational atmosphere and class size while another study showed that 52% were satisfied with outpatient training and the most important factor was approach to common and epidemic diseases that contribute to satisfaction with outpatient training and there was a significant association between satisfaction with outpatient training and class size; approach to rare diseases diagnosis of which requires specialty; course planning and approach to common and epidemic diseases [14].

Most of the study sample 76.5% was satisfied with bedside training, the most important factors ranked by satisfied students was course planning followed by the other 6 factors. There was significant relationship between satisfaction with each of appropriateness of educational atmosphere, approach to common and epidemic diseases, good instructors' experiences, and approach to rare diseases diagnosis of which requires specialty. Good instructors' experiences, and approach to rare diseases diagnosis were

least ranked by students as important by students. Another study mentioned that there are a variety of newer models with suitable strategies for effective bedside teaching. Comfortable environment is essential for all participants; the learner, the patient and the bedside teacher [12].

Another study showed that 52% were satisfied with bedside training and the most important factor was approach to common and epidemic diseases. Also they found significant association between satisfaction with bedside teaching and teaching of rare diseases diagnosis which requires specialty, course planning, approach to common and epidemic diseases, class size in bedside, and appropriateness of educational atmosphere. Students' satisfaction with appropriateness of educational atmosphere was not significant while duration of bedside teaching had a significant effect [14].

Most of the study sample 77.9% was satisfied with theoretical training, which was similar to other [14] which stated that 70.8% of subjects were satisfied with theoretical teaching. The most important factor ranked by satisfied students was good instructors' experiences followed by the others. This was congruent with a study by Ziaee et al. [14] that showed experienced instructors had a significant association with students' satisfaction in theoretical education.

There was significant relationship between satisfaction with theoretical training and approach to common and epidemic diseases. FOM/SCU mainly concerned with community based education with teaching directed mainly to the most common disease in the community. The ranked scores of the educational factors of the organization domain represented the highly ranked factors scored one by student to be comparable to another study [14]but with the use of reduced sores as considering 1, 2 and 3 as strong satisfaction, the level of satisfaction could be higher than that presented in this study.

Most of the student reported satisfactory theoretical and practical evaluation (82.4% and 86.8%) respectively. There was significant relationship between overall satisfaction with theoretical and practical evaluation, this was better than another study showed that 64% and 48.8% were satisfied with the way they were tested from theoretical education and practical training, respectively but this due to low overall satisfaction in that study, but also there was a positive association between overall satisfaction and satisfaction with the methods through which their abilities after theoretical education and practical training [14].

Half of the students or more showed strong satisfaction with7 out of 18 items of FM module related to that the module ran smoothly, its elements integrated into meaningful whole, appropriateness of assessment methods, also the module team who provide opportunity to ask questions, well presentation of its material and good knowledge with availability of references needed in library. However, they were least satisfied with that the module made them look at profession differently or intellectually stimulating. While in another study [24] on 73 modules with 1660 completed questionnaires, the results were relatively better the mean percent of satisfied students with their educational experience ranged from 82% to 53% within 80% of the items.

Participants were most satisfied with the expected utility of their modules in their professional careers, the knowledgeable module teams, and the availability of module information at beginning of module. However, they were least satisfied with the availability of the required references and resources in library and with the amount of work required for modules. The difference could be explained by the difference in number and content of the evaluated modules at the School of Health and Social Care of a British University in the United Kingdom [24]while this study only evaluated onemodule of FM by 18 items tool.

Students who participated in family medicine module reported it to be a moderately positive experience, as evidenced by the level of student satisfaction regarding the module. Student input to curriculum evaluation is critical because students constitute probably the most important group in educational enterprises [25]. Kember and Wong [26] argued that there is evidence that a common questionnaire does not distinguish between different types of students and different types of instruction. Several measures of teaching effectiveness are needed when there are different learning styles [27].

CONCLUSION

Most of the students perceived clinical education and family medicine module positively, however the revaluation of clinical education should be carried with the specific attention to the variety of diseases in all clinical education and improving instructor experience in bedside teaching. Areas for improvement in FM module are to work on the module to make the students to look at profession differently and to work on improving the module to be intellectually more stimulating. The results of students' satisfaction with FM module as measure of quality are comparable with other modules in medical systems and could be generalized.

ACKNOWLEDGMENT

The authors would like to acknowledge all the participants for their cooperation.

FINANCIAL SUPPORT

By the authors.

CONFLICT OF INTEREST

The authors report no conflict of interest.

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Source of Support: Nil, Conflict of Interest: None declared