Review Article

The components of student's professional responsibilities in the process of clinical education: A scoping review

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Abstract

Background & Objective: Recognition of the professional role and responsibility is a key component in successfully playing professional roles. The present study aimed to recognition of the components of students' professional responsibilities in the process of clinical education.

Materials & Methods: This is a scoping review study. This study searched, databases including Science Direct, Magiran, Web of Science, PubMed, and Google Scholar by keywords of professional responsibility, professional behavior, clinical education, and student.

Results: 3821 articles were studied and monitored step by step and finally 44 articles were selected. The evaluation of articles based on content analysis was categorized into six categories and 33 subcategories. The six categories include educational tasks, patient care, communication skills and information exchange, personal development, professional development, and observing professionalism and ethics.

Conclusion: In this study, the components and dimensions affecting the student's professional responsibilities in the education process were extracted. The results could be used in planning educational interventions to improve the professional responsibility of students in clinical education and also to the development of student assessment tool.

Keywords: Profession, Responsibility, Student, Clinical Education, Scoping Review

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Introduction

"Responsibility" is a core value in medical science education (1) and is a main characteristic of members of the health care profession (1, 2). Theoretically, the concept of responsibility expresses readiness - including willingness and ability - to respond to a series of normative requirements (3). Responsibility and moral beliefs are influential factors in improving the quality of services in medical sciences (4). On the other hand, making the individual responsible for creating favorable situations is one of the important goals for quality assurance. Responsibility must be formed among students during their academic courses. The quality of the education system plays a major role in the formation of students' responsibilities (5). Fazl Elahi Qomshi (2014) writes that the responsibility of students is an objective manifestation of the behavior of those in charge of cultural and educational affairs, especially teachers and staff (6) recognized as a hidden curriculum (7). Asemani et al. (2014) write that the training of responsible professionals has always been one of the main concerns of medical educators. However, there is a restriction on research related to "responsibility", especially in the field of medical education (3). The professions of medical sciences will face many challenges in the new millennium (8) which has a special effect on clinical education.

Clinical education is a vital component in the educational programs of medical sciences (9). Moreover, clinical

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education is considered an essential component of these educational programs (10). The process of clinical education is the most effective platform for acquiring skills (9, 11), and integration between theoretical knowledge and clinical practice (12). The clinical environment provides an opportunity for the professional socialization of students by experiencing interactions, emotions, thinking, valuing, and communication in clinical situations (13). Clinical education by providing the opportunity to the application of theoretical knowledge in practice (11) to develop the necessary skills in the students' profession (9). The designing process of clinical education needs to focus on identifying learning outcomes, examining learning needs, planning clinical learning activities, guiding learners in clinical activities, and evaluating clinical performance (14). In general, gaining clinical experience is the core of clinical education (15). However, responsibility and accountability in clinical practice are complex issues (16).

Regards, the importance of the concept of responsibility as a basic principle in medical education requires an explanation of the concept of student professional responsibility in clinical education. This helps its correct evaluation and training (1). Most of the research has been conducted in the field of professional behaviors and unprofessional behaviors (17). A review of the concept of professional responsibility of students in medical science professions is necessary. Therefore, this scoping review study has been conducted to identify and introduce the dimensions and components of student professional responsibility in clinical education. This study aimed to answer the question "How did the studies describe the professional responsibility of students in clinical education?".

Materials & Methods

The present study is a scoping review. The scoping review is a type of quick review of key concepts in a specific research topic and finding the main sources and types of available evidence. The scoping review is conducted to explain complex topics or topics that have not already been comprehensively reviewed (18). In the scoping review of different types of texts (such as review articles, original articles, short reports, and letters to the editor), with diverse methodological approaches (such as experimental designs and descriptive designs) and data analysis approaches (qualitative, quantitative or mixed approaches) reviewed (19). The methodological framework of the study follows the 5-step model by Arksey and O'Malley (20), which is presented below.

First step: defining the research question

The study is started based on the research question "What are the dimensions and components of professional responsibility of medical students in clinical education?". To answer this question, the key keywords including professional responsibility, behavior, unprofessional, clinical education, and student were selected.

Second step: Identifying related research studies

The databases of Science Direct, Magiran, Web of Science, PubMed, and Google Scholar in the period from 1990 to April 2022 were searched without restrictions on the location of the study.

Based on the question and purpose of the research, the search strategy was compiled using the PEO method.

-*Community*: (Population of Participant) students of all medical sciences who have clinical education in their curriculum.

-*Exposure*: frameworks, explanations, and tools for evaluating professional responsibilities or professional and unprofessional behaviors.

-*Outcome:* the explanation of the categories, sub-categories, and components of professional responsibility of students of all professions of medical sciences.

Keywords include:

- Behavior (Professional Practice, Professional Misconduct, Professional Behavior, Unprofessional Behavior)
- Education (Hospitals, Teaching, training, Preceptorship)
- Students (Clinical Clerkship, Internship, and Residency)

The search strategy was developed by keywords in the MESH database and articles (3, 5, 17). The search strategy in the PubMed database was as follows:

((((((((((Behavior [MeSH Terms]) AND (codes of professional ethics [MeSH Terms])) OR ("professional competence"[MeSH Terms])) OR (professional practice [MeSH Terms])) AND (Misconduct [MeSH Terms])) OR (unprofessional [MeSH Terms])) AND (activities, educational [MeSH Terms])) OR (hospital, teaching [MeSH Terms])) OR (activities, training [MeSH Terms])) OR (clinical clerkship [MeSH Terms])) OR (residency [MeSH Terms])) OR (internship [MeSH Terms])) OR (preceptorship [MeSH Terms])

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Third step: selection of articles

All documents and articles, including original research articles, short reports, letters to the editor, as well as books, and articles presented in international conferences and congresses regarding the main research question, *"What are the dimensions and components of the student's professional responsibility in clinical education"?*" And also articles related to the process of identifying the components of student responsibility, professional behaviors, unprofessional behaviors at the bedside, training programs for professional behavior and responsibility, professional commitment, clinical competencies, and professional or unprofessional behaviors are included in this study. as well, all documents that were in Persian and English and published until July 22, 2022, were included in the study. Studies that examined the components related to responsibility or professional behavior among non-student groups such as graduates and workers were excluded from the study. All search results were imported into software management reference END Note version X7. At first, duplicate articles and unrelated studies were removed through the title review by the first researcher, and then the abstracts of the articles were studied by both researchers, and unrelated items were removed. Irrelevant studies were also removed in the next step by reviewing the full text of the studies, and finally, two researchers independently reviewed all the selected studies.

Fourth Step: Graph the data

The members of the research team independently reviewed all the titles and abstracts of the identified articles and compiled lists of titles and then discussed them face-to-face to reach an agreement. The final list of articles was determined based on the reviewed titles. Then the data related to the subject were extracted from the articles. Based on this, 3821 articles were obtained from the total database mentioned. 180 articles were removed due to duplication. A total of 3641 titles were studied, of which 2960 were excluded, 681 article summaries were examined, and as a result of the examination, 241 articles with full text were studied. 44 articles were selected and other articles were excluded due to not having the necessary criteria and being irrelevant. A total of 44 related articles were analyzed. (Figure 1).

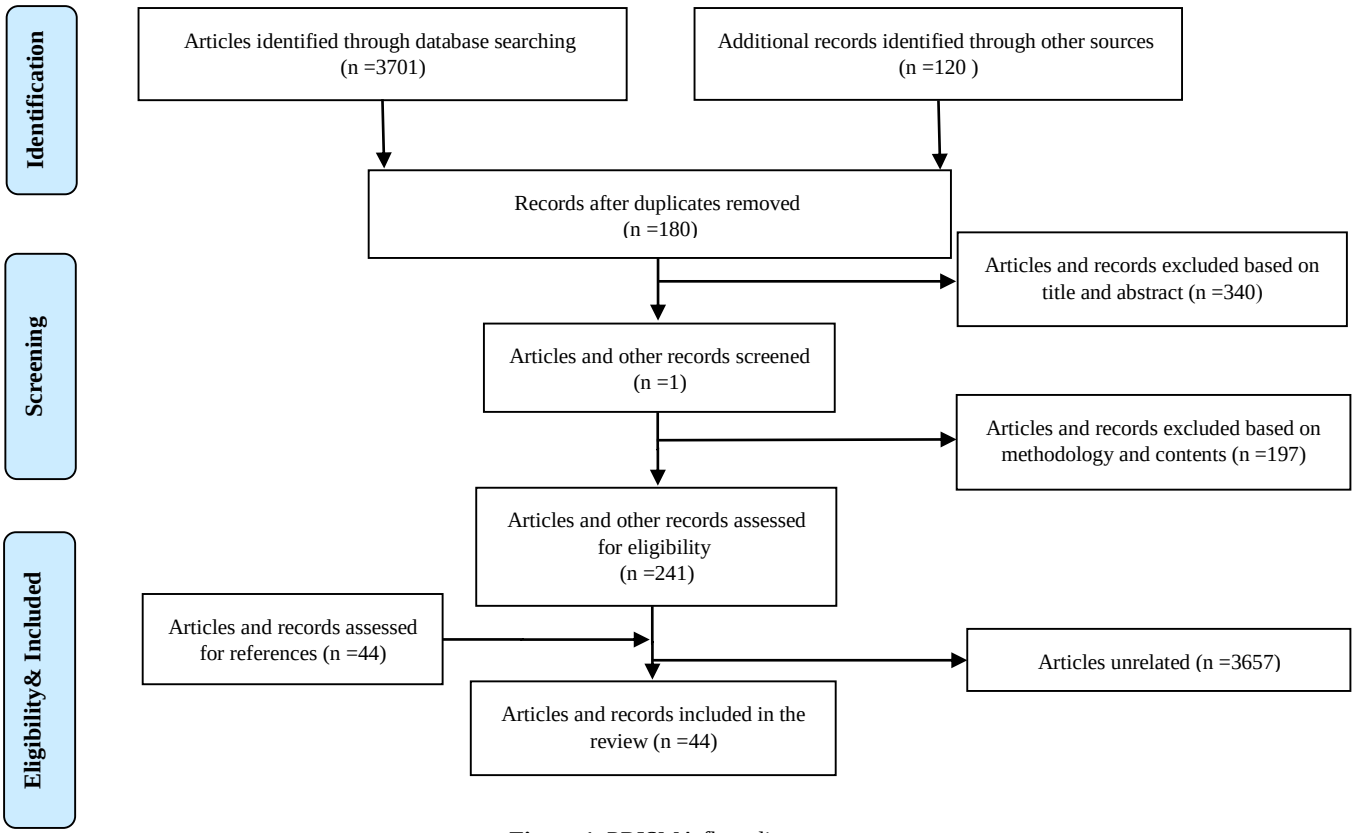

Figure 1. PRISMA flow diagram

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Fifth step: collecting, summarizing, and presenting the findings

To extract the components of students' professional responsibility in clinical education, the content analysis method was used. The contents of the articles were classified with an inductive approach, step by step to extract the items and components as codes and the final themes as the dimensions of the students' professional responsibility. All studies were reviewed by both authors and any disagreements were resolved through discussion.

Results

The review of studies showed that out of 44 studies related to the research question, 20 studies in Farsi or English (45.45%) are related to Iran, 4 articles (9.1%) are related to other regions of Asia. 13 articles (29.55%) were conducted in the United States of America and 7 articles (15.9%) were from continental Europe. 93.18% of the selected studies were original research articles. In terms of the type of study used, 31 articles (70.45%) were quantitative, 9 articles (20.45%) were qualitative, 3 articles (6.81%) were reviewed and one article (2.19%) was mixed. The majority of these studies indirectly mentioned the components of the professional responsibility of students in clinical education. The descriptive results of the articles are shown in Table 1.

Table 1. the extracted components of professional responsibility in clinical education

Author	Country	Year	Type Of Article	Methodology	Components
Grivan et al.	Iran	2017	Original Research	A Qualitative Study Based On Content Analysis	Learning motivation, critical skills, Self-confidence, knowledge
Yamani et al.	Iran	2018	Original Research	A Qualitative Study	Information exchange, human dignity, trust, professional response
Nemati et al.	Iran	2018	Original Research	Descriptive Study	Communication skills with the patient, reflection skills, time management, and interpersonal communication skills
Pouraama et al.	Iran	2013	Original Research	Descriptive Study	Care, pragmatism, trust, professionalism, and justice
Fafadar et al.	Iran	2019	Original Research	Cross-Sectional study	Care, pragmatism, professionalism, trust and justice
Masoumi et al.	Iran	2015	Original Research	Cross-Sectional study	Paying attention to one's rights, professional obligations, communication with other students, providing services to the patient and his companions, training and Research and management
Rehban et al.	Iran	2016	Original Research	Descriptive study	The principles of professionalism (empathy, teamwork, and lifelong learning)
Berhani et al	Iran	2013	Original Research	Qualitative Research	Personal and belief characteristics, theoretical knowledge and technical skills, attention to the patient as a human, critical thinking and decision making, proper communication
Peron et al.	Iran	2013	Original Research	A Cross-Sectional Descriptive Study	Care, pragmatism, trust, professionalism, justice, confidentiality, Clinical Competency, monitoring the performance of colleagues, participating in research and applying their results
Hosseini et al.	Iran	2013	Original Research	A Descriptive Study	Care, pragmatism, trust, professionalism, justice
Esmaili et al.	Iran	2021	Original Research	A Descriptive Cross-Sectional Study	Nursing process, professionalism and ethical principles
Vahidi et al.	Iran	2015	Original Research	Descriptive Study	Providing services to patients, patient care, management capabilities, improving the quality of care and education to patient
Arash et al.	Iran	2021	Original Research	Descriptive Study	Individual, structural, cultural-social, educational, managerial, economic, legal and spiritual dimensions
Arzani and Alhani	Iran	2014	Original Research	Descriptive Study	Students' awareness of professional rules and regulations
Ravipour et al.	Iran	2014	Original Research	A Qualitative Study	Individual competence: theoretical knowledge, practical skills, work experience, clinical acumen, management of critical situations, the ability to experience and analyze information, the consequences of legal, Professional ability: self-confidence, independence and authority, interest
Suleimanha et al.	Iran	2013	Original Research	Cross-Sectional study	Effective communication with the patient, basic clinical skills, application of knowledge, lifelong learning, self-care, awareness and personal growth, competence in the fields of society and

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					health care, reasoning and moral judgment, problem solving, recognizing the role of a professional doctor
Barnhoorn et al.	Netherlands	2017	Original Research	Hybrid Approach	Professional conduct domain: encounter, reflection, feedback, appearance, cooperation, privacy, performance of tasks/work responsibility: performance support
Ainsworth & Szauter	USA	2018	Original Research	Correlational study	Integrity and personal Responsibility, Motivation for Excellence, and Insights for Self-Enhancement, Personal Interactions of Compassion and Respect
Mak-van der Vossen et al.	Netherlands	2017	Review	Systematic Review	Non-participation, dishonest behavior, disrespectful behavior and poor self-awareness.
Mak-van der Vossen et al.	Netherlands	2019	Original Research	Nominal Group Technique And Thematic Analysis	Unprofessional behavior of medical students: fighting behavior, and Denial behavior
Szauter et al.	USA	2003	Original Research	Descriptive Study	Using derogatory words towards other services or patients and disrespectful behavior with others.
LeBlanc	USA	2007	Original Research	Retrospective and Case-Control	Irresponsibility, reduced capacity for self-improvement, poor initiative, disturbed relationships with students, residents, and faculty, and nurses and students being anxious or nervous
Mak-van der Vossen et al.	Netherlands	2020	Review	Review	Lack of the following dimensions of unprofessional behavior: participation, honesty, interaction, and introspection.
Sortedahl et al.	USA	2017	Original Research	Descriptive study	Change, Leadership, Communication, and Self-Awareness
Brown Jr. et al.	USA	2005	Original Research	Descriptive study	Honesty, appearance/personal hygiene, patient support, empathy, self-confidence, accurate delivery of services, respect, communication skills, Time management skills, teamwork/diplomatic skills, self-motivation
Shafiq et al.	Iran	2022	Original Research	Descriptive-Correlational Study	Nursing competence, educational skills, and communication domains
Kinoshita et al.	Japan	2015	Original Research	Survey And Follow-Up	Acceptance of gifts, Conflict of interest, confidentiality, Incompetence, sexual harassment and honesty
Morreale et al.	Ireland	2011	Original Research	Survey	Personal characteristics and interaction with patients, social responsibility
Jamal Abadi and Ebrahimi	Iran	2018	Original Research	Descriptive-Analytical Study	Lack of respect for medical dignity, lack of respect for difference, lack of self-evaluation, lack of commitment to continuous learning, lack of fairness, lack of Complying with hospital regulations and policies, not tolerating hardship and inconvenience, ignoring educational activities, denying any errors or mistakes, dishonest behavior, not observing discipline, not committing to availability, not committing to privacy, not fulfilling duties at work. Group, failure to respect professional boundaries
Lee et al.	Korea	2021	Research Original	Qualitative Thematic Analysis	"Non-participation", "disrespectful behaviors" or "poor self-awareness"
Reddy et al.	USA	2012	Original Research	Survey Study	Falsifying medical records, interrupting personal conversations in patient corridors, ordering tests as "urgent" to expedite care, making fun of others. Inattention to the learning environment, inattention to attendance time
Filipova,	USA	2018	Original Research	Cross-Sectional Survey	Bullying and physical intimidation
Fargen et al.	USA	2016	A Review	Review	Plagiarism, exam cheating, false reporting of medical examination of a sick person or falsifying working hours
Didwania et al.	USA	2017	Original Research	A Pre-Post-Test Study	Unprofessional behaviors related to social etiquette: non-acceptance, co-worker humiliation and misrepresentation of an experiment as instantaneous
Arora et al.	USA	2010	Original Research	Survey	Rejection, humiliation, misrepresentation of tests, turning off the phone, fraud, disrespect, presentation of incorrect information
Nagler et al.	USA	2014	Original Research	Descriptive study	Most Important Professional Issues: Respecting Colleagues/Patients, Balancing Home/Work Life, and Admitting Mistakes
Kulac et al.	Turkey	2013	Original Research	Descriptive Observational Study	Mocking Patients, Classmates or Physicians, Introducing Yourself as "Doctor" to Patients, Misreporting to Faculty, inappropriate clothing, discussing patients in public spaces, making derogatory comments about patients, and discussing information with patients beyond their level of knowledge.
Langenfeld et al.	USA	2014	Original Research	Observational Study	Unprofessional Behavior on Websites: Drinking, Sexually Provocative Photos, and Violation of the law of responsibility Violation of the law of accountability

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Chang et al.	Korea	2015	Original Research	Qualitative study	Honesty with patients, e) Violation of patient confidentiality, (f) Disrespect for patients, (g) Disrespect for colleagues and (h) Research misconduct.
Nah et al.	South Korea	2022	Original Research	Descriptive study	Patient Care, Communication with Colleagues, Professionalism at Work, Research, Violent Behavior and offensive language
Teherani et al.	USA	2005	Original Research	Retrospective Case-Control Study	(1) Poor reliability and accountability, (2) lack of improvement Self and adaptability, and (3) poor initiative and motivation.
Ros et al.	Italy	2021	Research Original	Qualitative Pilot Study Using A Focus Group	Patient-centered patient, competence acquisition, collaboration, need for real autonomy
Asemani et al.	Iran	2014	Original Research	Based On Literature Review And Mainly Qualitative Data	Commitment to fulfilling expectations, self-centeredness versus task-centeredness, willingness to addressing expectations, accepting expectations
Asemani et al.	Iran	2014	Original Research	Qualitative Descriptive Method,	"Individual" and "systemic" factors.

The articles were analyzed by a content analysis approach. The extracted components were categorized into six categories and 33 subcategories. The categories include educational duties, patient care, communication skills and information exchange, personal development, professional development, and observing the principles of professionalism and ethics.

The category of "educational tasks" includes seven subcategories; "appropriate performance of educational activities, acquisition of clinical knowledge and skills, critical thinking and clinical reasoning, acquisition of competence and independence, punctuality, compliance with hospital regulations and policies, evidence-based practice. Based on the review of the articles, for example, the punctuality sub-category emphasized entering and leaving the training place on time and not leaving without permission or notice, and even performing activities, especially patient-related care, at the appointed time and not delaying.

The "patient care" category extracted the components including "investigation of patient needs, accurate and complete care, new patient admission". The obtained codes indicated that the student has the responsibility of examining and taking the history of the disease and the needs of the patient and providing accurate care according to their profession. for example, the provision of the nursing care process by nursing students.

The category of "Communication, and information exchange" includes six sub-categories: "personal communication, communication with the patient and family, communication with the treatment team, availability, non-violence, and offensive language, appropriate use of virtual space, and patient education." For example, the extracted codes, in the subcategory of non-violence and offensive language, including not bullying and coercing the patient, other staff of the healthcare team, and classmates, not using obscene and obscene words leading to disconnection and annoyance, and not the physical and mental damage due to violent behavior.

The category of "professional development" included four subcategories of "professional commitment, teamwork, lifelong learning, and compliance with social considerations". For example, codes in this category include providing patient care based on participation with other students and members of the treatment team, the ability to form a team, the fair division of work between team members, the correct and timely performance of assigned tasks in the team, and the proper reporting and presentation of team performance lead to the formation of the sub-category was "teamwork".

The categories of "personal development" addressed six sub-categories consisting of "self-awareness and personal growth, self-confidence, initiative and motivation, criticality, adaptability, compliance with professional dress according to professional dignity was extracted. The subcategory of "compliance with professional dress according to professional dignity " includes adherence to the dress code following the institute's regulation regarding color, wearing a clean, neat gown, with the right size and material, using gowns only in clinical environments, and having a clean appearance.

The main category "observance of the principles of professionalism and ethics" was extracted from the six subcategories "respect, justice, privacy and confidentiality, compassion, honesty, dignity and error disclosure, management of conflict of interests". The subcategory of dignity and error disclosure includes an accurate and correct performance of tasks and not providing information and reporting on less or undone actions, not forging and cheating, reporting one's errors,

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other students, including students in different levels of education and the other members of the healthcare team and tried to fix their errors and mistakes. (Table 2).

Table 2. Dimensions and components of students' professional responsibility in clinical education

Domains	Component
Educational duties	Proper performance of educational activities
	Acquiring clinical knowledge and skills
	Critical thinking and clinical reasoning
	Acquiring competence and independence
	Punctuality
	Compliance with hospital Regulations and Policies
	Evidence-based practice
Patient care	Assessing patient needs
	Accurate and complete care
	New patient admission
Communication, interaction, and exchange of personal communication information	Communication with the patient and family
	Communication with the treatment team
	Accessibility
	Non-violence and offensive language
	Appropriate use of virtual space
	Patient Education
Professional Development	Commitment to becoming a professional
	Teamwork
	Lifelong learning
	Compliance with social considerations
Personal Development	Self-awareness and personal growth
	Self Confidence
	Initiative and motivation
	Criticism
	Compatibility
Compliance with the principles of professionalism and ethics	Respect
	Justice
	Privacy and confidentiality
	Compassion
	Honesty, integrity, and disclosure of errors
	Conflict of interest
	Respecting the dress code that is appropriate for their professional status

Discussion

The professional responsibility of the student in clinical education in the literature related to clinical disciplines in medical science education was reviewed. The dimensions and components of students' professional responsibility in clinical education, researchers' views of different professions and educational levels, and different educational fields with different opinions were described. Based on the findings of the study, the professional responsibility of students in clinical education includes six categories: educational tasks, patient care, acquiring communication skills and exchanging information, personal development, professional development, and observing the principles of professionalism and ethics.

According to the findings, one of the professional responsibilities of students in the hospital is to perform "educational tasks" which include the components of "appropriately performing educational activities, acquiring clinical knowledge and skills, critical thinking and clinical reasoning, acquiring competence and independence, punctuality, compliance with regulations and hospital policies and evidence-based practice. The responsibilities of students in clinical education should be to pay attention to educational activities such as appropriate participation in educational programs, performing correct, reliable, and timely educational activities, determining and committing to fulfilling educational expectations and outcomes, and acquiring knowledge and skills. As well, the ability to integrate knowledge in the practice of diagnosis and treatment and prevention, experience and analysis of information, critical thinking and clinical decision-making, problem-solving and clinical reasoning and moral judgment, participation in research, and application of the results were extracted in the category. Moreover, responsibilities including knowledge of professional laws and regulations and compliance with hospital policies and regulations were emphasized in the studies (3,17, 21-43).

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One of the professional responsibilities of the student in clinical education is "patient care", which includes the components of "investigating the patient's needs, careful and complete care, accepting new patients". According to the studies, the student participating in clinical education is responsible to provide appropriate, quality, and patient-centered treatment and care while taking into account the needs, feelings, and wishes of the patients and their families. Also, it is their responsibility to answer and fulfill the needs of the patients and give priority to the patient's needs (17, 22, 23, 28, 29, 32-35, 38, 42-44). Based on the review of studies, one of the important duties of students in clinical education is to take care of the assigned patient correctly and accurately, while completing the training course.

A category of the student's professional responsibility in clinical education is "communication skills and information exchange" which includes the components of "personal communication, appropriate verbal and non-verbal communication with mastering the common language with the patient and family, communication with the healthcare team, accessibility, non-violence, and offensive language, appropriate use of cyberspace, and patient education. The studies mentioned the professional responsibility of the student in clinical education including establishing proper communication at different levels, introducing themselves, and providing proper information and education to patients. As well, appropriate, effective, and altruistic interaction and behavior, and respecting professional boundaries, appropriate use of the Internet, hospital information systems, commitment to being accessible and responsive and not blocking communication channels, not bullying, abuse, and insulting words were mentioned in the studies (17, 21-24, 27, 37-39, 41-43, 45-49). Therefore, it can be concluded that communication, interaction, and proper use of information technology are key responsibilities of the student at the bedside, which should be taught in the clinical education process.

"Professional development" as a student's professional responsibility in clinical education includes the components of "professional commitment, teamwork, lifelong learning, and social considerations". Based on the review of studies on learning the principles of professionalism and recognizing the role of a profession, gaining trust, maintaining confidence and dignity of medicine, participation, sharing experiences and acquiring teamwork skills, commitment to lifelong learning, and observing social considerations such as custom and culture of the society as one of the responsibilities of the student in clinical education (17,21-22,28,30,35-36,38,45-46,50-52).

"Personal development" as a professional responsibility of the student in clinical education includes the components of self-awareness and personal growth, self-confidence, receptivity to criticism, adaptability, initiative, and motivation. The review of studies showed that the components of professional responsibility in the clinical education of students include self-awareness and self-evaluation, recognizing one's weaknesses and limitations, thinking and reflecting on one's behavior, and accepting and providing appropriate feedback for any errors and misconduct in performing tasks. As well, not resisting changes, not blaming external factors instead of solving one's shortcomings, using constructive criticism, striving and motivation for excellence, and ultimately self-improvement and personal growth, and changing behavior are addressed in the studies. Students are expected to gain the ability to resolve differences, learn from failure, and resolve conflicts by increasing tolerance of hardship and self-improvement and adapting to different conditions in therapeutic environments. Students are expected to be able to take initiative, self-confidence, motivation, and interest in learning (1, 17, 21-23, 25, 29, 30, 46, 47, 51-55). According to the literature, acquiring the components related to individual empowerment is one of the professional responsibilities of the student at the bedside, which is necessary while paying attention to identify and evaluate it, appropriate educational interventions should be planned in the educational system.

"Compliance with the principles of professionalism and ethics" extracted in this study is the student's professional responsibility in clinical education. The category includes the components of respect, justice, privacy and confidentiality, compassion, honesty, integrity and disclosure errors, and management of conflict of interests. Studies on respect for patients and colleagues, empathy, compassion, respect for patient rights, compassion, honesty, fairness in serving patients and justice, maintaining the confidentiality of patients and other information, and privacy were emphasized. the avoidance of dishonest behavior such as cheating in exams, lying, fabricating and falsifying data such as working hours and statistics, providing false information and reporting, for example, about conducting a medical examination of a patient or requesting tests as urgent to accelerate care, it was mentioned in the studies. The students needed to report the risky and/or inappropriate behavior of others and report their own and others'

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mistakes. Moreover, adherence to conflict of interest management principles and do not abuse the professional position is considered (21, 23, 25, 26, 32-36, 41, 48, 50, 51, 55-59). Therefore, students in clinical education are obliged to comply with the rules of professionalism and ethics.

Limitation: The scoping review of the components and dimensions of the student's professional responsibility in clinical education is one of the strengths of this study. This study has some limitations. The collection of studies presented in this review may not show all the articles on student professional responsibility in clinical education, which could be due to the use of the term "professional responsibility", especially since this term was not found in Mesh and the related term are used in the search of the literature. Also, the lack of access to the full text of some studies is one of the limitations of this research, which was tried to be solved by correspondence with the authors and inter-university links. In addition, the review of Persian and English language studies and the exclusion of other languages are a limitation of the study.

Conclusion

In this study, according to the five-stage model of the scoping review, students' professional responsibilities in clinical education are divided into six categories, including educational duties, patient care, communication skills and information exchange, personal development, professional development, and observing principles of professionalism and ethics. Factors and dimensions affecting the student's professional responsibilities in the education process can be used in the planning of educational programs and courses to improve the professional responsibility of students in clinical education. In addition, it is suggested the categories and components could be used to assess students in the clinical education program.

Ethical considerations

This study has been approved by the Ethics Committee of Smart University of Medical Sciences with the code IR.VUMS.REC.1401.013.

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Conflict of interest

The authors declare to have no conflict of interest.

Author contributions

Both authors participated in all stages of research and manuscript approval.

Data availability

The End Note file of article search results is provided by the corresponding author.

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