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# Optimal clinical setting, tutors, and learning opportunities in medical education: A content analysis

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## Abstract:

**INTRODUCTION:** As an integral and the most important part of medical education, clinical education provides the opportunity to prepare medical students as professionals. This study explores the standpoints of informants concerning the optimal conditions for clinical education and its components, including learning opportunities, clinical settings, and clinical tutors, with the aim to improve clinical teaching and standards.

**METHODS:** The study design is built on qualitative content analysis with the directed approach. The participants were selected using purposive sampling with maximum variation, and the data were collected through online focus group discussion (FGD) and semi-structured individual interviews conducted either face-to-face or on the telephone.

**RESULTS:** Twenty vice-chancelleries of education and medical education planners from across the country participated in this study. Concepts resulted in four main categories: educational settings, tutors, creating learning opportunities, and learning situations. The concepts were sorted into 15 subcategories, also 21 subclass 1 and 14 subclass 2. The most extensive subcategories comprised variety of educational settings, teaching team conditions, and learning strategies.

**CONCLUSION:** Optimal conditions for clinical education are associated with the use of educational settings close to the real workplace of general practitioners such as general inpatient settings, outpatient settings, and emergency department. Moreover, optimal conditions require the provision of learning opportunities by organized team of tutors and team member empowerment along with policy-making and planning on the national scale by the Ministry of Health in consideration of local conditions.

## Keywords:

Clinical education, clinical opportunities, clinical setting, clinical tutor, learning situations

## Introduction

Clinical education is an integral and the most important part of medical education<sup>[1]</sup> and is one of the major components of healthcare programs.<sup>[2]</sup> During the clinical phase of the doctor of medicine (M.D.) program, what is already learned is put to practice.<sup>[1]</sup> Amin and Eng enumerate a few key features of clinical education. He points out issues such as the specificity of clinical teaching for any

particular encounter, unpredictability and time constraint as challenges involved in clinical education.<sup>[3]</sup> Other definitions characterize clinical education as “any teaching that takes place in the presence of the patient” or teaching in the outpatient clinic, inpatient setting, and even the conference room if it is at the presence of the patient.<sup>[4]</sup>

Several studies have been conducted in Iran and other countries regarding to clinical setting, tutors, and the learning opportunities. Perkins and Daly have noted that clinical education has traditionally

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occurred in specialized settings in urban hospitals, while medical students need to experience clinical settings that can provide learning with multiple differential diagnosis.<sup>[5]</sup> The results of studies carried out in the Iranian context also indicate the lack of using clinical setting in accordance with purposes of general practice curriculum, improper attention to outpatient setting, poor quality education in inpatient setting, specialized discussions in educational rounds, and overlook of internship education.<sup>[6-8]</sup>

In a systematic review, Köhl-Hackert *et al.* also showed that in the healthcare system, it is a fundamental challenge for clinicians to simultaneously supervise students and perform routine tasks. These undesirable educational conditions lead to lack of supervision on students and accordingly lack of learning of the fundamental clinical skills on the part of students.<sup>[9]</sup>

On the other hand, the key characteristic of education in the healthcare profession is the provision of experimental and active learning opportunities in different clinical settings<sup>[10]</sup> where learners' attainment from clinical experience is affected by factors such as the structure of the clinical environment, their perception of educational goals in the clinical setting, and their attitude and responsiveness to the health profession.<sup>[11]</sup>

Medical education is in fact an opportunity to train professionals who acquire the knowledge, skills, and attitude necessary to take care of patients. The M.D. program in Iran lasts for 6.5–7 years and consists of basic sciences, preclinical (physiopathology), and clinical (clerkship and internship) components. The physiopathology (preclinical course) and clinical course can take 4–5 years. Graduates are awarded the M.D. degree after completing the clinical course. In Iran, a total of 63 medical schools affiliated with a governmental and private organization are responsible for training medical students. Clerkship and internship (clinical course) in the traditional planning take 20 months and 18 months, respectively.<sup>[11,12]</sup> However, are the current M.D. programs appropriate to train graduates sufficiently competent to control diseases and solve healthcare problems?

Clearly, any improvement of the clinical education lends itself to the description of optimum conditions for its components among which learning opportunities, clinical setting, and tutors are more affected by differences in the circumstances and facilities existing in different universities. The need to explore the optimal conditions for clinical education is highlighted by the results of research on challenges involved in clinical education and references made of the aforementioned issues in

clinical education guidelines for the M.D. program by the Ministry of Health and Medical Education.<sup>[13]</sup>

We designed this study to identify the optimal and native conditions for clinical education to help improve standards of clinical education. The small number of domestic studies on clinical setting, tutors and influential individuals in clinical education, and optimal learning opportunities provided the ground for the present study. To create a new look into the optimal clinical education in the changing M.D. program in the vast country of Iran, we tried to incorporate the M.D. curriculum planners and experts from different medical schools across the country.

## Methods

The current qualitative research is a qualitative content analysis with the directional approach. When the previous theory or research about a certain phenomenon is not complete or more descriptions are needed, the content analysis method with the directional approach is employed.<sup>[14]</sup>

### Participants and data collection methods

In this research, the participants were recruited using purposive sampling with maximum variation to obtain the highest level of information.<sup>[15]</sup> Twenty vice-chancellors of education of universities of medical sciences and deputies of education and clinical education in medical schools throughout the country have participated in this study. From among the participants, 16 were male, and four were female. Data collection methods included online focus group discussion (FGD) and semi-structured individual interviews conducted either face-to-face or on the phone. As the participants had busy schedules and worked in different parts of the country, the researchers decided to hold a focused webinar session to assimilate their simultaneous presence in one place.

To data collection, at first, the M.D. program deputies of education were notified through the telegram application about the research purposes and the FGD. When we received consents for participation from a number of them, an agreement was reached on the time for the FGD sessions and they were provided information on how to use the respective virtual space. To obtain data saturation, we identified other participants and contacted them to have their participation, provided explanations about the confidentiality of personal information and the information they provided, and agreed on the time and place of the interviews. In addition, informed consent for participation in the study and permission to record the interviews were obtained.

In total, data collection was conducted through two virtual focus group sessions, four face-to-face interviews, and eight telephone interviews. The time for discussion in the focused group was 90–150 min, and for individual and telephone interviews, it was between 45 and 110 min. Interview questions were categorized into three fields: clinical setting, clinical tutors, and clinical learning opportunities. The interview questions began with description of the status quo and the strengths and weaknesses of clinical education in the view of the participants and continued with their comments on the optimal conditions for the three components of the study and the follow-up questions.

### Data analysis

Content analysis was used to analyze the data. The data preparation phase began with the selection and definition of the analysis unit. To immerse ourselves in the data, we read all the interviews after verbatim transcription for several times to extract the meaning units. The number of codes extracted at this stage was 618, which was reduced to 413 after eliminating repetitious codes and merging similar codes. In the next step, the related codes were sorted into a subclasses. Then, they were placed under larger groups or subcategories, and in the next step, main categories were formed.

### Ethical consideration

Ethical considerations of this study were getting permission from research chancellor and ethics committee of Isfahan University of Medical Sciences (IR.MUI.REC.1395.3.55), taking written informed consent from all the participants, justifying the participants about the study and its goals, considering the principles of confidentiality in publication of information and keeping them confidential, and freedom of participants in leaving the study at any desired time.

### Rigor

To determine the trustworthiness of the data, we used the four axes of credibility, transferability, dependability, and conformability proposed by Lincoln and Guba.<sup>[6]</sup> Credibility was obtained through the examination of interview transcripts by the researcher's colleagues and resolution of ambiguities. Transferability was ensured by incorporating informed participants. Dependability was achieved when identical answers were given to the same question by participants. Finally, to guarantee conformability, we tried to avoid any bias in the subject of research before and after the interviews until the results of the research were also approved by other readers.

## Results

In sum, the statements derived from the content analysis were grouped into four main categories, 15

subcategories, 21 subclasses 1, and 14 subclasses 2. This classification is displayed in Table 1.

### Educational settings

From the perspective of the participants, achieving optimum conditions requires the development of policies at the level of the Ministry of Health and Medical Education, issuing permit, and the development of infrastructures. It seems that the breadth and diversity of views in the two subclasses 1 and 2 depend on the difference in clinical courses, resources, facilities, and different types of medical schools and their respective clinical settings. In spite of the disagreement between the participants concerning the proportion of students to attend in the clinical setting during the courses, in most cases, they believed that the general hospital wards were prioritized over specialized wards. They also considered necessary the inclusion of the emergency setting in the courses, especially the main courses, and the inclusion of community setting and clinical skills learning centers in the program.

A summary of the participants' statements in this main category includes the need to prioritize education overtreatment in the clinical setting, development of standards for the use of a variety of settings in the clinical rotations (courses) at the Ministry of Health and its dissemination to universities, planning for M.D. educational settings to provide education for primary to tertiary healthcare services.

Focused group 2: "It should be made clear that a student must attend an emergency setting for at least 1 month from the three internal rotations of the internship course. Otherwise, such an internal department should be treated with caution in the allocation of students; this should be pursued through the ministry if possible. This way, schools can follow this process more firmly."

### Tutors

The formation of a structured educational team was one of the issues raised by the participants on which there was an overall agreement. Participants also provided feedback on the policy and mechanisms required for the development and activity of the educational team. From their point of view, faculty members have a key role to play in the educational team and are focal to teaching and evaluation. There were disagreements regarding the participating groups in the educational team, their membership criteria in the team, and the task descriptions of team members. Nevertheless, the participants agreed on the need for incentives to motivate members of the educational team. Some of the statements extracted from the research in this category included the following cases.

The necessity to form a team for the teaching of M.D. students, the composition of the educational team according to the

**Table 1: Main categories, subcategories, and subclasses of optimal clinical conditions**

Main category	Subcategory	Subclass 1	Subclass 2		
Educational settings	Policy-making for the promotion of settings	-	-		
	Program design for educational settings	-	-		
	Diversity of educational settings	Inpatient setting Emergency setting Outpatient setting	- - Ambulatory setting Community setting Office setting		
Tutors	Rules and regulations	Clinical skills learning centers	-		
		-	-		
	Teaching team	Teaching team members	Faculty and specialist Resident General practitioner Staff		
		The criteria for entering the teaching team	The criteria for resident The criteria for general practitioner The criteria for staff		
		The task description of the teaching team	The task of resident The task of general practitioner The task of staff		
		The obligation of presence	Notification for teaching team		
		The teaching team empowerment	-		
		The motivation and the material and immaterial incentives	-		
		Creating learning opportunities	Designing and planning learning opportunities	-	-
				Empowerment and enthusiasm of teachers	-
Educational atmosphere	-				
Learning strategies	Effective technique		-		
	Clinical reasoning		-		
	PBL		-		
	Virtual training		-		
	EBM		-		
	Collaborative learning		-		
	Study guide		-		
Supervision of students	Feedback/reflection	-			
	Continuous supervision	-			
	Evaluation	Student assessment			
Learning situations	Morning report Journal club Teaching rounds Mortality conference	Logbook/portfolio	-		
		-	-		
		-	-		
		-	-		
		-	-		

PBL=Problem-based learning, EBM=Evidence-based medicine

course and the educational contents, the necessity to issue an official notification to the members of the educational team by agreement between the vice-chancelleries of education, health, treatment of the Ministry of Health and Medical Education, the necessity to use specialist staff, in the educational team, competent and interested residents and general physicians in the educational team.

Focus group 2: "It depends on the tutor to train which of the groups, [..], I mean, teaching in the internal rotations is different from teaching in the surgery department; the

teaching for health purposes is different, for instance, from the pediatric wards. For example, in the major sections, all specialties should be present for teaching."

### The preparation and creation learning opportunities

The extracted statements from this main category included the followings. Recognition of learning opportunities in the curriculum map, passing of rules operable by tutors to provide learning opportunities, the commitment of the tutors and their interest in

creating learning opportunities, conduct and continuous monitoring of the implementation of the learning opportunity written in the curriculum, diffusion of greater responsibility to persons clerk, provision of opportunities for students to use clinical reasoning in patient management, provision of opportunities for self-learning, evidence-based clinical education, and immediate feedback.

Participant 8: "Its (i.e., learning opportunities) general principles can be brought in the curriculum, but how it is to be attained depends on the way the respective policies are made at the university, in the setting, etc., Yet, its fundamentals can be mentioned in the curriculum, yes, notification about such opportunities is definitely useful, and it is indeed very good."

### Learning situations

The views of our participants on the manner and frequency of the morning report and teaching rounds were different, which appears to root from the differences in the wards although most of the participants agreed to hold some of the rounds jointly for persons-clerk and interns. What follows is a gist of their views: developing learning objectives for the learning situations such as journal clubs and grand rounds, etc., morning reports held specifically for persons-clerk and interns, holding independent teaching rounds for residents for M.D. students, active participation of persons clerk and interns in journal clubs, and participation of persons clerk and interns in mortality conferences.

Participant 4: "Depending on what you expect from the morning report, the way you manage it can be different. You can even perform the morning report (for M.D. students) separately. As you are looking for something that is known by the fellow or resident of the third or fourth year, but that is still new to the student, it is no doubt that the morning can be performed separately without a problem."

### Discussion

In our research, the diverse views of the participants revealed the importance of addressing educational setting, the tutors, and learning opportunity in clinical situations.

Clinical setting is among clinical education components and includes inpatient and outpatient settings, community settings,<sup>[17]</sup> and clinical skills learning centers. From the participants' point of view, the presence of MD students in various clinical settings is essential for optimal teaching, and more time should be assigned to outpatient and community settings. In a study, 95% of the learners stated that the outpatient and community settings

are useful learning environments for education.<sup>[18]</sup> On the other hand, hospital settings provide learning opportunities for procedures and patient management,<sup>[19]</sup> which is in line with our findings. Duvivier *et al.* have listed the clinical skills learning centers as a safe setting to prepare students.<sup>[20]</sup> This corresponds with the view of our participants.

In spite of the unanimity of our participants for the inclusion and proportion of the use of clinical settings in the course rotations (i.e., hospital wards), they believed that such an action requires that the Ministry of Health and Medical Education make policies, notify, and evaluate the application of clinical settings in medical education. This seems to be due to the semi-centralized educational system in the Iranian context and accreditation made by the Ministry of Health and Medical Education. According to the participants, the collaboration of the vice-chancelleries of education, health, and treatment is needed to both attain their cooperation and to exploit the clinical settings accessible by them, to create variety, and to expand clinical setting spaces.

A clear development of goals and awareness of medical students of the expected competency of a general physician, along with the assignment of responsibility to learners according to their level, were requirements considered by the participants as contributory to effective learning. The results of research conducted by Croft *et al.* showed that, in the view of students in inpatient activities, 86% were willing to first history taking alone and then present to the faculty.<sup>[21]</sup>

Components such as the instructors, learning materials and the appropriate environment are necessary for learning in the clinical environment. Evidence suggests that the interaction between these components determines student learning. Therefore, learning during clinical education is partly related with the instructors' characteristics.<sup>[22]</sup>

Participants in this study emphasized the necessity of forming an educational team, developing entry prerequisites for clinical settings, and specifying tasks of the team members to create optimal conditions for learning purposes. According to them, the issuance of a permit for the building of a team with clear characteristics by the Ministry of Health and Medical Education will support its implementation in Medical schools. Given the fact that the standards related to resources and facilities are formulated in a formal and focused manner, formal permissions are required as for the desirable implementation of the educational team with the mentioned conditions.

It is obvious that faculties are key to teaching in hospitals; however, residents are also responsible for an important part of teaching student. The study of Garakyaraghi *et al.* showed that interns considered as useful to be present with residents in the clinic.<sup>[23]</sup> Weinholtz and Edwards is quoted that persons-clerk and interns evaluated their interactions with residents more beneficial than their relationship with specialists and faculties regarding learning process.<sup>[24]</sup> The results of their study are consistent with those in our research where the collaboration of residents and diffusion of part of the education responsibilities to them were among optimal conditions. In addition, our participants emphasized that the presence of competent specialists working in clinical settings in the educational team was effective in learner education. Regarding the collaboration of general physicians in the educational team, van der Zwet *et al.* is quoted in the qualitative research of Silverstone to state that the general physician instructors are an important determinant of effective teaching in the community, that learners consider traits such as a good teacher, role model, and creator of appropriate learning environment for a good general physician.<sup>[19]</sup> This is consistent with the views of a number of our participants on the usefulness of the collaboration of selected general physicians in the educational team for the community setting.

Creating learning opportunities has been emphasized. The results of Sheehan *et al.*'s study have shown that communication with the real patient is very important for learning, and that it is necessary to experience increased responsibility for patient care under the supervision of an experienced physician.<sup>[25]</sup> The results of Van Der Hem-Stokroos *et al.*'s research shows that when the expected goals for organizing learning experiences of graduates are specified by schools of medicine, 92% of the students had clear goals, and 96% stated that they easily achieved goals. In addition, learners expressed their ability to manage the patient as sufficient (with a broad standard deviation).<sup>[26]</sup> The results of studies are in line with our results on the design and planning of learning opportunities, the creation of a nonthreatening educational environment and student supervision, and the adoption of appropriate and student-centered learning strategies as criteria for obtaining optimal conditions. The secure learning environment and creating self-confidence in the learners were among the other criteria for creating optimal conditions from the perspective of our participants. Results from Grant and Rowling's action research, as quoted by Pearson, propose a positive, supportive environment to enhance learning in medical students.<sup>[27]</sup>

As for the necessity and manner of performing learning situations, the common point of our participants revolved around the need for medical students to have

greater participation in, even independent performance of learning situations. In a study on morning reports, attention to different levels of learners was reported as 28%.<sup>[28]</sup> In contrast, in another study on the morning report held in the emergency department, the morning report was reported equally effective for all groups.<sup>[29]</sup> This diversity of circumstances suggests the need for a revision in the running programs and application of successful experiences.

One of the strengths of this research was to use the viewpoint of the planners of MD program of different schools to explain the optimum conditions. This due to diversity, geographic extent, indigenous differences and facilities of the country's medical colleges variables regarding the components studied, was created a comprehensive look for us. The present study is qualitative research which its generalizability is limited and this important by self is considered from the limitations of this research.

## Conclusion

The results on the optimal conditions for clinical education in the components covered in this study were wide and varied and were sorted into the main categories of educational setting, tutors, development and creation of learning opportunities, and learning situations. Among optimal conditions for clinical education emerged in this study are the use of diverse educational settings and closer to the real workplace of general physicians such as general inpatient, outpatient and emergency settings, provision of learning opportunities for learners by an organized team of tutors and policy-making and planning at the national level by the Ministry of Health and Medical Education in light of the conditions of domestically-based medical schools.

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## Conflicts of interest

There are no conflicts of interest.

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