

Clinical skill center: a review of present situation and importance in medical education curriculum

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ABSTRACT

Clinical skill centers were designed in 1960, offers innovative, more effective clinical health care and treatment curriculum. Clinical skill center (CSC) can provide a special facility for clinical and communication skills practice in a setting outside hospital wards in order to train students with enough confidence of confronting real patients.

Learning clinical skills in these centers are not patient-dependent and by practicing on manikins and simulated models errors in real patients can be prevented. Moreover, possible feedback of this method can be used for evaluation and can improve quality and quantity of the education.

This review intends to determine the purpose, undertaking, and structure of CSC. The study emphasizes the importance of integrating the clinical skill centers into the teaching curriculum of medical universities. Apparently, organizing clinical skill centers can play an important role for improving the quality and quantity of the educational system and consequently post-graduate performance. The authors recommend this program can be a solution for having both the knowledge and skill of diagnosis and treatment seasonal and rare diseases.

Key words CLINICAL SKILL CENTER, MEDICAL EDUCATION, CURRICULUM

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Introduction

Reports and research of traditional medical education have shown that students are more interested to learn skills which are more related to frequent diseases. Students are concerned that their clinical and communication skills be assessed precisely. Moreover, they believe clinical and communication skills training is not comprehensive and also training programs in hospital wards are not covering all relevant skills (1). The most

important factors for this dissatisfaction are:

- preventive and modern treatment are decreasing number of admitted patients; therefore, there is less opportunity for learning diagnostic and treatment skills (2);
- admission time is decreasing because of financial and insurance causes, and also earlier diagnosis by using modern diagnostic tools (2);
- more tendency toward ambulatory care and out-patient treatment (3,4);
- more specialists and subspecialists using semi-invasive diagnostic and treatment approaches with modern technology, such as endoscopy, results in decreasing admission time; consequently, training curriculum in

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hospitals becomes less effective for general students (2,4);

- students seldom observe seasonal and rare diseases and have brief knowledge of their diagnosis and treatment;
- lack of orientation to the hospital settings, stress of visiting patients, and preceptors restriction limits the range of learning (1,4);
- errors on real patients is not ethical and even sometimes dangerous;
- in traditional methods, oral and written examinations partially determine the students' knowledge and their psychomotor and attitude skills are not assessed (2); and
- organized curriculum and behavioral check-lists, specially for evaluating clinical skills and improvement of students abilities are very effective (2,3).

Medical students must acquire the cognitive and psychomotor skills necessary to be an initiative and self-directed learner. Since 1960, clinical skill centers were designed to answer to this need of changing the clinical curriculum and health care and treatment system. In a stress-free environment with full supervision, clinical and communication skills are practiced which are also morally acceptable. The interaction of knowledge, attitude, and abilities makes a better clinical assessment and judgment possible (4). On the other hand, clinical skill center (CSC) can provide a special facility for different syllabus of medicine, and for clinical and communication skills practice and communication in a setting outside hospital wards in order to train students with enough confidence of confronting real patients (1,4).

This review was conducted in 2001 and 2002, and intended to determine the purpose, undertaking, and structure of CSC. The study emphasized the importance of integrating the clinical skill centers into the teaching curriculum of medical universities.

Materials and Methods

The search for literature began with the *MEDLINE*, and we also searched through *GOOGLE*, *ALTAVISTA*, and *YAHOO*. In the advanced search, *clinical skill center* in the exact phrase, and *structure*, *mission* and *objective* in *with all of the words* part was used. Over 129 results in *GOOGLE* and 81 in *ALTAVISTA*, and 17 articles in the *MEDLINE* were found. Then

indices of *Medical Education*, *Medical Teacher*, and *Academic Medicine* were searched for related articles. From the total findings, about 60% of the articles clarified the purpose of CSC and described the structure and mission of CSC accurately and met the criteria for inclusion in this review. The articles were published predominantly in Europe and North America, from which the well-known universities were selected.

The review findings consisted of the following sections: (1) CSC mission, (2) main and specific purposes, (3) strategy and educational methods, and (4) evaluation.

Findings

CSC mission

Interaction of theoretical knowledge with clinical and communication skills was mostly claimed to be the major mission. The students participated in different courses and experienced learning skills in a stress-free environment that was simulated as a real ward. They prepared to become confident enough for practicing their skills on real patients with the minimum failure (5).

Main purposes

- 1) To design a stress-free environment for the students in medical, dentistry, midwifery, nursing, physiotherapy, and other related fields to facilitate teaching clinical and communication skills and technical methods (1,4,5).
- 2) To facilitate and improve teaching and learning activities (2,5).
- 3) To make resources and necessary facilities adaptable to the new progress available for students, instructors, and medical university clerks (5,6).
- 4) To encourage, motivate, and construct a well organized system of medical education by using manikins, audio-visual and computer equipment, simulation models, and real patients (2,6).
- 5) To make necessary facilities and convenience for evaluation and assessment of students abilities (7).
- 6) To generate research opportunities in different fields of medicine (8).

Specific purposes

Teaching and learning:

- 1) communication skills and history taking (1,2,5,9);

- 2) professional medical attitude and medical ethics (1,9);
- 3) physical examination and clinical skills (1,3,9);
- 4) diagnosis and treatment skills (11);
- 5) critical appraisal and clinical analysis (1,11);
- 6) team working (1,12);
- 7) resuscitation task (1,8,12,13,); and
- 8) information technology (1,6,8,14).

Clinical skill center costumers

- 1) Pre- and post-graduate medical students and other related fields, such as nursing, midwifery, and physiotherapy (2,5,15,16);
- 2) non-medical students participants for learning clinical skills (5);
- 3) medical doctors who want to take special continuing medical education courses (3,16); and
- 4) hospital personnel.

Educational strategy

Lecturers and instructors of clinical skill centers should be updated with new methods of teaching and learning in their own fields. SPICES (student centered, *problem-based learning, integration, community-oriented, electives, systematic-based*) model that was first introduced in 1984 by Harden, is the most acceptable educational method at the moment and it is practiced in most of the clinical skill centers (1,5,8,17).

Educational methods

Most of different methods that have been used in the clinical skill centers emphasize on active self-directed learning, small group discussions, and interactive sessions (5,6,9,18).

Educational phases: common method

- 1) Students first study an educational pamphlet or watch a videotape of performing clinical or communication skills, followed by a group discussion (4,6).
- 2) Students watch interviews of instructors with real patients or simulated models, or they watch instructors' performance of skills, followed by group discussion (1,14).
- 3) Then, students perform clinical and communication skills on manikins, simulated patients, and real patients, or using computer-based programs under instructors' supervision, and at the end they provide their feedbacks (2,19).
- 4) Final evaluation (7,9,19).

Evaluation

Evaluation of students' performance in clinical skill centers plays an important role for improving educational level, attitude, and skills. Regular formative evaluation during courses and summative evaluation at the end of courses with an objective, structured, and clinical examination was done (1,5,7,9,15,16,20).

Discussion

Clinical skill center can act as a connection between the theoretical knowledge and clinical skills. In these centers educational activities ranging from simple to complicated can all be standardized and controlled. Moreover, teaching clinical skills in these centers are not patient-dependent. Adequate feedback available in this method of learning can be used for evaluation and can improve quality and quantity of the education. There is no limitation for repeating skills as they are not performed in real patients. Furthermore, because of self-directed learning which is basic way of learning students are able to improve their knowledge and skills throughout their life. Errors as a result of practicing in real patients by unskillful student can be both unhealthy and immoral; however, by practicing on manikins and simulated models in clinical skill centers we can prevent these errors.

In conclusion, considering all these positive points, organizing clinical skill centers apparently can play an important role for improving the quality and quantity of the educational system and consequently post-graduate performance.

Recommendations

The authors recommend organizing a clinical skill center at Shaheed Beheshti Medical University, as this can be a solution for having both the knowledge and skill of diagnosis and treatment seasonal and rare diseases.

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