Exploring Ethical Theories Among Medical Residents in Clinical Situations: A Cross-Sectional Study

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Abstract- Human beings are faced with numerous behavioral options in different situations, but they can only choose a limited number of them. Ethical beliefs, values, and principles guide individuals in decision-makings. This study focuses on medical residents' perspectives towards four ethical principles (Deontology, Utilitarianism, Virtue, and Principlism) in various clinical situations. This descriptive-analytical study was performed cross-sectional basis among a population of medical residents of Shiraz University of Medical Sciences. Data were gathered by multi-stage cluster sampling method using a researcher-made questionnaire including demographic information and five different clinical scenarios. The data were analyzed using the Chi-square test and descriptive and inferential statistics in SPSS22. The results of this study showed that there was no significant relationship between gender, specialty, year of study, and the four ethical principles mentioned in the participants. However, a significant correlation was observed between the types of scenarios and their alignment with a particular type of decision or ethical theory. The ethical philosophy of medical residents has been evolving gradually over time, even before entering the residency period. Therefore, focusing on practical ethics training and the commitment of residents to implementing the principles and values of professional ethics can shape the ethical philosophy of residents towards professional ethics and humanity.

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Introduction

Human beings have always been faced with a variety of behavioral options, and can only select a limited number of them (1). Acting wisely by considering all the options and the final effect of each option on human happiness and perfection plays a crucial role in decision-making (2). Ethical beliefs, values, and principles guide individuals in their decision-making processes (3). Medical ethics is a fundamental aspect of professional medical practice, and it is crucial to comprehend the ethical beliefs that medical residents adhere to in order to enhance patient care and results (4). Ethical principles serve as a structure for assessing and directing conduct, guaranteeing that medical choices adhere to professional norms and social anticipations (5).

The literature on medical ethics underscores the complexity and variability of ethical decision-making in clinical practice. For instance, previous studies have shown that ethical decision-making is influenced by numerous factors, including personal values, cultural norms, and professional guidelines (6). Moreover, the informal learning experiences that occur within the clinical environment, plays a significant role in shaping the ethical perspectives of medical trainees (7). There has been an increasing recognition in recent years of the necessity for thorough ethics teaching in medical training programs.

Research has emphasized the deficiencies in ethics education, indicating the necessity for organized, ongoing, and hands-on instruction in professional ethics (8). A study by Hartronft investigating the impact of values and ideologies on decision-making and responsible behavior was conducted in Florida in 2009.

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In this study, idealism was found to have an effective role in professional values, and the ideologies of absolutism, exceptionality, situationism, and subjectivism had the highest scores on clinical decision-making, respectively (9). Another study by Malloy et al., conducted on 1255 doctors from different nationalities, found that, in general, religion has a direct relationship with idealism and an inverse relationship with relativism (10).

Medical residents, as representatives of the medical community play an important role in treating patients, and are bound to make their decisions based on one or a combination of moral principles. The present research is an attempt to understand the mental attitude for medical residents of Shiraz University of Medical Sciences in the four main areas of deontology, utilitarianism, virtue, and principlism, which could draw a general picture of their personalities and their dominant thinking, and, probably, an appropriate approach for evaluating the professional ethics training system and the improvement of factors affecting the formation and modification of their thinking and function during their years of study.

Materials and Methods

Study design

In the present descriptive-analytical and cross-sectional investigation, 243 medical residents of Shiraz University of Medical Sciences were studied through multi-stage cluster sampling method. Each specialized field of study were considered as a cluster, and from each field participants were selected through convenience sampling method, until the number of participants reached the desired sample size. The sample size was determined using the Cochran formula. After selecting the residents who were not available or willing to participate did not participate in the study.

Information gathering tools

In this study, a researcher-made, two-part questionnaire was used to collect the necessary information (Suppl. 1). The initial form of the questionnaire was designed after reviewing previous studies related to the topic and searching for Internet and library resources. The questionnaire was comprised of two parts: the first part consisted of questions from the residents' profiles, including their specialized field of study, the year of residency, gender, and factors influencing clinical decision-making.

Considering that we were seeking to understand the dominant attitudes regarding the mental state of medical residents, in the second part of the questionnaire, five different scenarios of clinical decision-making situations were designed based on the opinions of experts and cases that occurred more frequently in our educational environments and were familiar to all residents in various fields and were selected and approved by professors. Each scenario consisted of four choices or decisions, with each option indirectly representing one of the four ethical principles that were examined: deontology, utilitarianism, virtue, and principlism.

The participant was asked to choose one option from A to D after reading each scenario, and their seriousness and insistence on this decision was scored from 1 (lowest) to 5 (highest). At the end of each scenario, the residents, could express their opinion, personal experience, or reasons for making the decision if desired. In order to examine ethical principles indirectly through scenarios and to increase the accuracy of the questionnaire and prevent bias, the order of options related to principles was changed in two scenarios.

Scenario one dealt with decision-making in emergencies, which endangers the patient's life if the doctor neglects it. Scenario two was a qualitative scenario that evaluated the examinee's personal opinion about patient resuscitation. Scenario three examined individuals' selection of appropriate treatment in non-emergency and outpatient settings, taking into account the family's conditions and circumstances. Scenario four examined an individual's reaction to negligence resulting in a patient's death. Scenario five placed the individual in a decision-making challenge regarding end-of-life care, prioritizing the patient's well-being, the healthcare system, and their own professional ethics and conscience.

The face and content validity of the questionnaire were evaluated by four faculty members of the medical ethics group, and the final version was approved by consensus among them. The reliability of the questionnaire was evaluated using the test-retest method. The reliability of the questionnaire was evaluated using the test-retest method with a group of 25 medical residents.

Data analysis

The Chi-square test was used to determine the correlation between the test and retest results, and three measures (Cramer's V, Phi, and Spearman) were used to assess the correlation due to the nominal variables. The P-value was calculated for each scenario separately, and a significant correlation was found between the test and retest results ($P<0.001$). Cramer's V statistic showed a strong correlation in all five scenarios ($V>0.7$). Descriptive statistics (including frequency, percentage,

cumulative percentage, mean, and standard deviation) and inferential statistics were analyzed using SPSS version 22. The Chi-square test was used to analyze the data, and the *P* was reported to indicate statistical significance.

Results

In this research, 243 questionnaires were presented to residents. Of these, 179 questionnaires were completed and delivered correctly (Response rate: 73%). Table 1 shows the participants' demographic information. According to Table 1, there was no significant difference between respondents' answers based on their specialized field of study their different academic years, and their gender with their tendency toward principles ($P>0.05$).

In Table 2, the abundance of the principles of the residents are presented for each scenario. According to the results, there was a significant relationship between the types of scenarios and the trend toward principles ($P=0.001$).

Table 1. Demographic characteristics of participating medical residents

Demographic variables		Number	Percentage	*P*
Specialized field of study	**Internal medicine**	39	21.8%	0.251
	Cardiology	24	13.4%	
	Pediatrics	24	13.4%	
	Pathology	10	5.6%	
	Psychiatry	15	8.4%	
	Obstetrics and Gynecology	24	13.4%	
	Ophthalmology	13	7.3%	
	General surgery	30	16.8%	
Year of study	**Year one**	42	23.5%	0.418
	Year two	48	26.8%	
	Year three	51	28.5%	
	Year four	38	21.2%	
Gender	**Female**	83	46.4%	0.571
	Male	95	53.1%	

Table 2. The frequency of medical residents' responses to the scenarios based on the four investigated principles

Scenario	First scenario	Second scenario	Third scenario	Fourth scenario	Fifth scenario	All scenarios
Moral school	**Number (%)**	**Number (%)**	**Number (%)**	**Number (%)**	**Number (%)**	**Number (%)**
Deontology	8 (4.4)	84 (46.9)	7 (3.9)	63 (35.2)	70 (39.1)	232 (25.9)
Utilitarianism	5 (2.8)	16 (8.9)	15 (8.4)	37 (20.7)	10 (5.6)	83 (9.3)
Principlism	44 (24.6)	16 (8.9)	135 (75.4)	14 (7.8)	54 (30.2)	263 (29.4)
Virtue	12 (68.2)	63 (35.3)	22 (12.3)	65 (36.3)	45 (25.1)	317 (35.4)
All	179 (100)	179 (100)	179 (100)	179 (100)	179 (100)	895 (100)
P			0.0001			

Discussion

In this study, residents in various fields of specialization and different academic years were studied. The results of this study showed that the residents were more inclined toward the following principles: deontology, utilitarianism, virtue, and principlism. The results of this study showed that there is no meaningful relationship between sex and academic year and their ethical thinking, and this thinking does not change significantly during the years of adolescent education. But there was a meaningful relationship between the type of hierarchy and the tendency towards moral principles; in other words, the majority of residents in the described conditions in each scenario had almost the same performance.

In the first scenario, an individual in an emergency where the patient's life is at risk is bound to make ethical decisions that selected 68.1% of the virtuosity school attendants. This means that they are doing their best to identify and treat the patient faster; in other words, they value the principles of autonomy and freedom. The study by Eastman *et al*., examines doctors in terms of the extent of their commitment to and violation of health system regulations. The result was almost the same, and physicians, despite not being allowed to refer to an expert,

referred the patient to a specialist because they considered the patient's life more important than his fines and laws (11). In Eastman's study, a person chooses between the priority of the patient and the priority of the system, and in two idealist and relativistic states, he expresses his decisions, but in the present study, the person makes several different decisions according to his justification, and only in practical decision conditions are individual ideals explored (11). The justifications of each individual are the criterion for choosing action.

The second scenario generally examines the personal opinion of the residents about restoring patients, and a similar study in this scenario has not been performed. The majority of workers were task-oriented in this scenario, believing that every patient should be restored appropriately with adequate time regardless of the underlying condition or response, and 35.2% of them are virtuous, meaning that if the patient's quality of life changes with relief, it does not require restoration according to the relevant instructions, but this does not mean a short delay in performing the task and neglecting the patient. In this scenario, ladies and gentlemen's residents had more deontology and virtue in all disciplines and academic years, and utilitarianism and principlism were less prevalent than in the previous two principles.

Scenario number three, which examines a person in an outpatient setting, chooses to treat a person in terms of his or her illness and his or her family's financial situation. In this scenario, 75% of the residents choose fundamentalism, or, in other words, to continue the treatment of the patient. Parents are involved in choosing a treatment that respects the principle of autonomy. The lowest rate of attitude towards the task force was that only 9.3% of the residents simply ordered the patient to prescribe the best medicine for their patients, and others were considered more or less financially dependent on the family to choose the medicine. No similar study of regarding scenario has been carried out.

The fourth scenario examines the reaction of residents in the event of death leading to death, which saw the attendance of most of the two principles of virtue and task. It seems that those who choose duty and who themselves feel bound to tell the truth have less seriousness than the other two principles; they seem to be more ideal than others, while the group that chose virtuosity seems to be struggling to make up for the release of the torture of conscience. In this scenario, most residents chose virtue, deontology, utilitarianism, and principlism, respectively. A study by Mazor and colleagues about medical misconduct found that patients were willing to refer medical errors to unexpected results (12). They are aware of their care, but healthcare workers do not report errors due to legal issues. The results of this study are contrary to the results of the Mazur study, and their residents are required to disclose their failures, but most residents in this scenario are more idealistic than their clinical practice in the hospital because the subject of complaints from doctors about medical misconduct plays a major role in making such decisions in hospitals in our country.

The fifth person's lesson is challenged to decide on the end of the patient's life, and the person between the patient's priorities must be selected, taking into account the limited facilities of the system of treatment, conscience, and professional ethics. One who is responsible for his duty to keep the patient under the ventilator as long as he is alive, who is profitable because he does not consider the current situation to be of benefit to the patient and the hospital, encouraging him to cut off the device, who is guilty of principle, although he agrees to discontinue the device but leaves the final decision to his family, and someone virtuous despite the great value that he needs for the patient, but to save the lives of other patients in need, the ICU is trying to get the family to stop the device. The decisions of the residents did not differ significantly, and, following their duties, fundamentalism and virtue were considered more, and the lowest tendency was 5.6%.

It was implicitly found that most of the residents were not willing to do anything directly or indirectly because they were not desirable and did not benefit from more care, which seems to be due to the fear of the torment of conscience and the requirement for professional ethics and religious beliefs because religious belief is a balance between duty and virtue and belief in religious principles. Participating residents, even according to the criteria of this questionnaire in the previous scenarios, are profitable and virtuous. It seems that due to the religious culture of our society, the beliefs of individuals and the religious beliefs of the community are merged. And, even though people in the previous scenarios were more likely to follow a school, in the fifth scenario, the religion of the community had an impact on their decision-making, and there was not much difference between school orientations.

In total, among all the residents, only one of the residents in the first year of the surgical procedure tended to virtue in all scenarios, and others were not following a particular school in all scenarios and, depending on the circumstances of their decision-making, were different. In short, the present study showed that there was no

significant correlation between the individual philosophical style of the residents and the clinical decision-making, and each person, based on different circumstances, had to examine various data and evaluate different decisions that were not necessarily in the context of a particular school. It can be concluded that the particular characteristics of these styles require individuals with a particular philosophical thinking style to independently deal with them; therefore, the role of the style of individual philosophical thinking diminishes in clinical decision-making because of its team-forming nature.

One critical aspect highlighted in the literature is the role of educational system defects in shaping professional behavior. Alipour *et al*., discovered notable obstacles within the educational system at Tehran University of Medical Sciences (8). These obstacles include insufficient initial training, a lack of ongoing education, and a dearth of enthusiasm for professional education among clinical staff. The presence of these barriers obstructs the adherence to professional conduct, indicating that it is crucial to implement changes in the educational system in order to encourage ethical behavior among medical professionals. Another study conducted by Samadi *et al*., provides additional evidence for this claim by highlighting the importance of rigorous and ongoing training in professional conduct (13). This study highlights the influence of educators' shortcomings, such as limited knowledge and insufficient expertise in professional behavior management, on the ethical growth of medical residents. This discovery is consistent with our findings that the moral principles held by residents are not only shaped by their formal education, but also by the informal teachings imparted by their mentors and senior colleagues.

Asghari *et al*., emphasized the need of establishing a conducive environment that promotes professional conduct (14). Creating dependable assessment instruments to evaluate the professionalism climate can assist in identifying deficiencies and areas that need enhancement. This will ensure that medical residents receive the essential direction and feedback to improve their professional conduct. Moreover, based on a previous qualitative investigation, elements such as individual moral philosophies, personal values, and cultural background have a significant impact on the formation of ethical conduct. This study emphasizes the necessity of individualized methods in ethics instruction, specifically designed to tackle the distinct moral environments of medical residents (15).

The study "Relationship between Misconduct of Medical Professionalism with Burnout Syndrome and Related Factors" investigates the correlation between professional misconduct and burnout syndrome (16). This implies that there is a strong connection between ethical failures and a significant amount of exhaustion, highlighting the importance of support structures that cater to the physical and emotional welfare of medical residents. This discovery emphasizes the significance of comprehensive approaches in medical education that take into account the emotional and psychological well-being of trainees. Our study concludes that it is essential to provide thorough and ongoing ethical instruction in medical training. By integrating the results of relevant studies conducted in Iran, a more comprehensive comprehension of the systemic and individual elements that impact professional behavior is achieved. To promote ethical decision-making and professional conduct among medical residents, it is essential to tackle educational obstacles, improve mentorship, and create a supportive professional environment.

Limitations

The existence of a large number of assistants studying in all specialized fields in teaching hospitals affiliated to the Shiraz University of Medical Sciences, the appropriate cooperation of the managers of educational groups, and scenarios designed based on the most common ethical challenges were among the strengths of this research. The main limitation of this study was the lack of cooperation of the medical residents due to their busy schedules.

Considering that the individual's philosophy over the years in the family and later mainly in the clinical space is shaped by his personal experiences and observing the behavior of senior faculty and students, attention to the teaching of professional ethics is practical. Investigating and solving the ethical challenges and ethical issues created during the medical students' training and the implementation of the principles of professional ethics by professors and residents can form the individual's ethical philosophy efficiently and form part of the commitment to the principles of professional and human ethics.

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