ORIGINAL ARTICLE

A Holistic Approach to Teaching Medical Ethics: A New Trend to Accountability in Medical Education

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ABSTRACT

Medical ethics course has recently entered the curriculum of medicine. The interdisciplinary nature of this course (experimental sciences and humanities) necessitates a unique teaching and evaluation method. The present study aimed to design holistic approach to teaching medical ethics and its effect on moral reasoning indicators (moral Sensitivity and Moral Intelligence) knowledge and performance of medical students. The present quasi-experimental single group pretest- posttest study was performed in 2017 on 40 medical students who were studying medical ethics course in first half of the academic year in Jahrom University of Medical Sciences. Students were taught using holistic approach (flexible and interactive learning). Evaluating students' knowledge and performance in the form of online peer discussion and multiple-choice questions and Objective Structured Clinical Examination (OSCE) test. Data collection instruments included the Moral Sensitivity Questionnaire (MSQ) developed by Kim et al. (1994) and the Moral Competency Inventory (MCI) developed by Lennick and Kiel (2005), completed before and after the intervention. The Persian version reliability of the MCI instrument (r=0.94 by Mokhtarpour) and MSQ (r= 81% and 97% by Hosseinpour et al) were confirmed. In addition, experts approved its face validity and five members of the faculty approved the validity of OSCE. Data were analyzed using paired-samples t-test and independent sample t-test. A significance level of 0.05 was considered to be statistically significant. The level of moral intelligence and moral sensitivity increased in women and men following the intervention ($p<0.0001$). There was significant correlation between students' online peer discussion, Multiple choice exam, OSCE, moral intelligence and moral sensitivity after intervention ($p<0.0001$). The results showed that, the students' mean scores of moral intelligence, moral sensitivity, and learning were increased by the application of educational strategy based on holistic approach.

Keywords: Medical education; Medical ethics; Moral reasoning; holistic approach; discussion forum

INTRODUCTION

Today, medical ethics education is a highly essential part of medical education. It is the science of examining the appropriate and inappropriate behaviors which must be considered by those working in the field of medicine[1]. Medical ethics education has a 2500-year history. In the past decade, however, the treatment team has faced morally complex situations while making decisions for patients because of quick progress in modern medical sciences and biotechnology[2].

To realize values in medical education, attention must be paid to values, and effective planning is the first step to achieve this end. A value-based syllabus transfers values through appropriate content and educational programs, paves the way for achieving higher levels of knowledge, gives meaning to life, and helps learners attain a deeper feeling while making them more rational[3].

Evidence suggests that medical progress has weakened the doctor-patient relationship. The study by Mc Donald et al. showed that 88% of students believe in the special status and importance of Medical Ethics course in medical education. Moreover, 84% of students believe that this course has a vital role in providing a desirable treatment .Some studies suggest that students achieve higher levels of moral reasoning after passing this course and have a better understanding of moral points. Teaching medical ethics with conventional methods enhances students' knowledge of medical ethics but has no effect on their professional performance in clinical settings[4].

The moral development model was introduced by Lawrence Kohlberg in late 1950s. He believes that moral judgment is developed in 5 stages, indicating the cognitive structure of moral thinking. He emphasized the role of cognition in moral development and ignored the role of other moral aspects. Years later, Gilligan stated that the difference in morality between women and men was ignored in Kohlberg's theory of moral development. Omid et al. confirmed Gilligan's idea and showed in a meta-analysis that women have a higher moral sensitivity than men[5].

A four-component model of morality was put forward by Rest (1983) in a book on child psychology. The four psychological components of Rest's model were named by other researchers as moral sensitivity, moral judgment, moral motivation, and moral character. Numerous studies have been conducted on moral reasoning. However, it predicts only 10% to 20% of the variance of moral behavior. In addition to this Kohlbergian four-component model, Rest proposed a tool for measuring moral reasoning, named the Defining Issue Test (DIT)[6]..

Moral intelligence and sensitivity are concepts associated with moral reasoning. Borba defines moral intelligence as the capacity and capability to understand right from wrong, having strong moral beliefs and acting based on them, and behaving in a correct and acceptable manner[7].

Moral sensitivity modifies the relationship between moral motivation and moral reasoning and increases accuracy in physicians' performance. Moral sensitivity means the ability to identify moral problems, evaluate and

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perceive the consequences of decisions (including the interpretation of others' reactions and feelings and understanding the cause-effect chain of the problem). Moral sensitivity creates basic reaction and attitudes in physicians so that they can provide effective and ethical care to patients[8].

One of the important supported approaches to education is the constructive education. The constructivist approach considers knowledge a constructive matter, i.e. learners create new knowledge by combining their past knowledge and present information (including information possessed by teachers, books, and scientific experience)[9]. A concept related to constructivism which has the utmost importance in medical education is situation learning. One of approached that is very close to situation learning is Holistic approach. Holistic approach is based on the view that learning is a social activity (10) and is based on the idea that learners can be taught in a more natural environment. In other words, knowledge depends on situations, goals, and tasks used in them[11]. Based on the points discussed, interaction between students and between students and teacher must be emphasized. In addition, according to the holistic approach, not all learners learn at the same speed, and learning environment must be flexible[12]. The use of this approach in the educational setting can have numerous advantages for students in terms of knowledge building and enhance the opportunity for self-management in education and learning[13]. holistic approach is a motivational and smart factor in students' learning management and provides the opportunity to link previous learning to present learning[14].In this educational reform, the teacher is transformed from a provider of traditional education to a facilitator and guide who enhances the efficiency of educational content by creating deep learning in students[15]..

The importance and necessity of this study is clear with respect to the special status of teaching medical ethics , and the sensitivity of teaching clinical reasoning. In this way, we can empower medical students by adopting new techniques and strategies of collaborative learning such as holistic learning. Thus, the present study aimed to design holistic approach(flexibile and interactive learning) to teaching medical ethics and examine its effect on students' moral reasoning indicators(moral Sensitivity and Moral Intelligence) at Jahrom University of Medical Sciences.

MATERIALS AND METHODS

The present quasi-experimental single-group study with intervention and pretest-posttest design was conducted in Jahrom University of Medical Sciences in order to design holistic approach to teaching medical ethics and examine its effects on students' moral reasoning indicators. The study sample comprised the undergraduate medical students who taking the Medical Ethics course (n = 40). Inclusion criteria were being medical students taking Medical Ethics course and willingness to participate. Exclusion criteria were failing to complete questionnaires on pre- and post-test, failing to complete the assessment of the level of moral reasoning, and absence on clinical reasoning tests on three parts of virtual rounds, theoretical test, and OSCE.

Implementation stages of the research: After expressing the aim of the study, those students who were willing to participate in the study and were eligible to enter the study were requested to sign the informed consent form. Data collection was performed using the demographic information questionnaire, Moral Sensitivity Questionnaire (MSQ) and the Moral Competency Inventory (MCI).

Then seven open ended questions in moral reasoning were designed in the discussions forum. Up to one week before starting the main topics, questions were uploaded to the forum daily (one question per day). The students first individually answered the questions and then viewed the answers given by their peers in order to provide an opportunity for developing moral sensitivity and rethinking in learners. Then the students were taught the basic instruction such as; medical jurisprudence, ethics in medical research, ethics in psychiatry, ethics in gynecology, the doctor-patient relationship, end-of-life care, review of decision-making methods in the face of moral dilemmas by the instructors through interactive lectures, case studies and group discussions in the discussion forum.

At the end of the program, the students participated in Objective Structured Clinical Examination (OSCE) test in order to measure their performance , assessing online peer discussion and multiple-choice questions to examine the students' level of knowledge two weeks after intervention. Furthermore, Moral Sensitivity Questionnaire (MSQ) and the Moral Competency Inventory (MCI) were employed in order to examine the outcomes of and intervention.

Data Collection tool: MCI developed by Lennick and Kiel included a section on demographic information (age, sex, and marital status) and the 40 items of 10 attributes divided into four general categories of moral intelligence: integrity (with 4sub-categories), responsibility (with 3 sub-categories), forgiveness (with 2 sub-categories), and compassion (with 1 sub-category). Response format of MCI follows a five point Likert-like scale with responses ranging from (1 =Never, 2=Infrequently, 3=Sometimes, 4=In most situations," and 5 = "In all situations"). Total score of moral intelligence divided into excellent (90-100), very good (80-89), good (70-79), and weak (<69)[16].

MSQ is proposed by Kim et al. (1997) and composed of 6 subdomains, including interpersonal orientation, structuring of moral meaning, benevolence, autonomy, Experience of moral conflict, trust in medical knowledge and principles of care . Response format of MCI follows a five point Likert-like scale with responses ranging from (1 = "Never," 2 = "Infrequently," 3 = "Sometimes," 4 = "In most situations," and 5 = "In all situations"). The total score of moral sensitivity is divided into low (0-50), moderate (51-75), and high (76-100) (17). The total score of moral sensitivity is divided into low (0-50), moderate (51-75), and high (76-100) (17).

Objective structured clinical examination (OSCE): this test consisted of five individual stations, a rest station, and a TOSCE (Team Objective Structured Clinical Examination). Three of the five stations included problem-solving, and the remaining two focused on communication skills. Simulated patients were used in all stations. Only in one station titled "Confidentiality", the examiner alone orally examined the

process of problem-solving. Stations were programmed with the following titles:

- ✓ Confidentiality and Interaction
- ✓ Delivering Bad News
- ✓ Responding to False Requests
- ✓ Skill of Relationship with Patient of the Opposite Sex
- ✓ Obtaining Consent before Surgery

Validity and reliability of tools: The validity and reliability of the MCI instrument were confirmed by Martin and Austin[18]. Its reliability (Cronbach's alpha) was 0.798 and its Persian localization and reliability of the Persian version (r=0.94 by Mokhtarpour) were confirmed. In addition, its face validity were approved by experts[19]..

MSQ was used in Korea by Lee who reported acceptable validity and reliability measures for it (Cronbach's alpha of 0.78 and 0.81, respectively) (20). In Iran, it was translated by Mousavi et al. who reported the Cronbach's alpha of 81% and 97% for its validity and reliability, respectively. MSQ has 25 items scored on a five-point Likert scale[21].

Validity of OSCE was confirmed with the opinion of five professors of Ethics by establishing cohesion among topics, preparing a blueprint, determining the weights of each item in each station, and providing a good content coverage. Modified Angove method used to consider pass level as standardization of OSCE test.

Statistical analysis: Data were analyzed in SPSS version 18. To determine the effectiveness of the intervention, mean scores before and after intervention were compared using paired-samples t-test and then the two groups were compared using independent samples t-test at the significance level of <0.05.

Ethical considerations were taken into account in this study, and the study began after receiving the approval of the School of Educational Planning and Department of Medical Ethics. The researcher first introduced herself explained study objectives and necessity to the students, and received written consent forms from them. Moreover, the students were ensured of the confidentiality of data.

RESULTS

From among 40 students, 68.6% were female and the rest were male; 97.1% were single, and their mean age was 22.2±1.22 years. The first aim of the study was determining the mean and standard deviation (SD) of moral intelligence and moral sensitivity before and after intervention. According to this table, mean moral intelligence was higher after the intervention (74.1±10.66) than before the intervention (73.43±7.23). Moreover, mean moral sensitivity was higher after the intervention (77.71±10.12) than before the intervention (67.66±11) (p<0.0001) (Table 1).

Descriptive statistics measures show the variables of moral intelligence and moral sensitivity before and after the intervention(table 2).

Table 2 indicates the descriptive statistics measures of moral intelligence before and after the intervention. According to this table, before the intervention, the score of moral intelligence of 22.85% of students was at the levels of good or above. However, after the intervention, the score of 62.8% of students was increased to the levels of good or above.

The other goal of this study was to describe the level of moral sensitivity before and after the intervention (Table 3)

It was shown in table 3 that, the descriptive statistics measures of moral sensitivity before and after the intervention. This table shows the students' level of moral sensitivity classified based on the noted criteria. According to this table, before the intervention, the score of moral sensitivity of 88.6% of students was at the level of good or above. However, after the intervention, the score of 100% of students was increased to the levels of good or above.

Another goal of this study was examining sex differences in moral sensitivity. Results are depicted in Table 4. Male and female students' indicators of moral sensitivity were compared before and after the intervention.

As can be seen in Table 4, a meaningful change after intervention in the components of "experience of moral dilemmas" " (p<0.05) and "using moral concepts in moral decision-making" among men (p=0.03). That is, the localized educational intervention changed male students' knowledge of connecting with patients and using moral concepts in moral decision-making.

The other goal concerned the effect of intervention on moral intelligence. Results revealed that, although mean indicators of moral intelligence in both men and women showed an increasing trend, the intervention had no significant effect on the mentioned indicators (Table 5).

Moreover, the results showed a meaningful difference after intervention in the components of "respect for patient's independence" (P<0.01), "knowing how to connect to the patient" (p<0.05), "professional knowledge" (P<0.001), "experience of moral dilemmas" (p<0.04), "using moral concepts in moral decision-making" " (p<0.001), and "truthfulness and benevolence" " (p<0.001) among women. That is, the educational intervention changed the noted indicators, and the localized educational model significantly affected female students' moral sensitivity (p<0.001).

Generally, the average scores of the moral sensitivity level of the female students were higher than the male students, which was statistically significant (p<0.001).

In order to compare male and female students' moral intelligence before and after the intervention, independent samples t-test was run (table 6).

Table 6 shows that there is no significant difference between male and female students before and after intervention in terms of moral intelligence (p>0.05). Thus, the hypothesis was not confirmed. It is noteworthy that women had a higher moral intelligence than men did.

Furthermore, the knowledge (Online Peer Discussion, Multiple choice Questions) and performance(OSCE) after intervention were compared in two groups before (Table 7)

As table 7 showed, the level of student knowledge increased after the holistic approach .These results showed that level of students' knowledge(multiple choice question and online peer discussion), online peer discussion and OSCE scores are statistically significant(p<0.0001 and p<0.002).

The results of the study show a correlation between scores on online assessment, multiple-choice questions, OSCE, moral intelligence and moral sensitivity (Table 8)

Table 8 showed that there was significant correlation between students' online peer discussion, multiple choice exam, OSCE, moral intelligence and moral sensitivity after intervention. In addition, there was significant relationship between OSCE test and score of students in and moral reasoning after intervention. This means that moral reasoning and moral intelligence is related to students' score and learning in these issues ($p<0.05$).

Table 1. Descriptive Statistics Related to Moral Intelligence and Moral Sensitivity

Variable		Mean	SD	Minimum	Maximum	Paired t- test	P
Moral Intelligence	Before	73.43	7.23	59.50	88.50	6.57	0.0001
	After	74.10	10.66	53.00	98.00		
Moral sensitivity	Before	67.66	11.00	40.00	85.00	5.95	0.0001
	After	77.71	10.12	56.00	99.00		

Table2. Levels of Moral Intelligence before and after the Intervention

Variable	Weak	Good	Very Good	Excellent
Moral intelligence before intervention	27(77.1%)	7(20%)	1(2.9%)	4(11.4%)
Moral intelligence after intervention	13(37.1%)	11(31.4%)	7(20%)	4(11.4%)

Table 3. Levels of Moral Sensitivity before and after the Intervention

Variable	Weak	Moderate	High
Moral sensitivity before intervention	4(11.4%)	24(68.6%)	7(20%)
Moral sensitivity after intervention	0	14(40%)	21(60%)

Table 4. Comparing the Indicators of Moral Sensitivity among Male and Female Students before and after Intervention

Variable		Mean	SD	Difference between means	Confidence internal	T	p-value
Respect for patient's independence in male students	before	8.00	2.61	0.36	(-2.06, 2.79)	0.33	0.75
	after	8.36	2.06				
Respect for patient's independence in female students	before	8.21	1.86	1.42	(0.33, 2.50)	2.70	0.01
	after	6.63	1.64				
Knowing how to connect to patients in male students	before	14.00	2.83	2.09	(-0.19, 4.37)	2.05	0.07
	after	16.09	2.51				
Knowing how to connect to patients in female students	before	15.96	2.79	1.29	(0.01, 2.58)	2.08	0.05
	after	17.25	1.89				
Professional knowledge in male students	before	5.18	2.04	0.27	(-1.75,1.20)	-0.41	0.69
	after	4.91	1.64				
Professional knowledge in female students	before	4.08	1.44	2.17	(1.36,2.97)	5.58	≤0.001
	after	6.25	1.22				
Experience of moral dilemma is male students	before	8.73	1.85	00/0	(-2.04, 2.04)	00/0	0.05
	after	8.73	1.95				
Experience of moral dilemma is female students	Before	8.21	1.93	0.96	(0.04, 1.88)	2.16	0.04
	After	9.17	1.55				
Using moral concepts in moral decision-making in male students	Before	11.91	3.11	2.27	(0.26. 4.29)	2.51	0.03
	After	14.18	2.36				
Using moral concepts in moral decision-making in female students	Before	13.71	2.82	2.54	(0.99. 4.09)	3.39	≤0.001
	After	16.25	2.35				
Truthfulness and benevolence in male students	Before	17.91	3.24	0.91	(-1.61, 2.98)	0.98	0.35
	After	18.28	3.22				
Truthfulness and benevolence in female students	Before	68.54	10.61	12.21	(7.35,17.07)	5.20	≤0.001
	After	80.75	8.36				
Moral sensitivity in male students	Before	65.73	12.11	5.36	(-2.72,13.45)	1.48	0.17
	After	71.09	10.32				
Moral sensitivity in female students	Before	68.54	10.61	12.21	(7.35,17.07)	5.20	≤0.001
	After	80.75	12.21				

Table 5. Comparing the Indicators of Moral Intelligence among Male and Female Students before and after Intervention

Variable		Mean	SD	Difference between means	Confidence internal	T	p-value
Integrity in male students	Before	73.18	19.59	-2.27	(-16.07, 11.53)	-0.37	0.72
	After	70.91	7.20				
Integrity in female students	Before	75.52	6.28	- 0.99	(-5.43, 3.45)	-0.46	0.65
	After	74.53	7.27				
Responsibility in male students	Before	66.39	13.14	1.82	(-10.08, 13.71)	0.34	0.74
	After	68.18	8.04				
Responsibility in female students	Before	75.35	10.61	-1.67	(-5.75, 2.42)	-0.84	0.41
	After	73.68	7.50				
Forgiveness in male students	Before	66.36	5.17	3.41	(-0.29,7.10)	2.05	0.07
	After	69.77	6.84				
Forgiveness in male students	Before	75.83	8.56	0.21	(-2.79,3.21)	0.14	0.89
	After	76.04	7.69				
Compassion in male students	Before	72.73	7.54	-9.09	(-21.9, 3.73)	-1.58	0.15
	After	63.64	17.62				
Compassion in female students	Before	76.88	8.32	-0.63	(-6.06, 4.81)	-0.24	0.81
	After	76.88	8.32				
Moral intelligence in male students	Before	70.14	6.29	-0.45	(-10.60,9.69)	-0.10	0.92
	After	69.68	12.92				
Moral intelligence in female students	Before	74.94	7.25	1.19	(-2.84,5.22)	0.61	0.55
	After	76.13	9.04				

Table 6. Comparing the Indicators of Moral Intelligence among Male and Female Students before and after Intervention

Variable	**Sex**	**Number**	**Mean**	**SD**	**T**	**p-value**
Moral intelligence before intervention	Male	11	70.14	6.29	-1.706	0.097
	Female	24	74.94	7.25		
Moral intelligence after intervention	Male	11	69.68	12.92	-1.891	0.067
	Female	24	76.12	9.04		

Table7: Comparison between the mean and standard deviation of knowledge (Online Peer Discussion, Multiple choice Questions) and performance(OSCE)after intervention

Variables	**Mean**	**SD**	**T**	**P value**
Online Peer Discussion	5.97	0.690	5.34	0.0001*
MCQs	6.68	0.64		
Online Peer Discussion	5.97	0.90	3.36	0.002*
MCQs	6.68	0.64	1.99	0.54
OSCE	6.60	0.70		

*Significance from Paired t- Test

Table 8: Correlation between students assessment and moral reasoning indicators

Score	**Moral reasoning indicators**			
	MSQ Before	**MSQ After**	**MCI before**	**MCI after**
online peer discussion	0.16	0.08	0.88	0.58
OSCE	0.66	0.28	0.37*	0.66**
MCQs	0.25	0.75	0.37	0.98

Correlation is significant at the 0.05 level*
Correlation is significant at the 0.0 level**

DISCUSSION

The aim of this study was to design the holistic approach to teaching medical ethics and its effect on moral reasoning indicators (moral sensitivity, moral intelligence), learning and performance. Results of the present study revealed that mean moral intelligence and moral sensitivity scores were increased after the implementation of the holistic approach ($p<0.0001$). Also, the results showed that The local educational intervention brought about a change in the components of “respect for patient's independence”, “knowing how to connect to the patient”, “professional knowledge”, “experience of moral dilemmas”, “using moral concepts in moral decision-making”, and “truthfulness and benevolence” among female students.

Although many studies have been conducted throughout the world on teaching medical ethics, few studies have provided holistic approach (interactive and flexible method) and its effect on moral reasoning indicators (moral sensitivity and moral intelligence), learning and performance. for example; In a study by Kadivar *et al*., (2017) that aimed to teach medical professionalism via movies as a flexible and interactive

teaching tool indicated that, these programs provided the opportunity for students to learn medical professionalism[22].

In a study the educational intervention for teaching ethics increased the moral sensitivity of nurses regarding the needs of patients and supporting their rights[23]. In the Yeom *et al*. (2017) study that examined the effects of nursing ethics education on the moral sensitivity and critical thinking of nursing students in Korea, were shown the levels for the patient-oriented care, a sub-domain of moral sensitivity significantly improved[24]. Findings of Lin *et al*. study conducted in 2010 is also consistent with the results of this study. In their study, they observed that Peer tutored problem-based learning has the potential to enhance the efficacy of teaching nursing ethics[25].

In a study by Mohammadi et al, the attitudes of nurses regarding patient rights were higher in women than men and women provide more support to patients, especially emotional support, than men (26).Yeom (2017), states that women provide more support and compassion to patients and their families[24].. In other words, they provide more psychological support to patients and that may be why they have a more positive attitude towards patient rights than men do.

In a study by Borhani(2016), the comparison of the moral sensitivity of experimental and control groups before and after intervention showed that education and follow-up have a significant effect on nurses' moral sensitivity, and the scores of moral sensitivity before and after the workshop and in follow-up were higher in women than men, consistent with the present study[27].

Students' moral intelligence is the other important component in moral reasoning indicators and a major role in physician's performance (28). Indicators of moral intelligence were acting based on the principles of integrity, responsibility, forgiveness, and compassion. In this study, data analysis showed that mean scores of moral intelligence were higher after the intervention. The mean moral intelligence of medical students can show their attention to moral principles, especially in the domain of patient care (29). In our study, all dimensions of moral intelligence were high, showing the attention of the medical students these issues. Results, however, indicate that this educational approach had no significant effect on the moral intelligence of female and male students.

Rafati et al. examined the moral intelligence of medical students at Tehran University of Medical Sciences. Results showed a significant difference among indicators of moral intelligence[19]. The present study is consistent with our study in terms of the desirable level of indicators of moral intelligence. However, in terms of the significance of difference among these indicators, the two studies are not consistent. The study by Vimalasiri, showed that sex and occupation have no significant effect on moral judgment[30]. Moreover, a study by Hafizah, revealed that no significant difference exists between male and female Malaysian youth in terms of the dimensions of moral intelligence[31].

Mohammadi et al., examined the dimensions of moral intelligence in nursing in a descriptive cross-sectional study in Eastern Iran. Results revealed that a significant positive correlation existed between moral intelligence and variables of age and years of service[23]. Otherwise, no relationship was observed between moral intelligence and sex, in line with our study. In summary, it can be concluded that a training course alone is not significantly correlated with increasing moral intelligence. Furthermore, acquiring moral intelligence skills needs long period of time and continuing education.

The results of our study ,shows that holistic use of the interactive and flexible education methods leads to higher the level of knowledge(online peer discussion , Multiple choice Questions) and performance(OSCE) in medical students. Previous studies have also revealed similar results regarding the positive effect of using interactive methods on student performance . For example, The results of Chung *et al*., (2009) and Ozgonul (2017) studies also indicated that team-based learning to medical ethics education improved student performance and increased student engagement and satisfaction[32,33]..

This study has shown that moral sensitivity and moral intelligence were significantly correlated. This is a theoretically expected result and supports the notion that these two concepts are neither mutually identical nor exclusive. Whereas moral sensitivity means ability to identify moral problems, Moral intelligence is the ability to use universal moral principles to attain one's goals and establish relationships based on principles. As active medical ethics education, students focuses on both understanding the concept of ethics and implementation of ethical behaviors, these two factors should be blended into the content of medical ethics education in order to help medical students improve their professional integrity.

CONCLUSIONS

Students in clinical settings face difficult moral situations in practice. The clinical setting of medical schools provides the opportunity for reasoning in complex and challenging situations. These environments are not quite desirable in terms of the model of moral role, development of the skill of emotion management, and reasoning with compassion. Therefore, these environments cannot successfully support learners in combining cognition and emotional skills which are necessary for moral reasoning development and higher-order thinking. Thus, flexible and interactive learning such as using case studies and group discussions with using flexible method such as the discussion forum can be used for teaching moral reasoning indicators.

The effective teaching of medical ethics provides the opportunity for attaining medical goals in a tangible manner. Finding moral reasons and moral decision-making are professional skills related to effective clinical measures in the domains of clinical knowledge and biotechnology for disease diagnosis. In this study, the holistic approach had a significant effect on the moral reasoning indicators and the level of learning of students. It seems that the mentioned model is a good method of teaching the Medical Ethics course.

Still, as this model was implemented on a limited number of students(the one-group pre- and post-test design without any control group), authorities must conduct more comprehensive studies and make an ongoing effort to update the content and use new teaching and evaluation methods and constantly review them, because any failure

in doing so puts the professional prospect of physicians at legal and moral risks.

Competing interests: The authors declare that they have no competing interests.

Funding: No funding was provided for this work.

Acknowledgements: The present article was extracted from the MSc Medical Education thesis by Mr. Amir-Mohammad Ebrahimi under the guidance of Dr. Leili mosalanejad with the consultation of Dr. Nahid ZarifSanaiey. The authors would like to thank the Vice-chancellor of Shiraz University of Medical Sciences for supporting this research. The authors also thank the Clinical Research Development Center of Shiraz University of Medical Sciences for the statistical analysis.

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