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Investigating the Moral Sensitivity of Medical Students in the Preclinical and Late Clinical Courses

Shabnam Bazmi[1], Fahime Samadi[1], Mina Forouzandeh[2]*

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Abstract

Background: Paying attention to moral issues is one of the essential requirements of medical practice, and moral aspects must be considered in making decisions to achieve the desired results and ensure the patient's satisfaction. Moral sensitivity is one of the components that enable physicians to act ethically in their decisions. Since medical students must acquire the necessary skills to deal with patients properly in clinical courses, the current paper examines the moral sensitivity of medical students in both preclinical and late clinical courses.

Methods: This is a cross-sectional study performed on 180 medical students in the preclinical and late clinical course. The study tool is an adapted version of the Kim-Lutzen ethical sensitivity questionnaire with 25 items and Likert scoring 0-4. The obtained score can be between 0-100. Data was analyzed using SPSS25. Statistical t-test or its non-parametric equivalent (Mann-Whitney) was used for quantitative variables and Chi-square or Fisher exact tests were used for qualitative variables. Pearson's correlation coefficient was used to measure the correlation of the variables.

Results: The mean age of stagers and interns was 22.7 + 0.85, and 26.5 + 1.11. 41 (51.2%) of stagers and 51 (63.7%) of interns had a history of participating in workshops related to medical ethics, and 4 (5%) of the former and 3 (3.8%) of the latter had previously conducted research in the field of medical ethics. there was a significant relationship between the stagers' history of conducting research in the field of ethics and their moral sensitivity. Concerning moral sensitivity components, the highest scores belonged to "altruism and trustworthiness", "the use of moral concepts in moral decisions", and "respect for the patient's autonomy" in both groups., 95% of stagers and 98.8% of interns had medium level (51-75) of moral sensitivity.

Conclusion: Medical students' moral sensitivity did not increase significantly during the clinical course. It is necessary to review and reconsider medical ethics educational methods, the time allocated to relevant courses, and the practical need for clinical education in addition to theory. Directing research projects and student dissertations toward topics related to medical ethics can also contribute significantly to enhancing moral sensitivity.

Keywords: Moral sensitivity, Medical students, Moral decisions

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Introduction

The world is witnessing a continuous progression. In medical and paramedical sciences, in addition to patient satisfaction, ethical decision and policy making is very important and need enough sensitivity (1). Given the importance of ethics in patient care and treatment, which is the fundamental objective of medicine, the medical community should enhance their capacity and experiences to identify ethical situations and increase moral sensitivity when providing services. Thus, the values, attitudes, moral norms, social skills, and all components forming professional and committed physicians should be developed and

Corresponding author: *Dr Mina Forouzandeh, foroozandeh.m@gmail.com*

1. Department of Medical Ethics, School of Medicine, Shahid Beheshti University of Medical Sciences, Tehran, Iran
2. Department of Medical Ethics, School of Medicine, Iran University of Medical Sciences, Tehran, Iran

↑What is "already known" in this topic:
Having an acceptable level of moral sensitivity is an important part of medical decisions, patient care and medical policy-making.

→What this article adds:
It seems that the current program of teaching medical ethics to medical students needs changes to increase the level of moral sensitivity.

reinforced in addition to strengthening the level of knowledge (2). As a part of professional competence, moral competence consists of moral sensitivity, moral reasoning, moral integrity, and moral courage. Considering these components, the first two are cognitive, and the other two are attitudinal, which affect each other dynamically and form moral behavior (3). According to James Rest, moral development requires sequential development of these components in an individual, from moral sensitivity to reasoning, integrity, and courage (4).

Moral sensitivity is the ability to identify the existing moral issue and represents the process by which individuals perceive the presence of an ethical dilemma, understand moral situations, and make the right ethical decision on taking the appropriate measures (5). In other words, moral sensitivity means interpreting the situation, awareness of moral aspects and factors related to certain conditions, and determining the appropriateness of the related ethical response in ethical behavior, rest introduced this component, later known as moral sensitivity (6, 7). Lutzen defined moral sensitivity as the ability to interpret the reactions and feelings of others. In other words, moral sensitivity leads to a correct understanding of the needs of patients and their families, which precedes appropriate ethical reasoning and decision-making (8). Moral sensitivity is not only recognizing the patients' ethical conflicts but also includes the correct understanding of their condition (9). Kolberg presented a four-component moral theory, according to which moral decision-making consists of moral sensitivity, moral judgment, moral motivation, and moral character. Thus, moral sensitivity is the first step in the moral decision-making process and precedes moral judgment. Hence, healthcare workers must enhance their moral sensitivity before making moral decisions (10, 11). Moral sensitivity is a cognitive capacity acquired through experience (12, 13). There is a dire need to consider ethics in medical decision-making, while moral sensitivity plays an underlying role in developing physicians' moral competencies. In the meantime, the ongoing progress of medical science has faced physicians with new moral challenges (e.g.,in telemedicine, gene therapy, etc.). Medical students practically face moral issues during the clinical course as part of their education and after graduation, which must be solved by them. Thus, the current research investigates the moral sensitivity of students in the preclinical and late clinical courses to examine and highlight the existing problems and facilitate planning to deal with the current situation.

Methods

The present cross-sectional study was performed on the medical students of Shahid Beheshti University of Medical Sciences in the early and late clinical course. As determined by Gpower software, prior to use, official permission was obtained, and the maximum sample size was 160 (80 in each group), considering the standard error (α) of 0.05 and the mean effect size of 0.3. Convenience sampling was used to select samples from those meeting the inclusion criteria (the students who were at beginning of 5th year of graduation in one group and at the end of 7th year in another group, willing to participate in the study and medical students of Shahid Beheshti University of Medical Sciences).

Kim Lutzen's 30-item questionnaire was used as the data collection tool, designed in six separate sections. Prior to use, official permission was obtained. The original questionnaire was designed to evaluate moral sensitivity in physicians, but the aim of our study was to evaluate moral sensitivity in medical students during their clinical course as an indicator of our teaching efficacy and due to the differences in research subjects, some questions seemed to need to be changed. After some changes, the content validity index (CVI) was used and the scale was sent to 10 experts for validation after twice validations, it was accepted with an interrater agreement of 82% and the required modifications were done as follows: 4 questions were about psychiatric practice which deleted from the questionnaire, 2 questions merged together and 1 question changed. The internal consistency coefficient was used for assessing reliability. The scale was presented to 20 experts.Cronbach α and test-retest were calculated as 78% ($P < 0.01$) and 92%, respectively . Finally, the 25-item questionnaire was used in six dimensions of moral sensitivity, including respect for patient autonomy, awareness of communication skills with patients, professional knowledge, experiencing moral conflict, the use of moral concepts in moral decisions, and trustworthiness and altruism. A 5-point Likert scale (0-4) was used to evaluate the questions, with 100 and 0 as the highest and the lowest scores, respectively. Also, the scores 0-50, 51-75, and 76-100 indicated low, moderate, and high levels of moral sensitivity, respectively. The questionnaire started with the participant's demographic information, including age, gender, and history of participating in seminars, workshops, and courses related to medical ethics or conducting related research. After obtaining the code of ethics (IR.SBMU.MSP.REC.1397.655), the study population completed informed consent forms to participate in the project, and the completed questionnaires were then analyzed using SPSS25. Statistical t-test or its non-parametric equivalent (Mann-Whitney) was used for quantitative variables and Chi-square or Fisher exact tests were used for qualitative variables. Pearson's correlation coefficient was used to measure the correlation of the variables. The confidence and significance levels were 95% and <5%, respectively, in all tests. The study followed all ethical considerations such as anonymity of questionnaires, voluntary participation, informed consent, and general codes of ethics.

Results

The mean age of stagers and interns was 22.7 + 0.85 and 26.5 + 1.11, respectively, with 58.8% of the former and 56.3% of the latter consisting of males. Besides, 41 (51.2%) of stagers and 51 (63.7%) of interns had a history of participating in workshops related to medical ethics, and 4 (5%) of the former and 3 (3.8%) of the latter had previously conducted research in the field of medical ethics. There was no significant relationship between the age of stagers and interns and their moral sensitivity ($P = 0.588$, R= 0.062 in stagers and $P = 0.850$, R = 0.021 in interns). Also, there were no significant differences between the gender of stagers and interns and their moral sensitivity. According to the

Table 1. Distribution of moral sensitivity items among stagers and interns

Ethical sensitivity Items	Stagers		Interns		*P*-value
	Mean	S.D	Mean	S.D	
Communication with patients	4.95	2.39	4.26	2.37	0.070
Professional knowledge	4.82	1.43	5.15	1.38	0.147
Experience with ethical issues	3.17	1.70	2.94	1.39	0.011
Using ethical phrases in decision making	7.78	2.49	6.05	2.76	0.049
Altruism and trustworthiness	12.06	3.11	12.57	2.80	0.274
Respect for autonomy	5.72	2.13	5.60	1.73	0.072

Table 2. Total moral sensitivity score in stager and interns

Moral sensitivity score	Stagers		Interns		*P*-value
	Number	%	Number	%	
Low (0-50)	4	5	1	1.2	0.173
Medium (51-75)	76	95	79	98.8	
High (76-100)	0	0	0	0	
Total	80	100	80	100	

research findings, there were no significant differences between the history of participation in medical ethics seminars and workshops and the level of moral sensitivity. However, there was a significant relationship between the stagers' history of conducting research in the field of ethics and their moral sensitivity (37.5 + 16.94 vs. 35.6 + 6.97, $P = 0.002$), but this relationship was not significant for interns.

Concerning moral sensitivity components, the highest scores belonged to altruism and trustworthiness, the use of moral concepts in moral decisions, and respect for the patient's autonomy in both groups. Table 1 shows the distribution of the components of moral sensitivity for stagers and interns. As can be seen, 95% of the stagers and 98.8% of interns had moderate moral sensitivity. Table 2 indicates the score distribution of moral sensitivity for stagers and interns.

Discussion

According to the results of the present study, the mean and standard deviation of the moral sensitivity scores had no significant differences in stagers and interns. Research conducted on junior and senior internal medicine and surgical residents in 2020 obtained similar results (14). However, a study performed on third- and eighth-semester nursing students in 2018 showed a significant increase in their moral sensitivity in the eighth compared to the third semester (15). Another study on nursing students in 2010 showed higher levels of moral sensitivity in third-year than in fourth-year nursing students (16). A study found that senior nursing students had more moral sensitivity than juniors (17). A study investigating medical professionals in 2015 confirmed their high level of moral sensitivity .

According to the results of the above studies, although nursing students can experience an increase in moral sensitivity during their teaching courses, there is no significant increase in moral sensitivity, which is the basis for moral decisions, in medical and specialty students. Physicians mainly experience higher levels of moral sensitivity through experience and after graduation, which reveals the necessity of reviewing the educational methods in medical and specialty courses. For example, medical students can receive medical ethics education during their clinical courses, when they are in more contact with the patients, instead of during the pre-clinical period. In the meantime, specialized courses need education and ethical supervision in clinical wards (18).

According to the current study, stagers and interns had moderate moral sensitivity, consistent with a study conducted on nursing students of Hamadan University of Medical Sciences in 2020 (19) and nursing students of Bushehr University of Medical Sciences (15). However, a study conducted on nursing students in Mashhad in 2016 found that nursing students and graduates of the Islamic Azad University of Mashhad had high and desirable levels of moral sensitivity (20). Yet, this difference can be attributed to the experience of their research population, which included nurses working in clinical wards, and its effects on increasing moral sensitivity. However, the literature review highlights the necessity to spend more time and energy on developing students' moral sensitivity. Although most studies have indicated ideal levels of moral sensitivity between 50% and 75%, there should be high-priority plans to enhance the moral sensitivity of medical and specialty students, considering the importance of the medical profession and their need to make moral decisions in daily activities.

The study also showed that stagers had significantly higher scores in comparison to interns in terms of experiencing moral conflict and the use of moral concepts in moral decisions, which was similarly found in another study conducted on junior and senior internal and surgical residents (14). According to these findings, students have a relatively convincing level of moral sensitivity in their preclinical course, which provided them with medical ethics education; however, this sensitivity decreases to some extent during their clinical courses due to less supervision and ethical training. In addition, they may pay less attention to moral points in decision-making and gradually lose their moral sensitivity as they become more engaged in their work and need to make urgent decisions. A study on students completing their gynecology and obstetrics course, which is usually stressful and busy, confirmed their significantly lower levels of moral sensitivity in the post compared to the pre-training courses. Since these students did not have enough sensitivity to involve patients in their care

and treatment, they experienced moral dilemmas and conflicts in practice. It also seems that the lack of appropriate moral sensitivity results from the effects of the educational environment of hospitals or the hidden curriculum (21, 22). In other words, influenced by other collaborative groups and role models such as professors and residents, medical students face problems in correctly implementing moral behaviors and become more prone to moral indifference (22). Hence, although professional ethics education is integrated into the curriculum of medical students, there are doubts about whether it can lead to higher levels of moral sensitivity (23, 24).

Research on stagers and interns showed that those with a history of participating in medical ethics workshops or seminars did not have significantly different moral sensitivity scores from those who did not participate in these courses. Meanwhile, a study conducted in Saudi Arabia showed that medical ethics extracurricular education contributed significantly to increasing physicians' moral sensitivity (25). Thus, it is necessary to focus on the practical effects of designing and implementing such workshops.

The study showed that stagers with research experience in medical ethics had significantly higher moral sensitivity than those lacking such experience. Nejad Sarvari et al. also highlighted similar results, indicating that participation in medical ethics courses increased moral sensitivity significantly. Thus, encouraging medical students to participate in medical ethics research projects and their involvement in extracurricular ethical issues can effectively increase their moral sensitivity and sense of self-efficacy in students and reduce their distress when dealing with moral dilemmas (18). Mattic et al. (2006) proposed that medical ethics professors have to persistently review ethics programs in research and come up with novel and innovative ideas for effective ethics learning; otherwise, there will be a potential failure in ensuring physicians' ethical behaviors in the future (26). Goldi et al. stated that professors should plan students' abilities to think critically about ethical issues and achieve their goals of increasing students' moral capacities through effective research, which will lead to more morally sensitive physicians (27).

In addition to its strengths, the current study also faced some limitations, including its cross-sectional nature. The study also had descriptive research limitations, such as the inability to control confounding and background variables, making it difficult to investigate the causal relationships. Consequently, similar to other descriptive studies, the results of the current paper should be analyzed and generalized with caution. Further research on other underlying factors that increase moral sensitivity and, ultimately, moral decision-making in healthcare and treatment-related issues can also be helpful.

Conclusion

The results showed that although there was a relative increase in moral sensitivity in some areas of medical ethics, such as altruism and trustworthiness, and professional knowledge, medical students' moral sensitivity did not increase significantly during the clinical course and was only at a moderate level. Hence, it is necessary to review and reconsider medical ethics educational methods, the time allocated to relevant courses, and the practical need for clinical education in addition to theory. Directing research projects and student dissertations toward topics related to medical ethics can also contribute significantly to enhancing moral sensitivity. Since the current workshops have not led to a significant increase in medical students' moral sensitivity, there should be changes in both contents and how medical ethics workshops are held for students. Practical workshops on medical ethics can familiarize students and graduates of the medical field with the ethical issues and dilemmas across hospital wards and teach them the correct methods of moral decision-making and critical thinking. It is also helpful to benefit from professors who can provide an ideal practical role model for students.

It is noteworthy that with the recent changes in the course schedule based on the national curriculum of medical students, the medical ethics course is presented in the clinical period, whose positive results will hopefully be highlighted in future studies.

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Ethical Considerations

Participant's entry into the project was completely voluntary. All obtained data remain confidential, the necessary information was given to the volunteers and their consent was obtained.

Conflict of Interests

The authors declare that they have no competing interests.

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