



Value-Rich Exposures in Medical Education; Synthesizing the Concept

LEILA AFSHAR¹, PhD; SHAHRAM YAZDANI², PhD; SEYED ABBAS FORUTAN³, PhD; HAKIMEH SABEGHI^{4*}, PhD

¹Department of Medical Ethics, Shahid Beheshti University of Medical Sciences, Tehran, Iran; ²Virtual School of Medical Education and Management, Shahid Beheshti University of Medical Sciences, Tehran, Iran; ³Academy of Medical Sciences of Iran, Tehran, Iran; ⁴School of Nursing and Midwifery, Birjand University of Medical Sciences, Birjand, Iran

Abstract

Introduction: Proper transfer of professional values is an essential part of medical education. Real-life experiences in the educational process are one of the most effective methods for achieving values and assisting students in developing their value framework. This study aimed to develop and characterize the concept of value-rich exposures in medical education to bring this concept closer to the practice.

Methods: In order to perform the synthesis, according to Walker and Avant, a combination of hermeneutic phenomenological method and literature review was used. At first, researchers characterized the concept of value-rich exposures based on the lived experiences of medical students who had participated in a program based on value-rich exposures at Shahid Beheshti University of Medical Sciences in Iran. After that, the literature was reviewed using an integrative review approach. Then we looked at the similarities and differences between the results of the interviews and the literature review and chose the best word to name the themes and subthemes. Finally, to describe the concept of value-rich exposures in medical education, we created a conceptual matrix.

Results: We defined the concept of value-rich exposure in medical education under five themes while implementing the steps of Walker and Avant's concept synthesis: probing self-inner values, value-rich program, value mentor, value-rich interactions, and value-rich environment. The elements and relationships of the themes were depicted in the form of a conceptual matrix.

Conclusions: A value-rich exposure is a type of lived experience that occurs during a student's professional life, a necessity that, with proper planning, can play an important role in shaping medical students' professional identities.

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*Corresponding author:

Hakimeh Sabeghi, PhD;
Department of Nursing,
Birjand University of
Medical Sciences,
Ghaffari Street,
Birjand, Iran

Tel: +98-9153034292

Email: hakimeh.sabeghi@gmail.com

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Introduction

Proper transfer of professional values is an important and essential part of medical education. Prioritizing this goal is critical for shaping the professional identity of medical students. For this purpose, medical education in all aspects and mainly in professional ethics education should try to improve a value-rich healthcare system, e.g. education, providing care and managing the system (1). Medical educators also should design and implement educational programs that reflect professional values and the related competencies as learning objectives (2).

The term value refers to fundamental principles and beliefs that serve as a general guideline for behavior (3). In other words, values in the healthcare system are defined as normative guidelines that help us resolve conflicts and challenges, as well as choose the right action, and are effective in the decision-making and clinical judgment process (4, 5); therefore, considering the values must be prioritized in medical education (4).

In 2017, an article titled "Advances in Evidence-Based Medicine" was published in *Lancet*, emphasizing the significance of combining scientific evidence with patients' values and preferences, and making appropriate decisions with both in mind. This new approach to value-based medicine will undoubtedly have an impact on medical education processes. As a result, while the evidence-based approach focuses on improving relevant capabilities in using valid research results and scientific evidence in clinical care, as well as on the ability to criticize the evidence (6), the value-based approach emphasizes close attention to the human and moral values that govern professional interactions. Value concepts must be considered in the curriculum, and effective strategies for teaching them must be examined.

According to the findings of various studies in this field, the best way to teach ethics and values is to use active learning methods such as small group, inquiry-oriented teaching, storytelling, group discussion, case study, extracurricular activities, role modeling, and personal reflections (3, 7-12).

Real-life experiences, which play a significant role in the transfer of professional values outside of the classroom, are one of the most effective methods for achieving values and assisting the student in developing his/her value framework (4). As a result, medical educators should consider the students' real-life experiences as a source of inspiration for valuable topics during studentship. Placing students in real-world situations and their experiences can have a significant impact on the

transfer of values (13).

Therefore, designing value-rich exposures in medical education is an effective way to teach values based on students' lived experiences and real exposures. In order to harmonize its components and elements that are not yet theoretically clarified, it is necessary to collect information and data and use them to reach a common meaningful consensus and language in relation to the value-rich exposures in medical education. According to Walker and Avant, when a researcher encounters a phenomenon which explanations of its nature are confusing and vague, the concept synthesis can be a good solution for explaining and interpreting the phenomenon in question (14). The aim of this study was to develop and characterize the concept of value-rich exposures in medical education through the concept synthesis method based on mixed approach (textual and qualitative inquiry) to bring this concept closer to the practice.

Methods

We used Walker and Avant concept synthesis (2019) to characterize elements of the value-rich exposures in medical education so that it could be applied in the student's educational process.

According to Walker and Avant, in order to synthesize the concept, the researcher draws on his or her professional experience as a starting point for developing a new idea (14). Our research began with a ten-year experience in implementing a program based on value-rich exposures for medical students at Shahid Beheshti University of Medical Sciences in Iran as elective and extracurricular activities. In this program, known as "Mohajer" scientific content is taught alongside value concepts in various educational activities, training sessions on scientific-value topics in a variety of environments, field trips, school journeys, interactions with people and the community, and critical discussion sessions, all of which provide students with unique opportunities to experience many of professional values. Such programs expose medical students to many value-based concepts that are essential for a physician, such as sincerity, team morale, empathy, creativity, critical thinking, kindness, commitment, accountability, justice, freedom and security. The positive outcomes of the *Mohajer* program prompted researchers to synthesize and provide an analytical definition for the concept of value-rich exposures in medical education. In order to perform the synthesis, a combination of phenomenological method and literature review was used (The study path flowchart).

Phenomenology research

In the first stage, the researchers used a hermeneutic phenomenological approach to characterize the concept of value-rich exposures based on medical students' lived experiences after participating in the *Mohajer* programs. The researchers used semi-structured interviews to gather information because focusing on participants' experiences result in an accurate description of the phenomenon and its related themes (15).

Purposive sampling was used to select individuals who were most involved in the *Mohajer* programs and had in-depth information and experiences, as Van Manen believes that individuals who are rich informants should be chosen for interviews. An interview guide was developed to ensure that the interview will be conducted in accordance with the research objectives. It included two sections: the demographic characteristics of the participants and the interview questions. Before interviews, the aim of the study were explained to the participants, and their written consent was obtained. The interviews began with open-ended questions to allow the participants to express their experiences easily, and then progressed to in-depth questions to clarify the concept under study. Examples of these questions include: "Would you please tell us about the experiences you had in the Mohajer Group?", "What was your Mohajer experience like?", "What values did your exposures transfer to you?"

Seven interviews with six individuals were conducted, each lasting between 50 and 75 minutes. The interviews were analyzed using the MAXQDA software.

Van Manen's thematic analysis method was used to conduct the data analysis (15). We used a combination of holistic, selective and detailed approaches to isolate thematic statements. Then, the extracted thematic statements were translated to phenomenological language. According to Van Manen (15, 16), members of the research group held several meetings until they reached a consensus for the extracted themes.

Literature review

The literature was reviewed using an integrative review approach. Before beginning to search for articles, the research question must be determined and focused on (17). As a result, the researchers developed the research question "What are the characteristics, components, and elements of the concept of value-rich exposures in medical education?" and kept it in mind throughout the study. The keywords value (s), value (s) education, value

exposures, value-based education, and medical education were searched in multiple databases, including PubMed, Google Scholar, EBSCO, OVID (containing CINAHL and Cochrane Database), and also E-Journals, including Science Direct, Springer, Iran Medex, ISD and Oxford Journals.

The English as well as the Persian studies related to the research question were included. The authors did not restrict their search to a specific time or type of study. There were few studies related to the purpose of our research. No research used the concept of value-rich exposures among the existing studies, and most studies addressed the importance of values in medicine, education, and professional formation. Finally, 15 articles were reviewed.

The researchers reviewed all documents, recorded related statements, and extracted concepts. Following the identification of each concept, similar concepts were classified more comprehensively, as Walker and Avant (2019) believed in the interpretation of the data in concept synthesis into logical statements (14).

Concept synthesis

First, we analyzed the findings of the phenomenological study, and we were able to empirically characterize the basic framework of the concept of value-rich exposures in medical education. The results of review studies were then added to improve the concept validity. The statements extracted from the studies which were relevant to the research question were categorized, and similar items were grouped together under a single theme. Then we looked at the similarities and differences between the results of the interviews and the literature review, and chose the best word to name the themes, subthemes, and groups. Finally, to describe the concept of value-rich exposures in medical education, we created a conceptual matrix.

Ethics approval and consent to participate

This study was approved by the ethics committee of Shahid Beheshti University of Medical Sciences by the ethical code number IR.SBMU.SME.REC.1398.047. For the phenomenology study, informed written consent to participate was obtained from all participants.

Results

Results of phenomenology research

Following a continuous and rotational analysis of interview data, the final analysis yielded 5 themes and 17 subthemes (Table 1) (18).

Table 1: The summary of themes and subthemes

Themes	Subthemes
In the shadow of a supportive mentor	Companionship of mentor and students Life mentor Determined wise instructor
A well-orchestrated, value-rich program	Dynamic, value-based curriculum Unique learning methods Confluence of science and value outside of traditional classrooms Program's desiderata Value preloading
Human interactions in a value system	Collective exploration Team learning Communication with people committed to values
Acquiring values in a real-life environment	Real exposures as a launching pad to achieve values The magic of real experiences in a value-laden environment Gradual exposures to achieve a deep perception of values
Seeking values in oneself	Migration from oneself in pursuit of values Practice of moral values Covenant guarding

Table 2: Themes and statements related to the concept of value-rich exposures according to literature

Theme	Subthemes	Statement extracted from the literature
Value-rich program	Place of values in the program	- It is necessary to assign a part of the mission of educational programs to values (10). - Educational institutions need a coherent strategy for teaching values (2). - Educational programs should identify, gradually shape and develop the specific behaviors, values, and attitudes that are expected of medical students and interns at each stage (19).
	Content	- The content should be reviewed based on the value objectives of the course and value elements should be added to it. The content of a value-based program generally falls into two categories: indirect content (value-rich exposures) and direct content (value-rich texts and courses) (10).
	Methods of transferring values	- It is necessary to use student-centered methods, including value modeling, counseling and training, real value-rich exposures, value-based rethinking, value practices guided by educational facilitators, value sharing and discussion, practices for solving value conflicts, development of value judgment and reasoning, practice and repetition for institutionalization, feedback, and reflection (10). - Ethics and values can be developed through a variety of educational techniques such as role modeling, drama, simulation, educational games, discussion, project, group work, educational visits, interviews and brainstorming, as well as sources such as poetry, stories, music, photographs, posters and slogans (20).
	Storytelling	-Clinical professors can stimulate students' reflection on their values and beliefs by selecting and telling the right stories, especially when the stories are based on the professors' own clinical experiences (8). - Professors' use of storytelling in appropriate situations, such as during clinical exposures, provides an excellent opportunity to discuss values and attitudes (8).
Value-rich environment	Real-life environment	- A value-based curriculum should be provided in an appropriate, safe and supportive environment with the possibility of discussing and challenging values (10). - Being in real-life environments is essential to understand the true feeling of being a doctor and real-life experiences can be effective in developing students' professional identities (21). - The real exposures and lived experiences of medical students play an important role in shaping the value framework of their profession (13).
Interaction	Value models	-An often-overlooked opportunity for promoting values is to identify our heroes, who reflect our cultural values (22).
Mentor	Educator's role	- The teacher's individual values are reflected in his/her roles and the activities he / she presents (23). - The teacher, as a role model and provider of learning opportunities, plays an important role in student's learning (7).

Results of literature review

The study included fifteen articles related to the research question. Table 2 lists the themes and statements related to the concept of value-rich exposures that were extracted from the studies.

Results of concept synthesis

Finally, we combined the findings from the phenomenology study and the literature review. We defined the concept of value-rich exposure in medical education under five themes while

implementing the steps of Walker and Avant's concept synthesis: probing self-inner values, value-rich program, value mentor, value-rich interactions, and value-rich environment. Probing self-inner values is the inner journey that the student takes after each exposure, a journey into the depths of his/her soul that elicits his/her inner values. A value-rich exposure is at the heart of a designed program, which must have a specific teaching and evaluation method depending on the type of value to be conveyed to the student. A value-rich program must consider value-rich content, convey it to students, and engage students' thinking. Another important aspect that contributes to the effectiveness of a value-rich exposure experience is the value mentor's guidance and support. Getting the right experience requires the support, empathy, and soberness of a wise mentor with the student. The mentor paves the way for the student to experience a value-rich exposure (before, during, and after exposure). Value-rich interactions can be a value-rich exposure in and of themselves, or they can enrich other designed exposures. In other words, value-rich interactions can occur

before, during, or after a value-rich exposure, but they can be designed before exposure to prime and prepare the student, or after exposure to consolidate and internalize the change that has occurred in the student. The principle of transfer of a value concept may also occur during value-rich interactions. Value-rich exposures always occur in the context of an environment, and the better the environment reflects the desired values, the better the student will understand them. A value-rich environment is an external symbol of the values that must be instilled in the student. In order for values to be properly understood in a value-rich environment, the structure and symbols of the environment must be aligned.

Figure 1 depicts the elements and relationships of the themes resulting from the concept synthesis of value-rich exposure in the form of a conceptual matrix.

Conceptual definition of value-rich exposure in medical education

Value-rich exposures in medical education are a method of transferring ethical and professional values that are designed as part of an educational

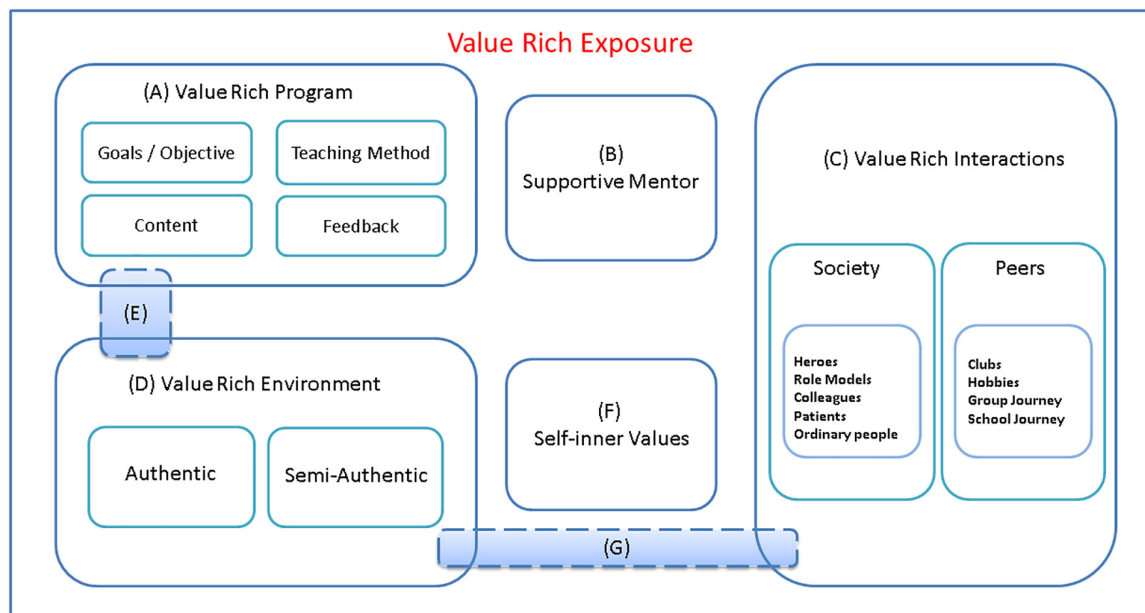


Figure 1: Conceptual matrix of value rich exposure in medical education. (A) Objectives, content, teaching method, and feedback are all components of the value-rich program that correspond to the type of predetermined exposure. (B) One of the main elements that guides the student is the supportive mentor. (C) Another dimension of value-rich exposures is interaction with people in the community and peer groups. Heroes, role models, colleagues, and even ordinary people and patients are elements in the community that, along with peers, their interests and characteristics help to explain part of the value-rich exposure. (D) A real or simulated environment is one in which the concept under consideration in a value-rich exposure is expressed. In other words, the physical environment and the atmosphere that governs it are factors that contribute to the depth of perceived values. (E) In a value-rich exposure, there is a mutual relationship between the environment and the program. On the one hand, exposures should be designed in such a way that the best evidence is understood in line with the content mentioned in the environment, and on the other hand, the environment in which the student experiences a phenomenon should be a content and create value in and of itself. (F) A student who is exposed to value-rich exposures is not a person devoid of value traits; rather, he/she possesses a variety of value traits that have developed in him/her during his/her life as a result of the influences of family, education, culture, tradition, and religion. (G) Being in a value-rich environment can sometimes lead to value interactions.

program and implemented with the help and guidance of a value mentor. These exposures are based on group interactions and are either experienced or simulated by students in value-rich environments. The process of this experience serves as a stimulus for the student to probe his/her inner values and reintroduce them into his behavior.

Discussion

The concept of value-rich exposure in medical education was introduced in this study as a means of transferring values. Concept synthesis with a mixed approach was used to characterize the concept and clarify the elements and features of this phenomenon.

One dimension of the concept of value-rich exposures is probing self-inner values, which entails probing and stimulating students' minds to revive their moral and professional values. Human nature is full of moral and value qualities and virtues, but the trace of unwanted societal factors and counter-values may gradually settle on and diminish them. Being aware of these counter-values, diminishing their impact and achieving inner values require effort, practice and protection (18). The first step is to focus one's attention on inner values to achieve them. Genuine value-rich exposures are the best stimuli for values to emerge from within humans. This can be justified based on information processing theory. According to this theory, the learner's attention and perception are required to transfer information from sensory memory to short-term memory or working memory (24). As a result, putting a person in real-life situations causes him/her to attract his/her attention as well as reach the understanding that he/she should by observing and confronting real-life issues. Godbold and Lees introduced a value-based approach to teaching ethics in the medical sciences, showing that the best way to teach ethics is through a self-reflective curriculum in which students reflect on their values and beliefs and make decisions based on them (25). The important point is that individual values are a factor in decision-making; thus, students should be aware of their values (26).

Another characteristic of value-rich exposures is the presence of a program designed to transfer the desired values. The primary goal of the medical curriculum should be a set of professional knowledge, skills, and values (27). In order to achieve the desired results, a well-structured instructional design is necessary for teaching values and ethics, to integrate them into the curriculum and consider the necessary requirements and prerequisites (10).

The importance of the designed curriculum in teaching values and the purposeful design of the curriculum were two thematic clusters extracted from the phenomenological part of this study, which was eventually categorized into the theme of "curriculum-based value movement" (18). The reviewed studies also mentioned the need for a coherent program for teaching values (3, 10, 19, 27). As a result, in order for value-rich exposures to be effective, an educational program tailored to the type of exposure is required.

According to the findings of this study, the value mentor guides students to sublime values. Professional and value-based behaviors of the educators is an experience that helps students internalize values. Value-rich exposures will have the greatest impact on students when they are provided by a mentor who is a role model and demonstrates his/her values through his/her behavior. Existing research indicates that the teacher, as a role model and provider of learning opportunities, plays a significant role in student's learning (7). There is no doubt that teaching medical ethics and professional values necessitates appropriate models who can not only demonstrate enthusiasm and good practice but also articulate the reasons for their good behavior (1).

Value-rich interactions are valuable experiences that have a significant impact on transferring values to medical students. Interactions between students and people who adhere to values can transmit those values to students and also would show them the importance and possibility of persistence on values, i.e the value integrity. Interaction with peers, colleagues, national heroes, community members, and patients allows students to strengthen cooperation, trust, and empathy, which lead to normative adaptation (28).

The value-rich environment is the fifth characteristic of the concept of value-rich exposures. According to statements derived from review literature and interview analysis, it is a context in which value-rich exposures occur, and presence in the real environment, the provision of a favorable educational environment for the transfer of values, and real exposures are essential for experience of a value-rich exposure. According to the evidence, presenting a value-based curriculum should take place in an appropriate, safe, and supportive environment where values can be discussed and challenged (10). According to Fredholm et al., being in real environments is essential for understanding the true feeling of being a physician, and real-world experiences can be effective in developing students' professional identities (21).

Table 3: Explanation of the characteristics of the concept of value-rich exposures based on theories

Theory	Theory characteristics	Characteristics of value rich exposures
Social theories of learning	Learning and thinking are social processes.	One of the most important things to consider when designing value-rich exposures is the importance of the group and the interactions that take place between group members or between group and people in the community.
	Thinking and learning are structured by tools in specific environments and situations.	Value-rich exposures always take place in the context of an environment and under certain conditions, and the better this environment reflects the desired values, the better the student will understand them.
	Thinking is influenced by the situation in which learning takes place.	The student's exposures in various situations serve as stimuli for probing and stimulating her/his mind, resulting in the manifestation of values.
	In teaching-learning situations, teachers should pay special attention to when, how, and in what situations this information is conveyed, rather than simply focusing on the content.	The characteristics of the concept under study that emerged in the form of a "value-rich educational program" are fully in line with assumptions of situational theory.
Transformative learning theory	Transformative learning is a learning experience that is rooted in the way humans communicate.	Interaction with peers, community members, heroes, role models, colleagues, and even ordinary people and patients is an important dimension of value-rich exposures that form part of the student learning experience.
	Faculty members should assist students in becoming aware of and criticizing their own and others' hypotheses in order to facilitate transformative learning.	The value mentor's proper guidance and support of the student is an important factor that influences the experience of value-rich exposure.
	The student should be placed in situations that allow him or her to identify and criticize his or her frames of reference.	In value-rich exposures, the student is exposed to opportunities that challenge his or her inner values and beliefs.
	The learning experience should be designed in such a way that the student can effectively participate in the conversations. In other words, learning is a social process, and discourse is required for meaning to be created.	One of the fundamental features of the concept of value-rich exposure, which is an essential component of the dimensions of "value-rich educational program" and "value-rich interactions," is the ability to discuss and challenge the experience of value exposures.

The elements of value-rich exposures in medical education are explained by the proposed features resulting from the concept synthesis and conceptual definition presented in this study. According to Walker and Avant, as a final step in concept synthesis, the researcher should explain the place of new concept in existing theories, if possible (14). Taking into account the various dimensions of the concept of value-rich exposure, which was introduced in the current study as a method of teaching values and ethics in medical education, this concept can be explained in the form of humanistic theories such as transformative learning theory and social theories of learning. Table 3 explains the characteristics of the concept under study based on these theories.

Limitations

As concept synthesis is a method used to develop new concepts, the results of this study cannot be used immediately in practice and further corrections in the concept, concept analysis, and interventional research are required.

Conclusions

The concept of value-rich exposure occurs

in a value-rich environment, as well as it needs a structured program and value-rich interactions. Students' experiences with these exposures are shaped by their inner values, the guidance and support of a mentor, and result in a deep understanding of the values. A value-rich exposure is a type of lived experience that occurs during a student's professional life, a necessity that, with proper planning, can play an important role in shaping medical students' professional identities. Values and especially ethical values are always an integral part of medical education, and they should be addressed in the curricula of various medical disciplines.

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Authors' Contribution

All authors contributed to the discussion, read and approved the manuscript and agree to be accountable for all aspects of the work in

ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated resolved.

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References

- Ssebunnya GM. Beyond the hidden curriculum: The challenging search for authentic values in medical ethics education. *South African Journal of Bioethics and Law*. 2013;6(2):48-51.
- Hattab AS. Current trends in teaching ethics of healthcare practices. *Developing World Bioethics*. 2004;4(2):160-72.
- Halstead JM, Taylor MJ. Learning and teaching about values: A review of recent research. *Cambridge journal of education*. 2000;30(2):169-202.
- Grundstein-Amado R. Values education: a new direction for medical education. *Journal of Medical Ethics*. 1995;21(3):174-8.
- Marzorati C, Pravettoni G. Value as the key concept in the health care system: how it has influenced medical practice and clinical decision-making processes. *Journal of Multidisciplinary Healthcare*. 2017;10:101.
- Djulgovic B, Guyatt GH. Progress in evidence-based medicine: a quarter century on. *The Lancet*. 2017;390(10092):415-23.
- Birden H, Glass N, Wilson I, Harrison M, Usherwood T, Nass D. Teaching professionalism in medical education: a Best Evidence Medical Education (BEME) systematic review. BEME Guide No. 25. *Med Teach*. 2013;35(7):e1252-66.
- Hensel WA, Rasco TL. Storytelling as a method for teaching values and attitudes. *Acad Med*. 1992;67(8):500-4.
- Thiel CE, Connelly S, Harkrider L, Devenport LD, Bagdasarov Z, Johnson JF, et al. Case-based knowledge and ethics education: Improving learning and transfer through emotionally rich cases. *Science and Engineering Ethics*. 2013;19(1):265-86.
- Yazdani S, AkbariLakeh M, Ahmady S, Afshar L, Foroutan SA. Value-based curriculum model from the viewpoints of experts in education of ethics and values in shahid beheshti university of medical sciences. *Iranian Journal of Medical Education*. 2015;15:304-18.
- Zhang F, Zhao L, Zeng Y, Xu K, Wen X. A comparison of inquiry-oriented teaching and lecture-based approach in nursing ethics education. *Nurse education today*. 2019;79:86-91.
- Branch Jr WT. Small-group teaching emphasizing reflection can positively influence medical students' values. *Acad Med*. 2001;76(12):1171-2.
- Sabeghi H, Afshar L, Foroutan SA, Yazdani S. Medical students' value-rich exposures in clinical setting during the COVID-19 pandemic. *Journal of Medical Ethics and History of Medicine*. 2020;13:1.
- Walker LO, Avant KC. *Strategies for Theory Construction in Nursing*. 6th ed. United states of America: Julie Levin Alexander; 2019.
- van Manen M. *Researching Lived Experience: Human Science for an Action Sensitive Pedagogy*. USA: Taylor & Francis; 2016.
- van Manen M. *Researching Lived Experience, Second Edition*. USA: Taylor & Francis, Human Science for an Action Sensitive Pedagogy: Left Coast Press; 1997.
- Cronin P, Ryan F, Coughlan M. Undertaking a literature review: a step-by-step approach. *British journal of nursing*. 2008;17(1):1.
- Sabeghi H, Yazdani S, Foroutan SA, Hosseini SM, Afshar L. Value-rich exposures in medical education: phenomenology of practice according to the lived experiences of medical students in Iran. *Journal of Medical Ethics & History of Medicine*. 2021;14(9):1.
- Macneill P, Joseph R, Lysaght T, Samarasekera DD, Hooi SC. A professionalism program in medical education and training—From broad values to specific applications, YLL School of Medicine, Singapore. *Med Teach*. 2020;42(5):561-71.
- Chowdhury M. Emphasizing morals, values, ethics, and character education in science education and science teaching. *MOJES: Malaysian Online Journal of Educational Sciences*. 2018;4(2):1-16.
- Fredholm A, Manninen K, Hjelmqvist H, Silén C. Authenticity made visible in medical students' experiences of feeling like a doctor. *International journal of medical education*. 2019;10:113.
- Sanchez TR. *Heroes, Values, and Transcending Time: Using Trade Books To Teach Values*. USA: ERIC; 1998.
- Fischer E, Hänze M. How do university teachers' values and beliefs affect their teaching? *Educational Psychology*. 2020;40(3):296-317.
- Saif AA. *Modern educational psychology: psychology of learning and teaching*. Tehran: Doran; 2015. Persian.
- Godbold R, Lees A. Ethics education for health professionals: a values based approach. *Nurse Education in Practice*. 2013;13(6):553-60.
- Fulford K. *Ten principles of values-based medicine*. USA: Oxford University Press. 2004:205-34.
- Stern DT. Practicing what we preach? An analysis of the curriculum of values in medical education. *The American journal of medicine*. 1998;104(6):569-75.
- Goldie J. The formation of professional identity in medical students: considerations for educators. *Med Teach*. 2012;34(9):e641-e8.