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The effect of training in primary health care centers on medical students pediatrics clinical skills

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Abstract

Background: Many literatures highlighted the importance of implementing pediatrics training program for medical students in the primary health care centers. A special community pediatrics training program was developed for the medical students of the King Saud bin Abdulaziz University for the Health Sciences. The fourth year medical students of this college will do two months rotation in different primary care centers as a part of family & community medicine training which include community pediatrics. One month of this rotation will be in Um Alhamam primary care center where three pediatrics consultants are available and will offer training for the medicalstudents.

Objective: is to enhance medical students clinical and communication skills.

Methods: Total of 100 students involved in this study, a self-assessment and clinical exam were conducted at the beginning and end of the program.

Results: The study showed that students benefited greatly from this community pediatrics training program with significant differences between their preexisting known skills and clinical skills acquired by the end of the program. Primary care centers are ideal places for optimal training because of small group training setting that is one tutor to two students and of the advantage that students face real patient environment which help medical student to improve their communication and clinical skills.

Conclusion: Pediatrics clinical skills module in the primary health care center enables medical students to achieve more of their important pediatrics clinical skills and should be mandatory training for all medical students.

Keywords: medical students, training, primary health care centers

1. Introduction

The College of Medicine of King Saud bin Abdulaziz University for the Health Sciences is located in Riyadh / Saudi Arabia. The main objective of the college is to graduate generalist physicians who are well aware of patients' medical, social, and psychological problems. The fourth year medical students of this college will do two months rotation in different primary care centers as a part of family and community medicine training which include community pediatrics. One month of this rotation will be in Um Alhamam primary care center where three pediatrics consultants are available and will offer training for the medical students. An intensive pediatrics clinical skills training program for a four-week period was carried out by these pediatrics consultants. Each pediatrics consultant has his /her own list of booked patients, students were distributed in small groups which will give them better opportunity to interact and examine real patients. The Um Alhamam primary care center is one of six primary care centers belong to ministry of National Guard in Riyadh city / Saudi Arabia and it is authorized as training center for medical students and residents. The services available in Um Alhamam primary care center are family medicine, pediatrics, ante and postnatal, ophthalmology, ENT, dermatology, psychiatry, dietitian, health education, laboratory and radiology.

The literature has shown that clinical training could occur through engagement and opportunity. Engagement in learning appears to be developed through four essential elements: recognition, respect, relevance, and emotion. Clinical Opportunities include the availability of patient encounters [1]. It is well documented that medical students receive their best training when this is done in primary care centers, due to many factors such as small group sessionsand the presence of real patients for hands-on training which include the development of effective patient interactions [2]. It is reported that students in primary care center will conduct physical examination more frequently and gain experience in both the breadth and depth [3]. The increased professionalization of teaching in primary care results in better training and cost containment and are improved quality of health care at the community level [4].

Primary care centers have become a critical element in training medical students, since enhancing interpersonal doctor-patient communication and clinical skills were perceived to be the most positive learning outcomes [5].

This study was done to determine the effectiveness of the pediatrics clinical skills module in the primary health care center in improving students' pediatrics clinical skills and collecting feedback on their experience.

2. Methods

Pediatrics clinical training module was developed for fourth year medical students at College of Medicine of King Saud bin Abdulaziz University for the Health Sciences (total 100 students) during the academic year 2015 and 2016. The module consisted of an intensive four weeks training program. Three Qualified pediatricians were carefully selected, oriented, and recruited to implement the program. Each group consisted of two students assigned to one tutor who spent four hours per session in the Pediatrics clinic in Um Alhamam primary care center. Students were assessed for their level of pediatrics clinical skills at the onset of the program using two methods;

first, by student self-assessment; second, by tutors conducting a clinical exam. For both, a questionnaire was designed using a scale from 1 to 5, assessing areas related to communication skills and examination of vital signs, growth parameters measurement (weight, length/ height and head circumference), developmental assessment, and systemic physical examination. Later, after four weeks, students were again asked to complete a similar questionnaire assessing their clinical skills achievement and their clinical skills were also assessed by their tutors. The information gathered was entered and analyzed using the Statistical Package of Social Sciences (SPSS, Version 20.0). Data was presented as mean ± SD (standard deviation) and a two-sample *t*-test was used to test the significant difference between skills level at the beginning and end of the program. *P* values less than 0.05 were considered statistically significant.

3. Results

A total of 100 students were enrolled in this module. Student feedback regarding this program was very encouraging. Most thought it one of the best training programs they ever experienced and indicated that it gave them the opportunity to learn many skills they lacked or felt not confident about. Students also indicated that the program period should be extended to longer than four weeks and that they preferred the professional skills training to be conducted in the primary care center rather than the hospital setting.

a) Student Self-Assessment

At the beginning and end of the program students were asked to assess themselves in the following areas: history taking and maintaining patient records, vital signs recording, growth parameters measurement (weight, length/ height and head circumference), developmental assessment and systemic physical examination. Table 1 shows a comparison between students' self-assessment at the start and end of the program, indicating highly significant differences at the beginning and end of the training program. Almost all students felt they improved greatly in their acquisition of various skills, with *P* value <0.001. Developmental assessment was the most improved skill at the end of the program whereas vital signs examination skill was the least improved (*P* value =0.001).

Table 1: Comparison of student self-assessment at the beginning and end of the program

Skill	Start Mean ± SD	End Mean ± SD	Mean difference	*P* value
History taking	2.57 ± 0.69	3.53 ± 0.84	0.96	<0.001
Vital signs examination	2.68 ± 0.88	3.26 ± 0.87	0.58	<0.001
Growth parameters measurement	2.47 ± 0.90	3.84 ± 1.07	1.37	<0.001
Developmental assessment	1.95 ± 0.71	3.58 ± 0.96	1.63	<0.001
Systemic physical examination	2.21 ± 0.78	3.42 ± 1.02	1.21	<0.001

b) Tutor Assessment

Tutors examined students at the beginning of the program to get an idea of their level of skills. At the end of the program, the same exam was administered to determine what difference the training program made on these students. Table 2 shows a highly significant difference at the start and end of the training program, both in acquisition of communication and pediatrics clinical skills. Based on tutor assessment, by the end of the program, the growth parameters measurement was the most improved skill (*P* value <0.001).

Table 2: Comparison between tutor assessment at beginning and end of program.

Skill	Start Mean ± SD	End Mean ± SD	Mean difference	*P* value
History taking	2.84 ± 1.07	3.63 ± 0.76	0.79	<0.001
Vital signs examination	2.73 ± 0.93	3.47 ± 0.70	0.74	<0.001
Growth parameters measurement	2.53 ± 0.77	4.26 ± 0.81	1.73	<0.001
Developmental assessment	2.10 ± 0.81	3.47 ± 0.61	1.37	<0.001
Systemic physical examination	2.84 ± 0.76	3.84 ± 0.83	1.00	<0.001

4. Discussion

In the past, medical schools have been challenged to train doctors competently to respond to community health care needs. To this end, many reforms in medical education have been made, refocusing curricula on the need to produce generalist physicians through a problem-based, student-centered, community-oriented, integrated approach to instruction [6]. Hence, community-based education is an important strategy for training students appropriately to deliver optimum primary health care services for children population [7]. Strategies for effective skills training include linking skills to student knowledge and attitude, proper selection of students with aptitude and motivation, training through practice along with feedback, and training teachers and assessors, plus the reinforcement of all these skills after graduation from medical school [8].

One of the main objectives of any medical school is to graduate doctors who are efficient and competent in communication and clinical skills, the core areas of competency for medical students [9]. To accomplish this, various schools have used many different training programs. However, it is vastly important to appropriately train the trainer who will carry that responsibility. The training environment is also critical. It has been recommended that medical schools include patient contact early in the preclinical curriculum [10]. However, few studies show students' early clinical skill development is not influenced by the educational setting [11]. Studies indicate that clerkship students who participate in early clinical experiences in primary care centers feel better prepared to perform clinical skills during their first clerkships, compared to their peers who had only practiced in a clinical skills laboratory [12]. Whatever the training environment is, there are many factors playing a role in the successful training program. Pearson and Lucas, in 2011, indicated that clinical learning occurs through engagement and opportunity with four elements playing roles in engagement: recognition, respect, relevance, and emotion.

Opportunity includes the availability of patient encounters [1]. All these factors, plus the environment, must be appropriately present in primary care center. In primary care center, training is usually observational and students usually have vast opportunities to learn hands-on patient care. Given a more holistic view of health care and its generalist nature, learning in the primary health care setting is reality based [4]. Various studies have shown that students in any community medicine rotation conducted physical examinations more frequently than in any other training activity [3]. Also, the increased number of qualified professional trainers in primary care resulted in better training, cost containment, and improved quality of health care at the community level [4]. In the USA, ambulatory primary care has become a critical element in medical education and enhancements in interpersonal communication and clinical skills were perceived to be two of the most positive learning outcomes [5]. Moreover, the literature has indicated that students develop better clinical skills in the primary care center training setting than in the hospital [13].

In this study is tried to introduce pediatrics clinical skills training In Um Alhamam primary care center assuming it to be the optimal place to train medical students. Students are introduced to communication and pediatrics clinical skills through interactive sessions, using direct contact between students and patients in actual clinical sessions. Students indicated that the number and quality of skills acquired during their short period in the Um Alhamam primary care center was equal to all three years' worth of training in the preclerkship phase. Students also responded positively in regards to their experiences in the Um Alhamam primary care mentioning the broad spectrum of pediatrics clinical conditions available to be observed and the greater opportunity to acquire clinical skills. Similar findings were reported elsewhere [14]. Students related these benefits to various factors: small groups in their training sessions, the availability of real patients, the opportunity to communicate with and examine patients directly, and the variety of cases, early clinical experiences in Um Alhamam primary care impacted positively on students' confidence, clinical reasoning, and interpersonal communication [8]. As suggested by the literature, my students' experience shows that direct exposure to real patients plus practice in the community health environment is an effective training approach, broadening students' education by offering them a community perspective on health and disease [15].

5. Conclusion

A community pediatrics -based training module enables medical students to achieve more of their important learning objectives such as clinical skills and that qualified community pediatricians probably make the best instructors to equip medical students with these valuable skills.

6. References

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