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10.4103/jehp.jehp\_708\_20

# The effect of bio ethical principles education on ethical attitude of prehospital paramedic personnel

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Received: 22-06-2020  
Accepted: 18-10-2020  
Published: 31-08-2021

## Abstract:

**BACKGROUND:** Ethical attitude of paramedic personnel is one of the most important factors in their effective and useful performance. Therefore, according to the importance of this issue and immense effect of religious culture on the formation of ethics, this study aimed to effect bio-ethical principles teaching on moral attitude of paramedic emergency personnel in Iran.

**MATERIAL AND METHODS:** The present study was an experimental study carried out in 2020 on 60 of paramedic emergency personnel. Samples were available, randomly selected and assigned to two groups of control and intervention. The intervention was performed for a 2-h workshop of bioethical principles in 4 day based on Quran verses. Moral attitude of both groups was studied before and after each intervention. Data were analyzed using Kolmogorov–Simonov, Chi-square, *t*-test, one-way, and paired *t*-test with SPSS version 16 ( $P \leq 0/05$ ).

**RESULTS:** Ethical attitude means for both groups of control and intervention demonstrated that ethical attitude has meaningfully increased after the workshop. Demographic variables such as age, gender, and work experience of participants in workshops were not different between these two groups ( $P < 0/05$ ). The study of these two groups showed that there is no relationship among work experience, gender, marital status, age, and ethical attitude.

**CONCLUSION:** Prehospital emergency is quite different from the other occupations in health-care system and the ethical issues of this field are more important. Therefore, teaching in workplace and through ethical principles based on religious teachings will have a profound effect on improving biological ethics of paramedic prehospital staffs.

## Keywords:

Ethical attitude, ethics based on Quran, medical ethics, medical ethics workshop

## Introduction

Ethics emphasizes on the logical and systematic study of moral issues and peoples' behavior, what they do and what results they achieve.<sup>[1]</sup> In other words, ethics is a technique which studies humanistic features, affairs which are related to man's humanistic, vegetal, and bestial powers, and determines that which of those features are good, virtue, and perfect and which are bad, rogue, and defect, so as to after their identification, it flourishes itself with good

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ones and put itself away from bad ones. Hence, it performs good deeds which are pertinent to internal virtues in achieving its practical and scientific prosperity in society.<sup>[2]</sup>

Ethical and Islamic laws and ideas are derived from different sources that their main resource is the Holy Quran. It is believed that the Holy Quran is brought by Gabriel to our prophet, Mohammad, and is God's unchangeable statement.<sup>[3]</sup> Due this fact that people have different groups – Quran mentioned all groups' feature – and due to

**How to cite this article:** Mohammadi MM, Sheikhasadi H, Mahani SA, Taheri A, Sheikhbardsiri H, Abdi K. The effect of bio ethical principles education on ethical attitude of prehospital paramedic personnel. *J Edu Health Promot* 2021;10:289.

this fact in Islam that human being is created to obtain perfection and is appointed God's lord on earth and as God's power is gifted to human beings, he/she is endowed with freewill and thought features; hence, Islamic trainings would be introduced as the best ethical guidelines for human beings.<sup>[3,4]</sup> Education on health issues is necessary for personnel physical and mental health and ethics teaching along with religious perspective is one of the most useful issues in expanding medical ethic.<sup>[5-9]</sup>

Researcher declared that ethical attitude in medicine graduates is more than medicine students. Its main reason may be more involvement of graduates in ethical issues and effects of ethical teachings during their education.<sup>[10]</sup> Mehdizadeh and Hoseini studied that how different moral aspects of health are placed in the framework of relationship between physician and patient. In this study, the effect of virtual teaching on applied Quran and Islam ethical indexes by physician is studied and research results revealed that there is no meaningful relationship between physician's gender, educational level, and age and application of general and professional ethics indexes, but religious teachings are effective in increased application of ethical involvements and lead to some changes in physicians' attitude toward following ethical principles.<sup>[11]</sup>

In many cases, the large number of ethics' basic principles in western cultures is correspondent with Islam principles and we can announce that today's ethical principles along with Quran teachings, in such a way that they would be understandable for all, especially for Muslims.<sup>[5]</sup> Teaching of medical ethics principles based on Quran will have immense effect on following ethical issues by emergency personnel.<sup>[11]</sup> Ethics teaching based on Quran principles will be more effective in better understanding of these concepts and developing a positive attitude in people.<sup>[12,13]</sup>

Prehospitals paramedic personnel are the only group who are allowed to arrive to peoples' most private places (private houses) and most of their patients have low consciousness and high stress. Hence, following ethical principles by this group is very important. Therefore, due to the importance of this issue, the present research was designed to examine the effect of bioethical principles teaching on moral attitude of paramedic emergency personnel in Kerman city of Iran.

## Materials and Methods

### Study design and setting

This experimental study was carried out in Kerman University of Medical Sciences in Southeastern Iran in 2020.

### Study participants and sampling

To determine the sample size for the first time as a pilot, ten paramedic personnel in the control group and ten patients in the intervention group were evaluated using the obtained results and the formula for comparing the mean of the final sample rates with the confidence of 95%, 80% of the 30 people in each group was calculated. Participants were selected with used convenience sampling method and randomly assigned into two control ( $n = 30$ ) and intervention groups ( $n = 30$ ). Inclusion criteria for participants include have the paramedic certificate. Exclusion criteria included a lack of consent for participation in the study, not attending the workshops, and incomplete questionnaires.

### Data collection tool and technique

Data were collected using two questionnaires. First, a demographic questionnaire comprised the participants' age, gender, former experience of participating in workshop, marital status, and work experience. Second, a modified version of the ethical attitude questionnaire by Elder *et al.*<sup>[14]</sup> was used. This questionnaire including 22 items with Likert's 5° Index was graded from absolutely agree to absolutely disagree. The cross-cultural adaptation and translation of the questionnaire involved forward accurate translation of the original questionnaire into Persian. Later, a proficient English translator conducted the backward translation of the Persian version into English. Next, agreement of the translated version with the original version was confirmed. Face validity of the instrument was also examined and confirmed by paramedic personnel perception and understanding of the items. Furthermore, ten faculty members of nursing confirmed the qualitative content validity of the ethical attitude questionnaire. To conduct a pilot study over the Persian version of the ethical attitude questionnaire, thirty paramedic personnel, who were not involved in the study process, were asked to complete the questionnaire. Cronbach's alpha coefficient was applied to assess reliability of the questionnaire. According to the results, Cronbach's alpha coefficient of 0.89 showed good reliability of the questionnaires.

### Intervention

For holding workshop, necessary licenses were received, then most of teaching content gathered from Ayat Allah Makarem Shirazi's book. Ethics in the Quran related to Quran courses, physician book, and medical ethics and was approved by experienced professors and medical ethics. Educational contents include medical ethical principles based on Quran courses. On informed consent" principle, human's free will is pointed, this principle is the framework and basis of Islam. Dahr sura from first to third sections points to this principle. In beneficence, holy Quran points to the beneficence of human affairs and their worldly and divine effects. For example, in Ebrahim sura, verse

24–26 points to this principle. On nonmaleficence, there are two important principles of “La zarar” and “la Haraj” in Holy Quran, which are clearly mentioned in the 6<sup>th</sup> section of Maedeh sura and 78<sup>th</sup> verse of Hadj sura. Importance of these two exceeds in such a way that fundamental principles of Islam are affected, which, in the holy Quran means equality among affairs, shows that “giving what is deserved to all so as to make everything equal and locating everything in its deserved place.” Justice in its religious is considered existence and performance factor for governments. It forms the most important purpose of all prophets. It will be studied in 25<sup>th</sup> verse of “Hadid” sura and 74<sup>th</sup> verse of Jonah sura. On clearness of educational context, both the trainers are professors of Kerman’s Shahid Bahonar Medical Science University and Tehran Shahid Beheshti University. On the other hand, teaching content based on Quran and Cabalas exploited under the supervision of the head of religion group from articles and books. Then in corporation with Bahonar professors, their clarity is approved. During teaching, at first, research aims were clarified for participants. Then, after the completion of consent form, they were assured that there is the possibility of leaving study in each step. Participants’ addresses to send research results were gotten. Before workshop start, participants filled the research tool. Workplace was held in 4 day for 8 h with participation of two experienced professors in ethics. Second step (posttest) was held for collecting information from the held workshop. Interval followed by a follow-up period for 4 weeks later, while the control group only received the regular educational services from the emergency medical system.

**Data analysis**

To analysis data, IBM SPSS software, 20<sup>th</sup> edition (version 20, SPSS Inc., Chicago, IL software) was applied, and to determine findings’ normal condition, Kolmogorov–Smirnov test was applied. To study the relationship between demographic variables, the average of ethical attitude, *t*-test, one-way test, and K<sup>2</sup> were used. The efficiency of workplace levels was determined by pair–*t*-test.

**Results**

Among 60 persons who participate in study, 82.6% were male, 76.2% married with work experience of more than 5 years 58.3% in prehospital emergency ward. Furthermore, most of the participants had no former experience of participating in workplace (63.8%). Their age average was 30 ± 5.8. K<sup>2</sup> test showed that two groups had no meaningful differences in their age, gender, marital status, work experience, and former experience of participating in workplace *P* < 0/05, as shown in Table 1.

Results of the current research showed that in relation with a mean score of moral attitudes were not significant

in intervention and control group before intervention, while it was significant after intervention (*P* < 0.05). Pair *t*-test showed that the mean score of moral attitude in intervention group before and after intervention was significant (*P* < 0.01) so that in the intervention group, the mean score of moral attitude was significantly increased after intervention (4.2 ± 3.4) compared to before intervention (3.8 ± 4.8) as shown in Table 2. *T*-test showed statistically significant difference between intervention and control groups in terms of the mean score of moral attitude so that the intervention group had significantly higher mean scores in moral attitude after intervention compared to the control group (*P* < 0.01) as shown in Table 3. The result showed that no significant relationship was observed between demographic variables and moral attitude variable in both the groups.

**Discussion**

Performed studies on teaching in the workplace of ethical principles based on Quran teaching lead to changing participants’ attitudes. Furthermore, findings

**Table 1: Distribution of demographic variables of research units in intervention and control groups**

Variable	Group		<i>P</i>
	Intervention	Control	
Gender			
Female	28 (93.3)	24 (80)	0.61
Male	2 (6.7)	6 (20)	
Age			
≤30	19 (63.3)	16 (53.3)	0.72
≥30	11 (36.6)	14 (46.6)	
Marital statuses			
Single	10 (33.3)	11 (36.6)	0.02
Married	20 (66.6)	19 (63.3)	
Experience of participating in workplace			
No	16 (53.3)	7 (23.3)	0.82
Yes	14 (46.6)	23 (76.6)	
Work experience			
≤5	17 (56.6)	8 (26.6)	0.06
≥5	13 (43.3)	20 (66.6)	

**Table 2: Mean score of moral attitudes before and after of intervention in case group**

Variable	Intervention		<i>P</i>
	Mean	SD	
Before of intervention	3.8	0.48	0.49
After of intervention	4.2	0.34	0.001

**Table 3: Comparing difference in mean score of moral attitudes before and after of intervention in two groups**

Variable	Intervention	Case group		Control group		<i>P</i>
		Mean	SD	Mean	SD	
Moral attitude	Before	3.5	0.4	3.9	2.2	0.001
	After	6.3	0.3	3.8	1.7	0.001

showed that demographic characteristics of participants in workplace have a meaningful effect on the ethical attitude of studied units.<sup>[15]</sup>

Results of the current research showed that the mean score of moral attitudes was not significant in intervention and control groups before intervention, while it was significant after intervention. This finding is in line with studies conducted by studies of.<sup>[16,17]</sup> Hence, based on this fact, it will be said that teaching ethics through Quran teaching is one of the most useful ways in changing Muslims' attitudes because Muslims found their ethical basis on religious ideas.

The results showed that the mean score of moral attitudes in the intervention group before and after intervention was significant so that in the intervention group, the mean score of moral attitudes was significantly increased after intervention. This finding is in line with studies conducted by studies of some authors.<sup>[18,19]</sup> According to this, it would be supposed that a religious structure would have a positive effect on teaching, especially in ethical courses. Of course, this structure should be completely clear and generalizable to any other occupation. Medical ethics principles are basis for bioethics in such a way that curriculum planning in this field along with emphasis on Quran teaching causes a powerful conceptual framework for students, as this framework will develop a suitable mental concept to expand and develop ethical principles in students and also it changes their ethical attitude.

The results showed a statistically significant difference between intervention and control groups in terms of mean score of moral attitudes so that the intervention group had significantly higher mean scores in moral attitude after the intervention compared to the control group. This finding is in line with studies conducted by studies of some authors.<sup>[7,20,21]</sup> By the use of this workplace teaching, which was applied in this study, it would be expected that participants' attitudes will change. In another study on the study of ethics teaching by Choi *et al.*<sup>[22]</sup> it was emphasized that ethical behavior would be improved through training, and based on this, ethics teaching in universities should be a compulsion course in nurses' curriculum. On the other hand, following ethics teaching through permanent teaching courses leads to the elevation and characterization of ethical principles in nurses' performance.

### Research limitation

The limitation of this study including impossibility to track the total samples in the follow-up period for a reason rotating working shifts and personnel great work in the prehospital that causing to confound the independent effect of follow-up that using only and

accurate from the follow-up to determine the effect of this method can resolve this problem.

## Conclusion

Due to this fact that one of the most important aspects of bioethical teaching is training bio ethics principles – patient will, profitability, nonmaleficence, and justice – and due to the importance of ethics in Islam and holy prophet's behavior, when our addresses are Muslims, if they find the relationship between these principles and holy Quran verses, especially as all these principles are approved by Islam, it surely will have a more permanent effect, especially in practical and sentimental aspects. Prehospital emergency is quite different from the other occupations in health-care system and the ethical issues of this field are more important. Therefore, teaching in workplace and through ethical principles based on religious teachings will have a profound effect on improving biological ethics of paramedic prehospital staffs. In fact, according to this point that as in teaching emergency personnel, whether during their education or during their permanent teach, there was no ethical principal workshop, and also due to their religious and thought condition, ethics teaching based on religious idea and especially based on holy Quran seems to be effective in the matter of elevating ethics, ethical virtues, and their development in medical community. Furthermore, it suggests, a study with longer time period, more sample bulk, and a pursuit approach should be done during the study.

### Ethical consideration

This study was approved by the Ethical Committee of the Kerman University of Medical Sciences prior to the collection of data, the code of ethics is IR.KMU.REC.249/26/10/92.

### Acknowledgment

we would like to thank all the people who helped us to perform this study, especially prehospital paramedic personnel.

### Financial support and sponsorship

Nil.

### Conflicts of interest

There are no conflicts of interest.

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