



Explaining Internal Medicine and Surgery Residents' Perceptions of Mentor as a Role Model: A qualitative Study

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Received: 29 Sep 2021

Published: 6 Aug 2022

Abstract

Background: Role modeling is the essence of the teaching process and one of the important functions of educators and clinical instructors. In clinical education situations, many clinical instructors are responsible as mentors. On the other hand, clinical instructors, although not obvious, are seen as role models. This study is aimed at explaining the internal medicine and surgery residents' perceptions of mentors as role models.

Methods: This qualitative (content analysis) study was carried out using purposive sampling and conducting semi-structured interviews with 18 medical residents (internal medicine and surgery departments) at Iran University of Medical Sciences. The resulting data were analyzed using inductive qualitative content analysis.

Results: Based on the results of the analysis of the transcribed interviews, 60 initial codes, 31 subthemes, and 5 main themes were identified. The dimensions of the mentor's role modeling were as follows: structural, executive, managerial, ethical, and scientific.

Conclusion: Role modeling is a very effective learning method, especially for medical students. Role modeling in clinical learning environments seems to be valuable to facilitate students' learning. Using the role of clinical instructors as an educational model is one of the important ways of teaching professional ethics in clinics.

Keywords: Clinical Teaching, Role Modeling, Medical Teacher, Medical Education

Conflicts of Interest: None declared

Funding: This study was conducted with the financial support of the Medical Science Education Research Center (CERMS) of the Iran University of Medical Sciences.

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Cite this article as: Ramezani Gh, Hashemi A, Pourbairamian G, Norouzi A, Kavarizadeh F, Hossinzadeh Z. Explaining Internal Medicine and Surgery Residents' Perceptions of Mentor as a Role Model: A qualitative Study. *Med J Islam Repub Iran.* 2022 (6 Aug);36:88. <https://doi.org/10.47176/mjiri.36.88>

Introduction

Modeling social and cultural patterns and behaviors, namely, model orientation is used as one of the important learning strategies by students and assistants. Clinical professors believe that modeling in clinical education is the most effective and appropriate method through which pro-

fessional experiences and attitudes can be conveyed to students (1). The greater the students' understanding of teaching and learning, the more goal-oriented their actions will be and the more compatible they will be with each other (2). Modeling is considered one of the main components of the teaching and learning process. Should clinical mentors

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↑What is “already known” in this topic:

Despite the well-known importance of mentoring, little is known about the specific mentoring behaviors that lead to positive outcomes.

→What this article adds:

Modeling is an important way to convey the values of the medical profession, which is explained by the superior patterns of professional behavior for future physicians. Modeling can lead to the development of humanism and professionalism in the field. Modeling is also known as one of the effective ways to promote professionalism in the field that can shape the professional personality of students.

turn into competent role models they need to be aware of their behaviors and wide a range of activities and attitudes observed and mirrored by students. Observing clinical instructors, students learn more about how a health professional acts and behaves and copy what they see (3). Mentors are often oblivious to the effect their function as role models has on the development of student's skills, competence, and professionalism. However, faculty members may be more knowledgeable when it comes to demonstrating good clinical care. Nonetheless, students may see many other aspects of clinical practice and behavior besides clinical care as well. Mentors' behaviors, perceptions, and performance are viewed as benchmarks (4). The term model-orientation was first used by a sociologist named Merton in 1950 in a study on the socialization of medical students. Modeling occurs when a novice observes what an abler individual is doing (5), which is one of the basic concepts of social learning theory developed by Bandura. In accordance with Bandura's approach, which is a behaviorist one, humans have the potential of copying a role model and achieving vicarious reinforcement. They can observe other people's behaviors and understand the consequences of their behaviors without having to directly experience all the behaviors themselves (6). This enables them to figure out which behaviors to copy and which behaviors to avoid by vicarious reinforcement. He asserts that people can learn and copy behaviors through observation (7). Therefore, cognitive processes make a great contribution to reinforcement programs, influencing how people think about behavior. Therefore, as one of the influential parameters, teachers (professors) can improve the quality of education. Students, as consumers, are the beneficiaries of the education product. Given that obtaining customer feedback is considered one of the essential steps for improving the quality of services, it is necessary to address this issue thoroughly to shed light on how students perceive the role of teachers as role models (8). A mentor needs to perform 12 essential functions, one of which is that of a role model. Perry argues that models act as a catalyst as they teach while advising, guiding, and paving the way for the promotion of others. Such mentors try to bring about transformational changes and encourage critical thinking by providing exemplars of behaviors (5). This qualitative study is aimed at explaining the internal medicine and surgery residents' perceptions of mentors' (professors)'s role modeling at Iran University of Medical Sciences. The following are some reasons why the qualitative study was selected to address the following research question: Qualitative studies provide researchers with deeper and richer data, allowing mentors to become familiar with their role model and evaluate this role and, if necessary, try to correct it. Moreover, research should be conducted on how values held by clinical teachers (instructors) affect students and residents.

Methods

Research Design and Setting

Using an interpretivism paradigm, this study adopts a qualitative approach and a content analysis method. The themes representing internal medicine and surgery resi-

dents' perceptions of mentors' roles were extracted by processing the qualitative data obtained from semiconducting interviews with the participants. The descriptive-analytical research not only shows what the problem is but also explains how and why the problem exists (9). Interviews were conducted in a clinical or a university setting at the time already agreed by the participant to obtain information. The selection process continued until the emergence of no new data in the interview process; that is, data collection continued until reaching the theoretical saturation of the data. Finally, 18 residents qualified as the participants in this study. Data were collected, recorded, coded, and categorized into major concepts over 3 months. Finally, the findings were referred back to the participants for validation, who confirmed the reliability of the results. The peer-reviewing method was used to verify the credibility of the findings. This involved an in-depth examination of the interviewees' responses transcribed by 2 other researchers to ensure individuals' perceptions of the veracity of the interviewees' interviews. The aim was to ensure people's perception of the interviews, with the results showing that the data were acceptable. Research experts were consulted during the data analysis process to evaluate the analysis process and the acceptability of data analysis. An attempt was made to take into account all the items of a qualitative study in accordance with the consolidated criteria for reporting the qualitative research (COREQ) Checklist. In this study, informed consent was obtained from all the interviewees who were assured that they could quit at any time during the study if they wished. Interviews were recorded with a voice recorder, and the interview questions were as follows: "How do you perceive the role model? And what are the dimensions and components of the mentor's role model? Due to the spread of Covid-19 and the resulting transportation limitations, researchers and interviewees agreed to conduct 5 interviews by telephone. The researchers were committed to complying with the principle of confidentiality. They also guaranteed that all recordings would be entrusted with them in a safe place and all recordings would be deleted after the completion of the research and the transcription of the interviews.

Sampling

Samples of residents were selected, using the purposive sampling method, and the interviews continued until reaching theoretical saturation.

Inclusion Criteria: Internal medicine and surgery residents' of the second semester and beyond, willingness to participate in the study.

Exclusion Criteria: Residents' discontent with the study, as well as absences from the ward owing to illness or other reasons.

The questions of the interview were as follows:

- What is your understanding of the role model of the instructor?
- What have you learned from your instructors in addition to formal training?

Data Analysis

The inductive qualitative method was used to analyze the

interview data. Essentially, it is necessary to use the inductive approach, also known as conventional content analysis, when there is inadequate information about a phenomenon, and the researcher seeks to provide the necessary background knowledge in this regard. Such a method of content analysis aims to reduce information, providing a more accurate description of a topic. Inductive research is aimed at helping obtain research findings by focusing on the dominant and common themes in the data. This means that by referring to the study data, the researcher summarizes the data, from which he/she finally extracts the main concepts and themes related to the research topic. The qualitative content analysis starts from the scattered text data using an inductive approach, and it gradually moves on to more abstract levels of text by extracting the implicit concepts (10).

Results

A total of 18 participants (10 males and 8 females) participated in this study. The mean age of participants in the study was 30.10 ± 5.26 years, ranging from 23 to 37 years. Also, 13 of them were married and 5 were single. The sample was made up of 11 internal medicine residents and 7 surgery residents. The 60 first codes resulted from the examination of interview material, which included 31 sub-themes or categories and 5 primary themes or aspects.

The 5 main dimensions identified were personal, managerial, executive, scientific, and moral personality. The personality component has 6 subcategories, including functional pattern, positive attitude, self-confidence, counselor and supporter, and appearance and love of the profession. The scientific component included 4 subcategories, including scientific mastery, transfer power, interest in teaching, and evaluation. The executive component had subcategories, including facilitating the students' professionalization process, teaching methods, availability, facilitator, Shiva lecture, learner assessment, interpersonal skills, and classroom management. Ethical components also included professional commitment, patient care, learning-based practice, feedback, professional judgment, patient understanding, and attention to patient comfort and medical ethics.

The following are some extracts of the interview transcriptions, which confirm [Table 1](#).

Personality (Sense of empathy, honesty, good interpersonal relationships, love and interest in the profession, and immediate effort for the profession and education)

".... In my opinion, when a mentor arrives on time and regularly in the mornings or grand rounds, teaching the residents eagerly and explaining the cases to them interestingly and clearly, the residents are motivated to learn more and to study the night before"(Interviewee No. 6)

Scientific

In this interview, the participants referred to the scientific knowledge of the teacher in the teaching process:

".... for sure, the mentor's level of knowledge and experience is very important to us as residents. Moreover, it is equally of great importance how a mentor (instructor) can convey this knowledge and information well and thoroughly so that learners get the most out of a clinical training

session. All that a mentor does and says while explaining the disease case is considered by the residents who seek to sort of look at him/her as a role model regarding the clinical experiences. Therefore, certainly considering instructor (mentor) as a whole person is a rich educational resource." (interviewee No. 14).

Managerial

"An instructor (mentor) demonstrates his/her management skill by answering the residents' questions thoroughly in around as well as involving the residents in learning; that is, he/she makes use of critical thinking or group discussion methods or PBL and gives timely feedback. This is because education is somewhat challenging in a real setting. On the other hand, seeing my mentor's management and leadership skills besides his/her mastery, I was a resident, become more interested in learning and continuing my work." (Interviewee No. 3)

Executive

(Use student-centered teaching methods, give appropriate feedback and create opportunities for reflection by the student)

Simple and eloquent expression, organizing content appropriately for students and asking creative questions, and involving them in issues and time management in the classroom are important factors in choosing a good teacher for students.

"The instructor (mentor) needs to modify both the teaching methods and evaluation methods given the conditions of the residents, forging an appropriate relationship with both the patient and the residents Thanks to their great knowledge and experience, some mentors have more self-confidence. This enables them to better convey their experiences. Naturally, residents feel more comfortable, interacting with these mentors and they learn more from them since you can rest assured that the instructor will answer the questions. This, particularly, applies to the instructors who are committed to ethics and professionalism towards patients, residents, hospitals, and university. This factor also makes him/her more prominent as an educational leader". (Interviewee No. 7)

Ethical Professionalism

Observance of professional ethical standards and adherence to them was mentioned by several survey participants as an important attribute of the teacher.

Discussion

This study aimed to investigate the components of the role model of instructors from the perspective of interns and residents of internal medicine and surgery departments in hospitals affiliated with Iran University of Medical Sciences. Unlike the main research in this field, which has mainly tried to study the role model of instructors by using quantitative methods and questionnaires, this research tried to recognize the components of the educational role model using a qualitative method and content analysis.

The results of this study showed that from the perspective

Table 1. The main components and subcomponents of mentors' role modeling

	Acting as a functional model	Acting as a role model
Personality	Positive attitude	Having a positive attitude toward education and learners Being open to learners' ideas
	Self-confidence	Implementing the educational decisions categorically Appropriate reactions and treatment in the face of challenges in the clinical class
	Councilor and supporter	Believing in collaboration both theoretically and practically Supporting the learners Confidentiality
	Appearance	Decent appearance and neat clothing Observing the dress code, which shows respect for the mentor
	Loving one's profession	Highly motivated to teach and interested in the major Encouraging the students to learn and teach effectively
Scientific	Having in-depth knowledge of one's field	The instructor updates his/her knowledge Using dynamic teaching methods
	Skilled at conveying knowledge	Eloquence Highly skilled at conveying the knowledge to learners
	Being interested in teaching	A punctual and regular presence in the class Having a course plan (syllabus) Interested in clinical teaching
	Fair evaluation	Being aware of academic rules and following them Making use of cutting-edge evaluation methods Evaluating the students based on their previous performance rather than in comparison with others
Executive	Paving the way for students' professionalism	Contributing to the progress and development of learners
	Teaching Method	Effective management of time at the class Making use of teaching aids and simulators Teaching how to put the clinical theories into practice The ability to use a wide range of teaching methods
	Accessible	Being accessible to learners at clinical sections and university Responding to students
	Facilitator Eloquence	How he conveys knowledge and skill Eloquent presentation
	Assessment of learners	Making use of diverse, proper tools for evaluation Outlining the evaluation method at the beginning of the semester Taking into account the individual differences
	Inter-personal skills	Forging good relations with learners Effective engagement with patient and the companions and ward personnel
	Class Management	Proper time scheduling Using course description
Managerial	Leadership	Influencing the learners Influencing colleagues
	Being a good supporter	Flexibility Helping the learners to overcome their challenges
	Committed to being competent Committed to inclusive growth understanding the learners	Commitment to being self-empowering Holding oneself accountable for the learning consequences of learners Having respect for teamwork Having Mutual understanding
	Teaching in clinical conditions	Having a firm belief in clinical education Effective clinical education Acting as a link between education and clinical knowledge Skilled at the implementation of the procedures
Ethical professionalism	Professional commitment	Being accountable Attaching importance to self-growth
	Patient caring	Empathy
	Learning-based performance	Considering the learning outcome for learners
	Giving Feedback Professional judgment	Giving feedback to learners and patients Administering justice and being fair Making use of the qualitative method for evaluation
	Understanding the patients and caring for their comfort Following medical ethics	Spirituality Caring for patient Ethical commitment

of the internal medicine and surgery residents, the instructors' role model has 5 dimensions—personal, managerial, executive, scientific, and ethical. Each of these dimensions

also has several subcomponents. For example, the ethical dimension can be subdivided into the following components: professional commitment, patient care, learning-

based performance, the role of feedback, professional judgment, understanding patients and considering patient comfort, and sticking to medical ethics. As a result, policymakers and educational department heads can better plan by recognizing these dimensions. Accordingly, they can consider these dimensions when it comes to recruiting faculty members or they can empower the instructors by reinforcing these dimensions, which leads to a more effective contribution of teachers' role modeling and implicit curriculum. Moreover, based on the results of this study, instructors (teachers) should consider these features in planning and organizing their educational activities involved in the educational and clinical environment. They should seek to enhance their efficiency, knowledge, and experience and help to motivate students to identify their strengths and weaknesses. It is suggested that appropriate programs be presented to keep instructors updated on teaching topics and effective teaching methods, as well as helping them to know and use new evaluation methods, communication skills, and the need to achieve excellence in higher education institutes such as medical education centers, which shoulder the training responsibility. Education is the main function of universities, with instructors considered the key and effective components in the education process (11). A good teacher characterized by appropriate and desirable characteristics can contribute to the promotion and prestige of an educational organization (12-14). "Besides the core characteristics of teaching, that is, commitment, competence, leadership, and interpersonal skills, teachers should function as a role models as well," says Wright. Serving as a role model manifested by good behavior is one of the important functions of educators in the clinical department. A competent leadership role in teaching is characterized by the ability to motivate, decision-making skills, modeling, and counseling. Role modeling or a teaching style that turns the teacher into a role model is the essence of the teaching process and an effective teaching method in medical education (6). In this method, the mentor tries to set the stage for the exposure of the learners to the exemplars of desirable behavior and action so that they are led to follow and copy the model (7). Multiple studies have shown the importance of role modeling in professional development (9). Focusing on the value of observational learning entails giving effective feedback for role modeling, which enables students to translate observational skills/behaviors into their skill and behavior. Given the value of role modeling in promoting clinical learning, it is recommended that mentors' training courses be established (10). In their study, Mosallanejad et al (2014) concluded that students have repeatedly attached great importance to mentors' role modeling and to modeling their characteristics and traits. Mentors' role modeling involves constructive criticism and dealing with the unknown. In this study, the role of the teacher's engagement as a model as well as the conflict management in clinical wards was considered as an important factor eliciting educational and moral performance (11). These findings were consistent with the results of the present study. Khodayarian et al. concluded in a study that an ethically competent thesis advisor is supportive, a good

listener, and professionally committed. Furthermore, facilitating the professionalization of nursing students is an important function of the mentor in this regard (12). These findings are consistent with the results of the present study. According to Sharifnia et al, a good instructor is characterized by good scholarship and individual personality. The scholarship was divided into the following categories: being thoroughly knowledgeable in one's field of expertise, skilled at conveying the knowledge, interest in teaching, assessment, and teaching methods. The individual personality was subdivided into the following categories: personal characteristics, self-confidence, and appearance (13). These findings are consistent with the results of the present study. In a study, Mariani found that the influence of a model on the social and cultural patterns and behaviors of students, that is, modeling is one of the main learning strategies used by students (14). These findings are consistent with the results of the present study. A study was conducted by Mogan and Knox to identify and compare the characteristics of the "best" and "worst" clinical instructors from the perspective of students and faculty members. The results showed that both teachers and students note that the best clinical instructor is characterized by his/her performance as a "functional model," which was described as the most important characteristic (15). These findings were consistent with the results of the present study. In their study conducted in the United Kingdom, Kelly et al showed that using clinical staff as the facilitators of clinical education and as the role models for novice nurses improved the mastery and clinical skills of nurses (16). In a qualitative study conducted by Wright, the model-specific characteristics were categorized into the following: individual characteristics, including interpersonal skills, positive attitudes, commitment to being competent, and leadership, and teaching characteristics", including mutual understanding between teachers and learners, promotion of specific teaching philosophies and methods, and commitment to learner growth. Having a friendly relationship with learners and an explanation of the philosophy of education are other characteristics of a role model. Those who advocate mmodelingemphasize that learning must involve student-teacher engagement and be student-centered. Wright's study has explained the characteristics of competent role models, which can be considered in explaining the model-oriented process as demonstrated by a section of this study (17). These findings are consistent with the results of the present study. In a study by Ballmer et al, modeling was found to be an implicit and voluntary learning strategy; residents learn from their mentors how to talk and how to think about issues (18). In a study, Cheraghi (2009) concluded that improper educational and clinical function of role models was found to be one of the factors contributing to the creation of a defective cycle involved in the psychological aspects of knowledge transmission (19). Glover and Bruning, on the other hand, believe that good teachers always function as good role models for their learners, teaching them how to work collaboratively and effectively, and tailoring their teaching methods to them. These findings are consistent with the results of the present study. These findings are consistent with the results of the present study. Based on the

findings of a qualitative study conducted in Hong Kong in 2010, interest in teaching was found to be the primary factor influencing students' motivation to learn, and it was directly correlated with students' motivation for learning (20). In addition, Latif, Thompson, Lukabi, and Lagan noted that a competent teacher should have a passion for teaching and an interest in teaching in their study (21-24). These findings are consistent with the results of the present study. According to Oshi et al, mentors believe that acting as a role model for students is the most important characteristic of a competent teacher (25). To the participants of this study, the decent appearance of the teacher is another characteristic of a good teacher. The students acknowledged that the instructor's appearance was a manifestation of his/her discipline. The instructor's decent appearance will contribute to better learning for the student, with students attending the class with more passion and interest, which is similar to the findings of others (26-28). The ability to form a proper relationship with clinical medical personnel, patients, and students in the classroom and hospital was also identified as a characteristic of a competent mentor in the current study. In other words, the mentor's ability to establish interpersonal relations will have a positive effect on students' mental perception. Adopting a supportive and advisory role in the clinical field is another dimension of the mentors' role modeling. Given the challenges that arise in the hospital environment as well as the lack of sufficient mastery and experience on the part of students, the supportive and counseling role of the instructor is very vital. This finding is consistent with the results of Brown's study (29-31). Kikakawa (2013)'s study in Japan showed that students defined a good teacher as one who is characterized by having clinical experience and a passion for knowledge of the subject (32). Oyeyemi maintains that clinical mentors and the quality of their work are one of the most important factors influencing clinical education. The learning efficiency during the internship is influenced by the behavior of clinical mentors. Clinical learning is at a maximum when a student is initially inspired by his or her clinical mentor and is motivated enough to learn, and then is taught (33-36). Clinical education is so important that William Osler said 100 years ago, "Medicine is taught at the patient's bedside, rather than in the classroom." (37). In a study, Tamara compared the hospital residents and faculty members' views regarding the characteristics of an effective clinical mentor. The results yielded 3 characteristics, namely, clinical competence, nondiscrimination, and role model. These characteristics were shared by 2 groups. Finally, findings of physicians' attitudes toward clinical learning showed that better education in the internship environment signals better learning, leading to better patient care (38-46).

Limitations of the Study

One of the limitations of this study is that the results cannot be generalized to other universities or departments due to the small sample size in qualitative studies. It is suggested that similar studies be conducted in other universities and other departments to generalize the results with more confidence.

The present article is an outcome of a research project conducted by the Medical Education Research Center at Iran University of Medical Sciences with identification code 16877 and ethics code IR.IUMS.REC.1398.1194.

Conclusion

Given the importance of resident education, we need role models that have the characteristics of a mentor because students emulate both in education and in the clinical setting; thus, we need to have good role models who are both functional and morally good role models, and this will not be possible unless we train the right mentors. Therefore, role models and mentors in any profession, especially medicine, should be careful about their performance in all areas, especially in education. The components extracted from the research will help educational administrators to train mentors. Role modeling is a powerful learning tool, particularly for medical students. One of the most essential approaches to teaching professional ethics in the clinic is to use clinical educators as educational models.

Acknowledgment

The authors would like to express their deep gratitude to all the participants in this research project.

Conflict of Interests

The authors declare that they have no competing interests.

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