Review Article

Professionalism in medical education: An evolutionary concept analysis

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Abstract

Background & Objective: Teaching professionalism is one of the foundations of professional development for medical students. The present study aimed to explain the antecedents, attributes, and consequences of professionalism in medical education.

Material & Methods: In this study, Rodgers' evolutionary concept analysis approach was used. The search was performed using the keywords "professionalism", "medical education" and similar words in PubMed, Scopus, Scientific Information Database (SID), and Magiran databases and search engine Google Scholar. Literature published in English and Persian was included in the study. 59 articles were analyzed using the content analysis approach and attributes, antecedents, and consequences of professionalism in medical education were identified.

Results: The attributes of professionalism in medical education were identified in "the emergence of the professional role models" and "the institutionalization of the culture of professionalism in education". The "manner" and "competence" of professors and "university policy in achieving professionalism" were determined as an antecedent, and the consequences for health stakeholders in "community" and "student" dimensions were defined as the consequences of professionalism in medical education.

Conclusion: Professionalism in medical education involves the presence of professional role models and the establishment of a culture of professionalism within educational environments. This includes professional character and competencies and moral qualities such as tolerance, fairness, and respect for human values. The antecedents of professionalism include the manner and competence of professors and the university's plans to achieve professionalism. The consequences of professionalism in medical education include improved health outcomes for the community, enhanced patient satisfaction, and the development of positive attitudes and behaviors in students. Professionalism in medical education aims to train professional students and provide high-quality services to ensure society's health.

Keywords: professionalism, medical professionalism, ethics, medical education, professional ethic

Introduction

Professional development in medical education is built upon the foundation of professionalism.
(1, 2). Professionalism in the medical field involves values, behaviors, and relationships that establish trust, including ethics, empathy, communication, and collaboration, which students and practitioners must consistently demonstrate (3). Universities of medical sciences have a long history of educating specialized aspects of medicine. However, the teaching and development of professionalism in the education of medical students is still in its infancy (4). In medical education, in addition to teaching clinical knowledge and skills in any profession, attention should be paid to developing and strengthening values, attitudes, moral norms, and social skills (1, 2, 4). Therefore, one of the missions of medical universities is to educate professional students (2, 4-6). Professionalism is one of the main competencies students should acquire during

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their studies (7, 8). Professional identity development, professional behavior in patient interaction, altruism, and cultural competence are among the dimensions of professionalism (9-11). The quality of health services depends on employees' level of professional behavior (12). Professionalism in the medical profession increases patient safety and satisfaction, reduces staff occupational burnout, and community trust in the health system, and promotes community health (13-16). Conversely, non-observance of professionalism by employees has negative consequences. The results of a review study showed that patient dissatisfaction and complaints are related to employees' unprofessional behavior (17). The results of some studies indicate that medical sciences students who had unprofessional behaviors during their studies continue this trend in their future performance (18, 19). Therefore, to improve the health system's performance in providing quality services, universities should pay more attention to professional education to train professional staff (20). On the other hand, the rapid growth of medical knowledge and skills, increasing attention of the media to health care issues, multidisciplinary teamwork in health care, changes in the attitude of doctors, and the commercial view of health are among the factors that cause pay more attention to professionalism (21). In recent years, healthcare professionals have become more active in clinics, offices, and home care. Usually, there are no special organizational goals in these places and they are not under supervision. Therefore, healthcare professionals must adhere to the principles of professionalism, and this training is achieved during education.

Professionalism education in medical sciences requires understanding this concept. Professionalism is a complex and multidimensional structure whose definition changes over time and in context (22, 23). A review of studies shows that professionalism is specifically defined in some fields and clinical environments (13, 24, 25). Despite the importance professionalism in medical education, this concept and boundaries are not explicit for medical education to understand. More clarification of the concept of professionalism in medical education helps to review policies, standards, codes of ethics, and professional values.

Origin and dictionary definition of professionalism in medical science

Merriam-Webster's Dictionary defines the word professionalism as "the conduct, aims, or qualities that characterize or mark a profession or a professional person" (26). Professionalism is also defined in the Longman Dictionary as "the skill and high standards of behavior expected of a professional person" (27).Professionalism is a word whose meaning is not defined by the dictionary alone but is in the essence of the medical profession and refers to what a professional does (28). Professionalism is not a new concept, as it has existed throughout medical history in the form of medical oaths (29). A Roman physician named Scribonius defined professionalism as "the commitment to compassion or clemency in the relief of suffering" (20). The Royal College of Physicians defined Medical professionalism as "a set of values, behaviors, and relationships that underpins the trust the public has in doctors" (30). In some definitions, the priority of patient well-being, respect for patient independence, and the promotion of social justice in the health care system are considered as the three basic principles of professionalism (5). Some studies have found it necessary to commit to ten professional responsibilities in professionalism to fulfill these three principles. These 10 professional responsibilities include commitment to professional competence, commitment to honesty with patients, commitment to secrecy, commitment to maintaining proper relationships with patients, commitment to improving the quality of care, commitment to improving access to care, commitment to justice in the distribution of limited resources, commitment to the use of scientific and technological knowledge, commitment to maintaining trust by managing conflicts of interest, commitment to professional responsibilities (5, 20). Although there are several definitions of professionalism, there is no comprehensive definition of professionalism in medical education. The cultural context of any society influences the definition of professionalism. Studies by Lee (25), Dehghani (13), and Ghadirian (24) have provided various definitions of professionalism in medical science. Professionalism is defined as the conduct, aims, or qualities that characterize a profession or a professional person. It has existed throughout medical history, with definitions ranging from the commitment to compassion to the promotion of social justice. Some studies have identified ten professional responsibilities to fulfill these principles, including commitment to professional competence, honesty, secrecy, maintaining proper relationships, improving care quality, access to care, justice in resource distribution, and the use of scientific and technological knowledge. However, there is no comprehensive definition of professionalism in medical education, as the cultural context of any society influences its definition. Dehghani et al. identified professionalism in nursing with three basic elements: principles of care, communication, and ethics (13).

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According to Ghadirian et al., professionalism in nursing is defined by three cognitive, attitudinal, and psychomotor attributes (24). Lee et al. identified professional nursing characteristics as advanced nursing knowledge, excellent skills, patient-based care, ethics, responsibility, cooperation, independence, situational judgment, and problem-solving (25). In these studies, the concept of professionalism has been studied only in nursing, and other fields of medical sciences have not been considered. Therefore, a comprehensive concept analysis is necessary to explain professionalism in medical education.

The rapid growth of medical knowledge and skills, increasing attention of the media to health care issues, multidisciplinary teamwork in health care, changes in the attitude of doctors, and the commercial view of health are among the factors that cause more attention to professionalism (21). Since there is no agreement on the definition of professionalism in medical education. Explaining the concept of professionalism can provide a basis for the development of this competence in medical students. The present study aimed to explain the antecedents, attributes, and consequences of professionalism in medical education.

Material & Methods

The present study was based on Rodgers' evolutionary concept analysis and aimed to clarify the concept of professionalism in medical education and determine its antecedents, attributes, and consequences. Rodgers' concept analysis method explores the evolution and contextual impact of concepts. This approach focuses on a concept's context, surrogate terms, antecedents, attributes, examples, and consequences. Rodgers introduces a cyclic model that can adapt to the constantly evolving nature of ideas. The research process is characterized by its non-linear and flexible nature, where six preliminary activities can be conducted simultaneously. The activities encompass understanding focus, selecting a context, collecting data, analyzing information, identifying an example, and forming hypotheses and potential outcomes. Rodgers focuses on analyzing and interpreting raw data within a profession's social and cultural context (31). In this study, professionalism in medical education was identified as the desired concept. Then, articles in professionalism in medical sciences and medical education were reviewed in various databases.

Literature search

After identifying the concept of interest, the most important step is identifying and selecting the appropriate realm (setting and sample) for data collection (31). At this stage, to gain a deep understanding of the concept of professionalism in medical education, the search was conducted in databases including PubMed, Scopus, Google Scholar Persian language databases, Scientific Information Database (SID), and Magiran. Based on the indices of the various databases, the search for the terms of professionalism and medical education was done using OR and AND operators. Articles were searched in November 2020 and updated in May 2024 in the PubMed, Scopus databases, and Google Scholar. Records were managed using EndNote software to exclude duplicates (**Table 1**).

Table 1. Search strategy

Data base	Search strategy	Language	Number
PubMed	(Professionalism [MeSH Terms] OR Professionalism [Title/Abstract]) AND (Education, Medical [MeSH Terms] OR medical education [Title/Abstract]) AND (Cross-Sectional Studies [MeSH Terms] OR Cross-Sectional Study [Title/Abstract] OR Qualitative Research [MeSH Terms] OR Qualitative [Title/Abstract] OR Systematic Reviews as Topic [MeSH Terms] OR systematic review [Title/Abstract] OR review [Title/Abstract])	English	975
Scopus	TITLE-ABS-KEY (professionalism) AND TITLE-ABS-KEY (medical AND education) AND TITLE-ABS-KEY (cross AND sectional AND study) OR TITLE-ABS-KEY (qualitative AND study) OR TITLE-ABS-KEY (systematic AND review)	English	1052

Inclusion criteria and data extraction

The inclusion criteria of articles were access to Full Text Persian or English articles and having a cross-sectional design, qualitative research, and systematic review. These three methods were selected to ensure accurate identification of the concept while preserving its defining attributes in existing literature. Searching for articles by one researcher and reviewing studies in terms of thematic relevance was done by both researchers (NH & FGH) and independently. In the initial search, the total number of documents obtained was 2027. A total of 881 articles were found in the search for gray literature across

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SID, Mag Iran, and Google Scholar. After reviewing the titles of the articles in terms of thematic relevance and removing duplicates, 476 articles remained. Both researchers reached an agreement by discussion and consensus if they had any doubt in identifying eligible articles. The abstract of these articles was then reviewed. By removing irrelevant items, 183 of the articles reached the full-text evaluation stage. At this stage, 124 articles were excluded from the study due to lack of access to Full-Text articles in Persian or English, having clinical trial design, gray articles, and low-quality articles.

Quality assessment

The quality of cross-sectional articles, systematic review articles, and qualitative articles was assessed with the STROBE (Strengthening the Reporting of Observational Studies in Epidemiology) checklist, PRISMA (The Preferred Reporting Items for Systematic Reviews and Meta-Analysis), and CASP (Critical Appraisal Skills Program) checklist. These checklists facilitate the critical appraisal of studies. Finally, the full text of 59 articles was thoroughly analyzed (**Figure 1**). The quality of the studies was checked by two researchers (NH & FGH) independently. Any disagreements were resolved by discussion and consensus.

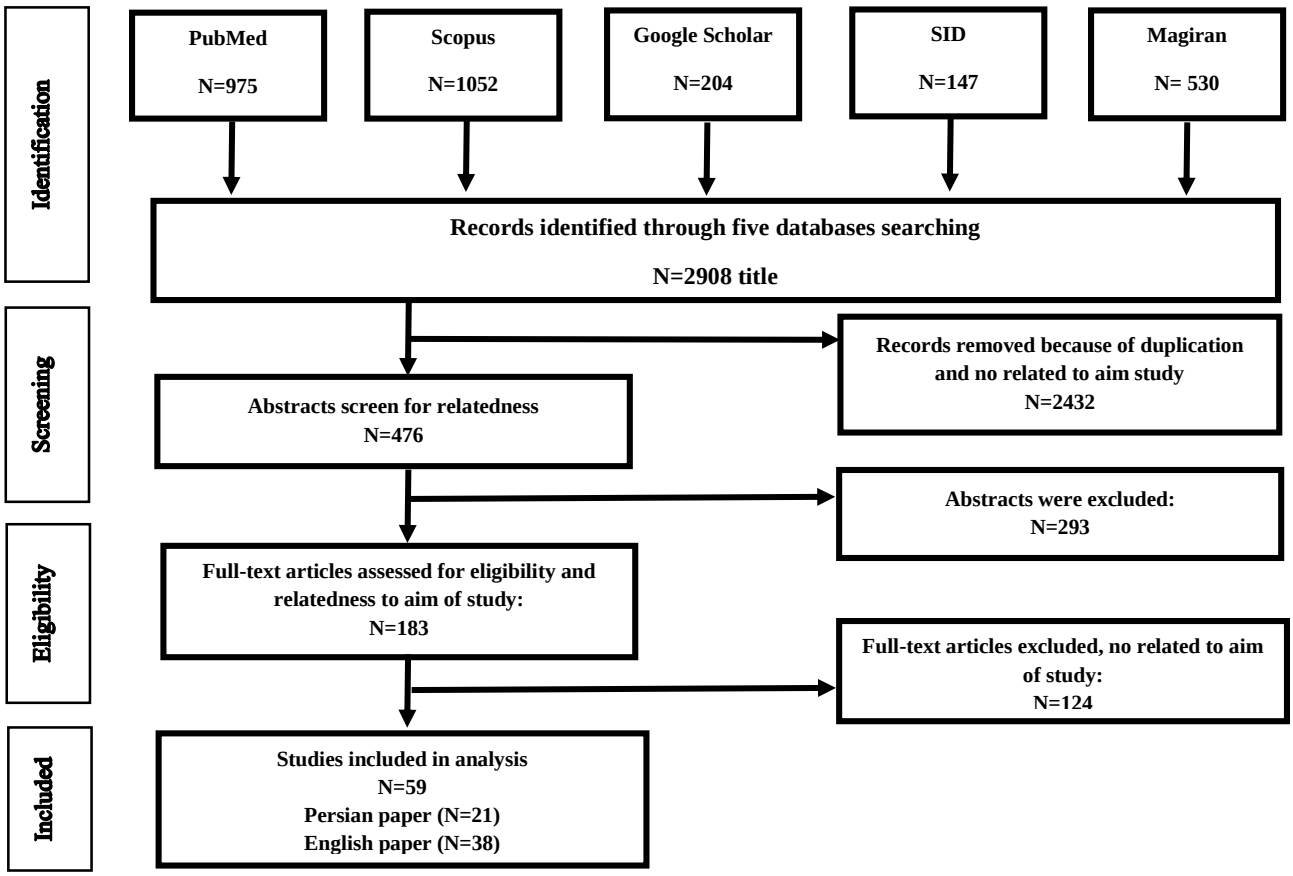

Figure.1. The flowchart extracting articles

Data analysis

According to Rogers' concept analysis method, content analysis is recommended for analysis, so selected studies were analyzed using this approach (32). This method assists in describing and interpreting textual data through systematic data coding. In order to enhance our understanding of the concept, we thoroughly reviewed the studies that were identified (33). We extracted relevant information about attributes, antecedents, consequences, contextual basis, related concepts, and alternative words. In each section, the researcher read the data multiple times to extract key points and labels for clear descriptions of each aspect of the concept. The concept was analyzed using induction, and themes were discovered (33). To ensure the credibility of components in the concept analysis, NH & FGH conducted

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independent assessments. The authors discussed incorporating relevant study analyses into the concept analysis, aiming to share findings and reach a consensus on subsequent actions, resolving disagreements, and achieving consensus.

Result

From the analysis of 59 articles, 572 primary codes were extracted. Surrogate and related terms were identified. The primary code was divided into seven categories (**Figure 2**). These seven categories were assigned to antecedents, attributes, and consequences (**Table 2**).

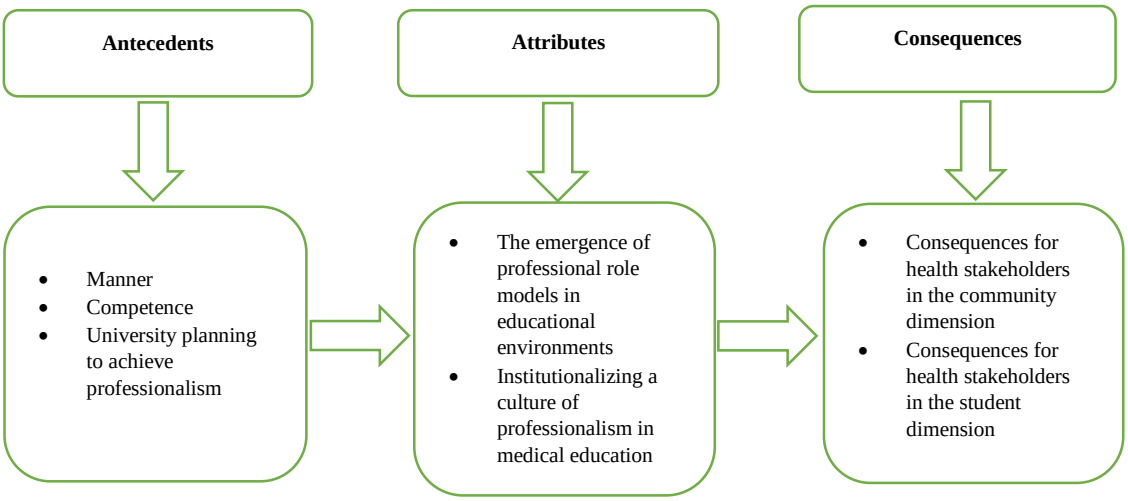

Figure 2. Antecedents, attributes, and consequences of the concept of professionalism in medical education

Table 2. The antecedent, attribute, and consequence of professionalism in medical education

	Categories	Subcategory
Antecedent	Manner	Personal characteristics (7, 36, 40-46)
		Communication skills (7, 40, 42, 47-51)
	Competence	Adherence to professional ethics (16, 23, 36, 40, 45, 46, 48, 50-54)
		Educational skills (36, 42, 48, 55, 56)
	University planning to achieve professionalism	Attention of officials to the content of the hidden curriculum (1, 46, 56, 57)
		Attracting ethical and professional professors,retraining professors (58)
		Developing guidelines and ethical codes of professionalism (59)
Attribute	The emergence of professional role models in educational environments	Virtue (41, 44, 56, 61-63)
		Excellence (16, 40, 41, 44)
		High moral sensitivity (38, 45)
	Institutionalizing a culture of professionalism in medical education (37, 45, 64-67)	
Consequence	Consequences for health stakeholders in the community dimension (2, 38, 42, 53, 64, 65)	
	Consequences for health stakeholders in the student dimension (36, 38, 42, 51, 53, 57, 65, 68-70)	

1- Surrogate and related terms

Related terms cover only a part of the relations and dependencies of the main concept. Therefore, it does not have all the attributes and characteristics of the concept under study (31). The most common terms related to professionalism identified in the study were professional ethics (34-38) and professional behaviors (39).

Surrogate terms mean expressing the concept with words and expressions other than the concept chosen for the study (31). Medical professionalism was identified as the most common alternative term (2, 6, 40).

1-1 Antecedents

Antecedents are the prerequisites of the concept under consideration and affect the occurrence of the concept

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(31). Antecedents in this study, the manner and competency of professors and university planning to achieve professionalism were identified (**Table 2**).

1-1-1 Manner

The manner of professors was identified in two subcategories personal characteristics and communication skills.

The personal characteristics of professors in medical education include having some personality traits such as compassion for students and colleagues, self-confidence (36), reliability (41, 42), spontaneity (36, 40), leadership (40, 42), creativity (42), self-management (7, 41), neat and behavior (36, 43), cooperation with others (40, 41, 44-46) flexibility (7, 40), and criticism (36). The professor's communication skills were considered another subcategory of the professor's character. Honesty about students, colleagues, and patients (42, 47-49), body language (40, 50) respect in interactions (51), and maintaining the dignity of the student and the patient in communication (7, 40, 47), were identified in the field of communication skills of the professor in medical education.

1-1-2 Competence

Professor competence was another essential dimension for establishing professionalism in medical universities, which was characterized by two subcategories adherence to professional ethics and educational skills.

Findings showed that adherence to professional ethics in professors of medical universities is characterized by respect for autonomy (16, 50, 52-54) confidentiality (36, 40, 50, 51), non-maleficence (36, 52), and fairness in behavior and resource allocation (40, 52). Also, the results showed signs of the professor's adherence to professional ethics, responsibility to the student, colleagues, and the community (23, 50, 52), accountability to the community and profession (45, 46, 51) organizational commitment, and responsibility to the observance of ethical principles (46, 48, 50, 52).

Having educational skills was another competency of professional teachers. Familiarity with the principles of teaching, classroom management skills, having high knowledge, expertise, and mastery of the subject of teaching, having critical thinking, using new resources and the content required by students, using educational methods such as inter-professional education (55), integrated approach, mentorship (56) and practical experiences (42) were mentioned as appropriate skills for teaching professionalism in medical education. The use of evaluation methods following the educational objectives, providing appropriate feedback, and evaluation based on the degree of observance of professional and ethical principles of students in the clinic (36, 48) were identified as the necessary educational skills of professors.

1-1-3 University planning to achieve professionalism

University planning to achieve professionalism, as an antecedent for professionalism, was identified with the following subcategories: attention of officials to the content of the hidden curriculum, attracting ethical and professional professors, continuous education professors, and developing guidelines and ethical codes of professionalism. Many studies have emphasized the use of formal and hidden curriculum in teaching professionalism. The hidden curriculum affects the development of students' professionalism more than the formal content (46, 57, 58). A hidden curriculum is formed under the influence of students' communication and interactions with faculty and staff, which can effectively develop professionalism in students (46, 57). Therefore, managers' attention to the hidden curriculum can play an important role in achieving professionalism in education by attracting qualified professors (1). Teaching professionalism through the formal and hidden curriculum with different educational methods requires the empowerment of professors by holding continuous pre-service and in-service education courses so that professors can grow in the field of professionalism and teach students (59). The existence of ethical guidelines and ethical codes for professional and ethical performance in all fields of medical sciences can lead to better clarity of the principles of professionalism for professors, students, and administrators (60).

1-2 Attributes

Attributes are the key characteristics of a concept found in relevant texts or articles. Identifying the attributes can provide a more accurate and realistic definition of the concept (31). Based on the present study results, the attributes of professionalism in medical education were identified in two categories: the emergence of professional role models and the institutionalization of the culture of professionalism in medical education (Table 2).

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1-2-1 The emergence of professional role models in educational environments

If the antecedents are provided in the university environment, the conditions will be provided for the emergence of model professors as professional role models. Role model professors have professional character and competencies (56, 61-63). Also, these professors have good moral qualities such as tolerance, humility, politeness, fairness and justice, altruism, respect for human values, respect for individual human rights, and respect for human beings. More importantly, having the characteristic of piety is evident in these professors (41, 44).

Self-purification of personal interests, trust in God, sincerity, relationship with God, practical commitment to religious values, insight and self-awareness, pride in the profession, and professional values in society are the characteristics of virtue in model professors. These professors have a very high moral sensitivity. Professionals with high moral sensitivity are considered a reference for ethical reasoning and judgment in clinical ethical problems (38). Another characteristic of professionalism in role-model professors is the desire for excellence. Excellence means a commitment to advancement in the profession (40, 44) and a commitment to improving knowledge and skills (16, 40, 41, 44).

1-2-2 Institutionalizing a culture of professionalism in medical education

According to the reviewed articles, the culture of professionalism in medical universities was identified as a feature of institutionalized professionalism in medical education.

Providing opportunities for counseling on ethical issues in education and clinics, membership of professors and students in professional groups and associations (64), creating a partnership and cooperation between students (65), professional support of people in case of errors (66) providing a platform for self-confidence (37), increasing the moral sensitivity of professors and students (45) increasing participation of health workers, professors, and students in health policies, providing opportunities for rethinking in teaching professors and students (45) developing a spirit of cooperation and empathy in students, professors, and staff (37, 67), are signs of the institutionalization of the characteristics of the culture of professionalism in the environment of medical universities.

1-3 Consequences

A phenomenon that is expected to occur following the occurrence of a concept is called a consequence (31). In the present study, the consequences of professionalism in medical education were identified in the consequences related to health stakeholders in both society and students (**Table 2**).

2- Consequences for health stakeholders

The results of institutionalizing the principles of professionalism in medical education in the community will promote the health of the community. This promotion is done by providing high-quality and safe services, improving teamwork and inter-professional cooperation (55, 64) comprehensive care of patients and improving health consequences (2, 55), respecting the rights of clients (42, 65), client satisfaction with the services provided, reducing the number of complaints (53, 64) and enhancing the community's trust (2, 38) in the health system.Adherence to the principles of professionalism in medical education in the field of students will have the following consequences: improving the relationship of students with trustees of medical education (42, 53), students' satisfaction and increasing the quality of student life (53, 65), teachers' response to the spiritual needs of students (50), motivating and increasing students' enthusiasm for learning (36) improving the quality of education, creating an ethical and professional learning environment in the university, and promoting inter-professional activities (35, 36, 38), training committed staff and reducing professional misbehavior (2, 57), rethinking professional behavior, positive attitudes, cognitive, and behavioral changes in the field of professionalism, excellent performance, and professional identity (57, 68-70).

3- Definition of professionalism in medical education

According to this study, professionalism in medical education is the institutionalization of the culture of professionalism and the emergence of the role of professional role models in educational settings to train professional students, provide the best quality of services, and ensure the health of society.

Discussion

The present study aimed to clarify the concept of professionalism in medical education. In this study, the attributes of professionalism in medical education were

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identified in two categories: the emergence of model professors and the institutionalized culture of professionalism in medical education. The antecedents for professionalism in medical education were determined in two categories: the manner, competency, and the universities' planning to achieve professionalism. Consequences for health stakeholders were identified because of professionalism in medical education. In this respect, the emergence of professional role model professors is a feature of professionalism in medical education. The behavior of model professors is a criterion for measuring the professionalism of any behavior and performance in educational environments. The increase of model professors in universities is one of the signs of the institutionalization of professionalism in the university. However, providing the necessary conditions for the emergence of such patterns and maintaining them in the education system requires the antecedents. One way to achieve professionalism in medical education is that educational environments should be model-oriented universities 4. The medical sciences education system, which is concerned with attracting qualified professors and guiding as many professors as possible to become role models, will successfully achieve professionalism in student education. Living in a positive organizational culture regarding professionalism can play an important role in creating new models (71). The existence of professionalism-related instructions and ethical codes in medical education environments will increase the transparency of duties and professional behavior of all people present in educational environments, including administrators, professors, students, and staff (53). Such an education system will quickly lead to the development of professionalism.

. The findings of our study show that another precondition for training professionals in the medical sciences is that professors have the appropriate character and competence. Professional professors have an important role in forming professionalism in medical education by using formal and hidden educational content and applying appropriate teaching and evaluation methods (44, 48, 51, 72). Professionalism in medical education means the ability of professors to communicate professionally with colleagues, students, staff, and patients. This attribute can teach professionalism to students and even other staff in educational environments as hidden content. Students often learn what they see, not what they hear (5, 73). If these preconditions are met, positive consequences can be expected for society, the health system, and its stakeholders.

Medical universities should strive to train ethic-based and professional medical students by providing formal content through the education system and paying special attention to hidden content through models (46, 74). Achieving professionalism in medical education will lead to training motivated people and people interested in learning more and increasing knowledge, skills, and ethics in interaction with clients (36). Finally, educating professional and ethic-based students will ensure the community's health by providing the best quality of service. The result of professional students' work in the future will be the community's satisfaction, trust, and positive attitude toward medical staff (38).

This study adds to the existing literature by providing a concept analysis of professionalism in medical education from an Iranian perspective, which may differ from other cultural contexts. The study also identifies some of the factors that affect the development and assessment of professionalism in medical education, such as the role of professors, the hidden curriculum, and the ethical guidelines. The study may help medical educators and policymakers to design and implement effective strategies to foster professionalism in medical students and faculty.

One of the limitations of the present study is that only English and Persian articles were included in this study, and studies in other languages were ignored. Another limitation of the present study was that the search was conducted in only a few databases and the number of articles in this field was large. It is possible that some studies were missed. It has the potential to weaken a more comprehensive grasp of this concept's scope. Despite this limitation, using precise keywords and searching international databases helped minimize its impact on the results. Rogers's evolutionary concept analysis method follows a linear analysis strategy, separating data collection from analysis, which could compromise data reliability and validity when considering surrogate and related terms as exceptions. Therefore, the possibility of broadening conceptual boundaries is diminished, resulting in the depletion of essential resources and obstructing the effective explanation of the concept.

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Conclusion

Professionalism in medical education is crucial for the development of competent and ethical healthcare professionals. It involves the presence of professional role models and the establishment of a culture of professionalism within educational environments. Professors' behavior and competence, as well as the university's plans to achieve professionalism, are important antecedents to professionalism in medical education. The consequences of professionalism include improved health outcomes, enhanced patient satisfaction, and the development of positive attitudes and behaviors in students. Medical universities should strive to train ethical and professional students by providing formal and hidden content through the education system. This study provides valuable insights into the concept of professionalism in medical education and can guide medical educators and policymakers in fostering professionalism in students and faculty.

Ethical considerations

This study was approved by the ethics committee of Zanjan University of Medical Sciences with code (IR.ZUMS.REC.1397.257).

Artificial intelligence utilization for article writing

The authors claim that no artifitial intelligence was utilized for writing article.

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Conflict of interest statement

The authors declare that they have no conflict of interest.

Author contributions

The authors contributed equally. All authors read and approved the final manuscript.

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Data availability statement

The datasets are available from the corresponding author

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