

The Sources and their Rate of use by Interns for Learning Clinical Skill

Jalili Z, PhD¹; Noohi E, MSc²; Nakhaee N, MD¹

¹ Assistant professor, social medicine department, Kerman University of Medical Sciences and Health Services

² Instructor, nursing faculty, Kerman

Received: October 2005

Accepted: March 2006

Abstract

Background and purpose: Centers presenting clinical skills training in medical schools improve the students' ability in practical skills, provide an appropriate setting to practice in an experimental setting and prevent probable mistakes in a real setting. This study is an attempt to determine the interns' attitudes in Kerman University of Medical Sciences about the amount and the resources of acquiring elementary clinical skills through self-assessment.

Method: All interns, who passed the clinical skills course, participated in this cross-sectional study in 2004. A researcher made questionnaire was used to gather the data and t-test and ANOVA were used to analyze them.

Results: Most of the respondents believed a separate center as clinical skills center was necessary. Vital signs measurement, NG-tube placement and communicating with patients (18,35,17,76, and 17,3, respectively) got the highest scores in acquiring skills (stagger's self-assessment) and the lowest scores were for cauterization, intubations and surgical tools identification (9,09, 12,84 and 14,11, respectively). The mean of self-assessment score was 76, 7%. The most used resources to acquire skills were clinical skills ward (41%), self-learning (29%) and the professors and others (27%).

Conclusion: Since the self-assessment score was low and as the clinical skills center was used the most to acquire skills, improving training in this center and expanding its activities is necessary.

Keywords: Clinical skill, Skill lab, source of learning

Journal of Medical Education winter 2006; 8(2); 59-63

Introduction

Training medical students on clinical skills including procedural skills is one important part of core curriculum of under graduate medical education (1,2,3). It is essential that all medical students learn through well designed experience the clinical skills needed for good medical practice including history taking, physical exam, diagnostic reasoning, therapeutic decision making

basic and advanced life support, problem solving (2,3,4,5). Teaching hospital and outpatient clinics provides good settings for learning clinical and procedural skills but teaching in these setting also faces certain limitations including excessive number of students, small physical space, patients right and anxiousness of students (1,2,3). This problems influence the achievement of learning objectives. One solution is clinical skill center (CSC) where the students can use models and manikins and simulators for learning clinical skills in a safe, controlled environment (2,3).

Blighi (5) showed that most students (90%) found CSCs necessary as a bridge between factual knowledge and practical skills. Khosravi

Corresponding author: Dr Zahra Jalili, is the head of educational development center of Kerman university of medical sciences and health services
Tel: 98-341-211-3709
Fax: 98341-24-3005
E-mail: Z.Jalili@mail.uk.ac.ir

et al, also found out 99% students in his study thought that CSCs were essential for learning clinical skills. In CSCs for eliminating the risk the patients are exposed to when novice students are doing the procedures on them, the students practice on models, manikins and simulated patients. Since this is a controlled setting, giving feed back and practice to the point of acceptable competency is possible (2,3). The CSCs provide similar learning experience opportunities for all learners based on the objectives of the course; patients are protected from novice health care providers (medical students), the teachers and students level of stress are reduced and active self-learning approaches can be encouraged (5).

In the study by Khosravi et al, more than 50% of medical students, medical graduates and medical teachers believed that they had many problems visiting their first patients because clinical skill courses were not provided and 43% of students expressed that they experienced a harsh psychological stress in their first patient's contact (7). A study by Rahmani showed that more than 60% of student learned clinical skills through observing the non-teaching practitioners' practice in service provision setting and half of the students avoid using these skills.

In the last three decades, many clinical skill centers have been developed.

This centers are well developed in most European and ?? American medical universities but in developing countries their developments have been hindered. Due to several reasons, the most important of which are lack of financial support for buying the tools and devices required lack of defined outcomes for skill training (1,5).

In Iran the last decade has witnessed a move toward establishment of clinical skill centers throughout the universities of medicine (7,8,9,10). In Kerman University of medicine the clinical skill center was established in 1997. This study was an attempt to find out the sources of clinical skill training used by interns.

Methods and materials

In this cross sectional study, 120 interns of

Kerman university of medicine who passed basic clinical skill training course responded to the researcher made questionnaire which was developed in three parts collecting data on demographic features, the self assessment score for each of 17 clinical skills in a 0-20 scale, and the sources of learning skills. The students had three choice of clinical skill center, "clinical teachers and other staff", and "self-learning". The respondent gave a proportionate score to each source in 0-100. Student t – test and ANOVA.

were used for data analysis by using SPSS version 11.5.

Results

Of all participants 58.3% were female and 41.7 were male. The mean age was 25.95 (\pm 2.31) with minimum of 24 years and maximum of 37. Of these participants 49.27 – were in the first six month of internship phase while 50.8% completing the last six month of internship phase. The mean of self assessment score was 15.34(\pm 2.04).

Table 1 shows the self assessment score distribution for each clinical skill. The mean of male interns self assessment score was slightly higher (15.97 Vs 14.97, $P < 0.05$). The students rate the "Clinical Skill center" (41% \pm 14) as their first source of skill learning with "self learning" (29% \pm 16) as the second and "clinical teacher and other staff" (27% \pm 14) as the third.

Table 2 shows the source of learning for each of 17 clinical skills. The mean of score for skill learning sources by sex showed a significant difference for "clinical teachers, residents, and other students" with male student mean of 31.87 (\pm 10.07) and female, mean of 24.1 (\pm 11.57) ($P < 0.0001$). The other two sources were not significantly different according to sex .

The time spent in internship period has significant effect of the sources of learning skills the students used. The students who had began their internship 35.43 \pm 13.71) a ($P < 0.001$) while the interns with more them 6 month experience in the internship phase more used self learning (34.23 \pm 13.69 VS 22.15 \pm 15.9; $P < 0.001$).

Table 1. Distribution frequency of interns' self-assessment grade of clinical skills

Clinical skills	Mean (SD)	Range
Vital signs measurement	18.35 (1.36)	15-20
Injections and obtaining samples	16.25 (2.99)	0-20
Wound dressing and care	16.07 (3.46)	2-20
Casting	14.47 (3.89)	0-20
Transporting injured patients	14.34 (4.27)	0-20
Scrub up and sterile wearing gown and gloves	16.45 (3.32)	0-20
Identification of surgical sets and their use	14.11 (4.48)	0-20
Stitching	16.89 (2.19)	10-20
Cauterization	9.09 (6.52)	0-20
Nasogastric tube placement	17.76 (2.23)	10-20
Urinary catheter placement	17.06 (2.65)	5-20
Obtaining an EKG	14.15 (4.44)	0-20
Placing endotracheal tube	12.48 (4.87)	0-19
Cardio-pulmonary resuscitation	14.6 (3.45)	4-20
Positioning the patient	15.14 (3.29)	0-20
Communication skills	17.30 (1.97)	12-20
Using the suction	15.96 (2.85)	0-20
Mean	15.34 (2.04)	-

Discussion

Although there is no equivalent for authentic clinical settings interns of clinical skills learning, CSLCs are still considered essential since they provide a safe environment for learning clinical skills making planned learning experience for students possible (9,12, 13,14). Most participants in our study (90.8%) considered CSLCs essential. Beligh found that more than 90% of students believed that these centers linked factual knowledge with practical skills (6). Based on Khosravi's study (7), 82% of participants stated that they had no predefined or planned program for learning clinical skills. Seventy seven percent of students, 59% of graduates, and 50% of clinical teachers in Khosravi's study said that they had many problems with their first clinical encounters since they didn't have any prior training for basic clinical skills (7).

The students mean self-assessment scores of clinical skills were rather high (76.7% of the total possible).

Table 2. Source of learning and its rate of use for each of 17 clinical skills

Sources' rate of use (%) Clinical skills	Clinical skill center		Clinical teachers and other staff		Self-learning	
	Mean (SD)	Range	Mean (SD)	Range	Mean (SD)	Range
Vital signs measurement	45 (25)	0-90	31 (21)	0-90	24 (17)	0-100
Injections and obtaining samples	70 (20)	30-100	13 (13)	0-60	22 (16)	0-68
Wound dressing and care	53 (23)	0-100	24 (20)	0-80	23 (26)	0-100
Casting	32 (48)	0-100	47 (27)	0-100	20 (21)	0-80
Transporting injured patients	26 (24)	0-100	19 (18)	0-70	49 (34)	0-100
Scrub up and sterile wearing gown and gloves	53 (26)	0-100	30 (20)	0-70	16 (18)	0-100
Identification of surgical sets and their use	53 (27)	0-100	26 (22)	0-100	20 (19)	0-60
Stitching	62 (21)	0-100	23 (20)	0-100	17 (16)	0-60
Cauterization	16 (25)	0-90	21 (26)	0-85	32 (37)	0-100
Nasogastric tube placement	57 (28)	0-100	19 (18)	0-100	23 (24)	0-100
Urinary catheter placement	49 (26)	0-100	21 (20)	0-68	28 (23)	0-80
Obtaining an EKG	46 (25)	0-100	23 (21)	0-100	27 (21)	0-90
Placing endotracheal tube	37 (22)	0-80	35 (24)	0-80	27 (23)	0-95
Cardio-pulmonary resuscitation	36 (23)	0-80	38 (19)	0-100	25 (20)	0-90
Positioning the patient	26 (19)	0-80	33 (23)	0-60	40 (28)	0-100
Communication skills	18 (17)	0-70	31 (25)	0-60	50 (32)	0-100
Using the suction	25 (18)	0-80	31 (25)	0-100	41 (30)	0-100
Mean	41 (14)	-	27 (12)	-	29 (16)	-

The highest self-assessment score was given for checking vital signs, NG tube placement, and communication skills, while a study by Mortazavi where the students' communication assessed based on the opinion of an observer and patients' surveys reported moderate to weak results (15). This may indicate a need for further objective assessment of students for communication skills. The students gave the lowest score to catheter placement, endotracheal tube placement and identification of surgical tools. As these are important skills for a physician specially in managing emergency cases further attention to training of these skills seems warranted.

The most used learning source of basic clinical skills (41 ± 14) was clinical skill center while a study by Rahmani in 1997 showed that most interns had learned most clinical skills through observing non-teaching medical staff practice and half of them avoid doing procedures requiring these skills, while 60% considered themselves rather competent in these skills. Most respondents considered the lack of proper training as their major cause of avoidance.

Our findings showed that junior interns used skill centers more than seniors and a study by Bamnes indicated that many students had deficiently in their basic clinical skills and their skills did not improve during internship period (16) so it is logical to conclude that clinical skill training should be planned prior to internship phase to get students better prepared for the task they have to do.

The clinical skill center of Kerman University of Medical Sciences can be considered rather successful in training basic clinical skills; but this is only the first step. A careful planning is required to include all essential skills in the curriculum, and then specify which skills should be trained in which phases of the program and in which settings.

References

1. Das M; Townsend, A. The views of senior students and young doctors of their training in a skill laboratory. *Med Edu* 1998; 32: 143-8.
2. Dent JA, Harden RM. A practical guide for medical teachers. Harcourt publishers limited 2001 (86-97).
3. Talaei H; Sayyar M and Yazdani Sh. Clinical skill center: a review of present situation and importance in medical present situation and importance in medical education curriculum *J Med Edu* summer 2002; 1(4).
4. Schwabbaure M. But can they do it? Clinical competency assessment. *Clin Lab Sci* 2000; 13(1):47-52.
5. Boulary D, Medway Ch. The clinical skill resource: a review of current practice. *Med Edu* 1999; 33: 185-91.
6. Bligh J. Techniques in medical education: The Clin Skil Unit Post Graduate J. 1995: 71: 730-2.
7. Khosravi F, Haghdost A, Noohi E, A Survey of interns, teachers, and graduates of Kerman University of Medical Sciences on importance and content appropriateness of clinical skill centers. *J Ghazvin Med Univ*; Summer 2002; 22:25-8
8. Rahmani A. A study of clinical skill training of medical interns of Kerman University of Medical Sciences. [dissertation]. Kerman: Kerman University of Medical Sciences; Winter1998.
9. Shanghai A, Hoissanzadeh S, The effect of skill training in clinical skill center on medical students' subjective sense of preparedness for using basic clinical skills.
10. Miameni Sh. The effect of basic clinical skills on practical competence based on students' view points. *J Med Edu*. 2003; 4(1):33
11. Azizi F. Medical education: mission, vision and challenges. Tehran: MOHME deputy of education Publication;2003
12. Dconnor M, MC Graw RC. Clinical skills training developing objective assessment instruments. *Med Edu* 1991; 31: 359-63.
13. University of new southwals. A report of clinical skills learning center. Available from: <http://www.cunk.edu.nk/ipro/01057C:htm2001>.
14. St Bartholmew's hospital. The center's facilities. Available from: <http://www.clinicalskillscenter.ac.uk/facility.htm2001>.
15. Mortazavi H. The communication skills of medical students.[dissertation]. Kerman: Kerman University of Medical Sciences; 2004.
16. Bramnes JG. Valump. Socialization of

physician's identification with physician's role.
Tidsskr Nor Lægeforen 1998; 30 (17) 2211-3.