What are the Sources of Learning Medical Skills for Medical Students and Interns of Birjand University of Medical Sciences and Health Services?

Hajiabadi MR, MSc [1]; Kazemi T, MD[2]

[1] Faculty member ,Education Development Center, Birjand University of medical sciences and Health Services
[2] Associate professor, cardiology department, Birjand University of medical sciences and Health Services

Abstract

Background and purpose: *More attention to clinical skill training is essential for better medical education. In this study, the sources students used for learning these skills are investigated*
Methods: *In this cross-sectional study all medical students who at least passed 6 month of their clinical rotations and all interns participated. A questionnaire was used to collect the data which includes items on demographic data and items about the setting and sources of learning procedural skills. The questionnaires were developed based on a review of clinical skill training in Shahid Beheshti Tabriz, Tehran, Isfahan, and Kerman Universities of Medical Sciences. The questionnaire was examined for content validity by a panel of experts including 6 faculty members. For assessing the reliability of the questionnaire, a test-retest procedure on 10 students was conducted with an r = 0.85.To analyse the data we used SPSS ver. 16 and to examine the significance of findings we used a t-test and chi-square test.*
Results: *In this study 90 medical students and interns participated of all participants, 49 were interns; 45.6% were male. The interns were more likely to learn the more common procedures including intravenous blood sampling intramuscular injection, subcutaneous injection, urinary catheter placement, naso gastric tube placement, wound dressing and care, stitching, splinting from hospital staff and 25% of interns had no learning source for more advanced procedure such as intubation and CPR while only 20% of them learned these skills from specialist.*
Conclusion: *It seems that more faculty members involvement with students' skill training and promoting more effective use of skill labs potential can improve the clinical skill training of medical graduates.*
Key words: *Procedural Skills, Procedure Training Source of Clinical Training*

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Introduction

Medicine is art and science (1). Clinical skill including procedure skills are core contents of medical curriculum (2). To become doctor requires, one has to learn many skills and the curriculum should be developed to help students acquire these competencies and skills (3). Today due to more attention to patients rights shortened hospital stay, well developed outpatient service the traditional opportunities for learning clinical skills are becoming more limited (4). In many medical universities including Iranian Universities, skill labs are established where students can be trained in a safe environment

Corresponding author: *Mr. Mohammad Reza Hagiabadi is the director of EDC of Birjand University of medical science*
Phone: 0915 1612108
Fax: +98 561 44 40 556
Email: hhagiabai43@yahoo.com

with simulators, models and manikins (5, 6,7). More attention to clinical skill training is essential for better medical education. In this study, the sources students used for learning these skills are investigated.

Methods

In this cross-sectional study all medical students who at least passed 6 month of their clinical rotations and all interns participated.

A questionnaire was used to collect the data which includes items on demographic data and items about the setting and sources of learning. The interns should specify who taught them the following skills; Intubation, CPR, normal vaginal delivery (NVD), supra public urinary drainage placement, lumbar puncture, peritoneal pleural effusion, obtaining arterial blood gas sampling. The interns and students specified who taught then the following skills: Intravenous blood sampling, subcutaneous injection, intra-muscular injection, naso-gastric tube placement, urinary catheter placement wound dressing, stitching, casting, and obtaining ECG.

The questionnaires were developed based on a review of clinical skill training in Shahid Beheshti Tabriz, Tehran, Isfahan, and Kerman Universities of Medical Sciences. The questionnaire as examined for content validity by a panel of experts including 6 faculty members. For assessing the reliability of the questionnaire, a test-retest procedure on 10 students was conducted with an $r = 0.85$.

To analyse the data we used SPSS ver. 16 and to examine the significance of findings we used a t-test and chi-square test.

Results

In this study 90 medical students and interns participated of all participants, 49 were interns; 45.6% were male.

Table 1 shows the sources of learning clinical skills for 10 common procedures for medical students. The most frequent source of learning was hospital non-teaching staff while the lowest frequency was for general practitioners.

Table 2 shows the sources of learning common procedural skills for interns.The interns were more likely to learn the more common procedures including intravenous blood sampling intramuscular injection, subcutaneous injection, urinary catheter placement, naso gastric tube placement, wound dressing and care, stitching, splinting from hospital staff and 25% of interns had no learning source for more advanced procedure such as intubation and CPR while only 20% of them learned these skills from specialist.

Discussion

The most frequent learning source of many clinical skills (10 skills) for students was hospital staff. These skills were common skills. The next more frequent source of learning clinical skills for students was skill lab. Since medical students are not directly involved with patient care and rather they observe the process of care in this phase, there is a good opportunity for training the required clinical and particularly procedural skills in skill lab. Skill labs provide safe setting that can be used for students' skill training by most experienced instructors and the students can practice newly learned skill till they get to a level of dexterity that allow them to provide a safe care to patients in later phases of their education.

A study by Khodabakhshi et al showed that medical students and interns lacked sufficient clinical skills (8). In this study 78.6% of medical students said that they didn't had a planned training of these skills and asked for a training course in this regard. More over, 66.3% of respondent believed that clinical instructors were the most effective choices for instructing these skills (8).

Less than 20% of our interns stated the clinical instructors as the sources of learning clinical skills while they learned more frequently from hospital staff. In study by Farahani et al of 96 medical students, 31% said that they were competent in 21 skills out of a total 31 skills; 60.8% of respondent said that they learned the skills by themselves or from other students, and only 39% of respondents said that an instructor taught

Table 1. Frequency distribution of procedural skill learning sources for medical students of Birjand university of medical sciences and health services

Source of learning / Procedural skill	Skill lab	Clinical faculty members	GP	Hospital staff	Other Students	Self learning	Others
	No (%)	No (%)	No (%)	No (%)	No (%)	No (%)	No (%)
Venous blood sampling	2 (4.9)	0 (0)	0 (0)	15 (36.5)	3 (7.3)	1 (2.4)	20 (48.7)
Intramuscular injection	15 (36.5)	0 (0)	0 (0)	18 (43.9)	8 (19.5)	0 (0)	0 (0)
Subcutaneous injection	(21.9)	1 (2.4)	0 (0)	12 (29.2)	3 (7.3)	2 (4.9)	14 (34.1)
Intracutaneous injection	8 (19.5)	3 (7.3)	0 (0)	7 (17.7)	4 (9.7)	2 (4.9)	17 (41.4)
Urinary catheter ىplacement	6 (14.6)	2 (4.9)	0 (0)	10 (24.3)	9 (21.9)	2 (4.9)	12 (29.2)
Naso-gastric tube placement	5 (21.1)	5 (12.1)	0 (0)	10 (24.3)	3 (7.3)	2 (4.9)	16 (39.02)
Wound dressing	11 (26.8)	1 (2.4)	1 (2.4)	17 (41.5)	2 (4.8)	1 (2.4)	8 (19.5)
Stitching	14 (34.1)	5 (12.1)	0 (0)	18 (43.9)	4 (9.7)	0 (0)	0 (0)
splinting	4 (9.7)	0 (0)	0 (0)	17 (41.5)	2 (4.8)	0 (0)	18 (43.9)
ECG	12 (29.2)	5 (12.1)	1 (2.4)	13 (31.7)	3 (7.3)	2 (4.9)	5 (12.1)

them these skills (9).

In a study by Amini et al in Tabriz university of medical sciences, most students never had any supervision over the procedure they did by faculty members or residents(6). In a study by Fazeli et al in Isfahan on surgical procedures that interns did the most frequent instructors were residents while clinical faculty members were the least frequent source of learning (10). As shown in our study and in many other studies (6, 9,10,11) in most Iran medical schools students clinical skills are not well planned which leads to the fact that students most frequently learn these skills by themselves or from hospital non-teaching staff or even from another students. Many students said that they didn't learn most of clinical skills in skill lab and even when training is offered in skill lab it is usually not of good quality.

It seems that focusing on students' skill training and promoting more effective use of skill labs potential in this regard can improve the clinical skill training of medical graduates in Iran.

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Table 2. Frequency distribution of procedural skill learning sources for interns of Birjand university of medical sciences and health services

Source of learning / Procedural skill	Clinical faculty members	GP	Hospital staff	Other Students	Self learning	Others
	No (%)	No (%)	No (%)	No (%)	No (%)	No (%)
Venous blood sampling	0 (0)	0 (0)	25 (51.02)	7 (14.2)	1 (2.04)	0 (0)
Intramuscular injection	2 (4.08)	0 (0)	25 (51.02)	9 (18.3)	1 (2.04)	2 (4.08)
Subcutaneous injection	2 (4.08)	3 (6.1)	14 (28.5)	8 (16.3)	1 (2.04)	9 (18.3)
Intracutaneous injection	12 (24.4)	0 (0)	8 (16.3)	9 (18.3)	1 (2.04)	7 (14.2)
Urinary catheter placement	5 (10.2)	0 (0)	21 (42.8)	11 (22.4)	0 (0)	0 (0)
Naso-gastric tube placement	5 (10.2)	0 (0)	16 (32.6)	17 (34.6)	0 (0)	0 (0)
Wound dressing	2 (4.08)	0 (0)	28 (57.1)	3 (6.1)	1 (2.04)	9 (18.3)
Stitching	10 (20.4)	1 (2.04)	19 (38.7)	7 (14.2)	0 (0)	0 (0)
splinting	2 (4.08)	0 (0)	28 (57.1)	3 (6.1)	1 (2.04)	10 (20.4)
ECG	2 (4.08)	1 (2.04)	19 (38.7)	3 (6.1)	5 (10.2)	13 (24.4)
Suprapubic urinary drainage	7 (14.2)	0 (0)	8 (16.3)	13 (26.5)	2 (4.08)	10 (20.4)
Normal vaginal delivery	30 (61.2)	0 (0)	2 (4.08)	0 (0)	0 (0)	2 (4.08)
Plural effusion aspiration	21 (42.7)	0 (0)	1 (2.04)	0 (0)	1 (2.04)	15 (30.6)
Peritoneal fluid aspiration	17 (34.6)	2 (4.08)	1 (2.04)	10 (20.4)	1 (2.04)	2 (4.08)
Arterial blood gas	8 (16.3)	2 (4.08)	5 (10.2)	19 (38.7)	0 (0)	4 (8.16)
Intubation	14 (28.5)	0 (0)	5 (10.2)	1 (2.04)	3 (6.1)	14 (28.5)
Cardio pulmonary resuscitation	7 (14.2)	4 (8.1)	12 (14.4)	1 (2.04)	3 (6.1)	20 (40.8)
Lumbar puncture	21 (42.8)	0 (0)	1 (2.04)	0 (0)	3 (6.1)	15 (30.6)

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