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Original Article

Adherence to Professional Code of Ethics from Emergency Medical Technicians and Their Patient's Perspective: A Cross-Sectional Study

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Abstract

Background: Adherence of emergency medical technicians (EMTs) to a professional code of ethics is one of the most important aspects of their occupation.

Objectives: The purpose of this study was to determine the degree of adherence to the professional code of ethics from the perspective of EMTs and their patients.

Methods: This was a cross-sectional study. The inclusion criteria for patients were age between 18-65 years, willingness to participate in the study, normal mental status, being medically stable and absence of any chronic mental or psychiatric disorder. The inclusion criteria for EMTs were willingness to participate in the study, having an associate or bachelor's degree in the medical emergency, working at medical emergency departments and management centers. The exclusion criteria were refusal to continue the study and the necessity of therapeutic intervention while completing the questionnaire. The patients were recruited by cluster sampling. For this reason, first, two hospitals were randomly selected among six hospitals in Arak, Markazi province (Arak, Iran). Then, the list of missions at each shift was extracted by referring to the emergency departments of these hospitals. Afterward, one of the missions in each shift was randomly selected. In this study, a two-part questionnaire was used for data gathering. In this first part, the demographic information of the participants was collected. In the second part, a professional code of ethics for EMTs' questionnaire, including 26 statements in 5 dimensions was used. Finally, the questionnaires were given and completed by the pre-hospital emergency personnel and the transferred patients.

Results: A total of 105 EMTs and 109 patients were randomly selected as they transported patients to the studied hospitals. From the viewpoint of patients, adherence to the professional code of ethics was rated 2% as highly desirable, 39% as desirable, 58% as moderate, and 1% as undesirable. On the other hand, the EMTs rated themselves as 59.8% highly desirable, 37.1% as desirable, and 3.1% as moderate. There was a statistically significant difference between the average score of adherence to a professional code of ethics from the viewpoint of patients versus that of the EMTs ($p < 0.001$).

Conclusion: There was a statistically significant difference between the degrees of adherence to the professional code of ethics by EMTs from their own viewpoint versus that of the patients.

Keywords: Emergency Paramedics, Emergency Medical Services, Professional Ethics, Code of Ethics, viewpoint.

Introduction

Adherence to a professional code of ethics is an essential part of Emergency Medical Technicians (EMTs). This adherence leads professionals to perform their duties in an appropriate manner, resulting in the best outcomes for patients.[1,2] A commitment to a professional code of ethics is a central tenant in medical training.[3,4] Professionalism is one of the most prominent topics in medical ethics, and educators play an important role in teaching and evaluating.[5,6] The American Board of Internal Medicine has identified altruism, accountability, excellence, dignity, honesty and respect for others as elements of professional ethics. Evaluating professionalism is one of the most important issues that has received much attention from experts in the development of professional ethics and until now has been carried out in a variety of quantitative and qualitative processes.[7-9] Adherence to a professional code of ethics is a core element of high-quality care for patients and results in better patient outcomes.[10,11] A professional code of ethics for EMTs is a tool for better decision-making in dealing with patients and their families, colleagues, patient's companions and other members of the healthcare team. It is also considered as a standard for making ethical decisions in critical and complex situations, as well as in times of crisis.[12-14]

Objectives

Therefore, it is essential to investigate the adherence to the professional code of ethics from the viewpoints of the both EMTs and patients in order to identify and address deficiencies.

Materials and Methods

Study design

This cross-sectional study aimed at comparing the viewpoint of EMTs versus their patients with respect to the degree of adherence to the professional code of ethics. The study was conducted in Markazi province (Arak, Iran) from October 2018 to June 2019. This research was approved by the Ethics Committee of Arak University of Medical Sciences (Iran) with an approval No. IR.ARAKMU.REC.1394.338 and all subjects signed the written informed consent before participating in the study. Ethical considerations were observed in all stages of this research, so that the questionnaires were anonymous. The participants were completely free to participate in this research and the researchers did not ask them to complete the questionnaires during critical medical care.

Study population

There are approximately 250 EMTs working in this province. Arak University of Medical Sciences Institutional review board approval was received. The patients were recruited by cluster sampling. First, two hospitals were randomly selected from 6 hospitals in Arak, Markazi province (Arak, Iran). Then, the list of missions at each shift was extracted by referring to the emergency departments of these hospitals. Afterward, one of the missions in each shift was randomly selected. Finally, the questionnaires were completed by the pre-hospital emergency personnel and the transferred patients. Care was taken not to survey the same provider more than once by tracking identification numbers. Simple random sampling method was used for selecting the patients. In order to calculate the sample size, the formula of difference between two populations was used according to a similar study (15). In this regard, by considering 12 as the mean difference between the two populations, the standard deviation was calculated to be 26, alpha= 0.05, study power= 90% and sample size in each group= 99.

$$n = \frac{2\sigma^2 (Z_{1-\alpha/2} + Z_{1-\beta})^2}{d^2}$$

The inclusion criteria for patients were: aged 18-65, willingness to participate in the study, normal mental status, being medically stable, and absence of any chronic mental or psychiatric disorder. The exclusion criteria were refusal to continue the study and the necessity of therapeutic intervention while completing the questionnaire. The inclusion criteria for the EMTs were willingness to participate in the study, having an associate or bachelor's degree in the medical emergency, working at medical emergency departments and management centers in the Markazi province (Arak). Exclusion criterion of the EMTs was the refusal to participate in the study.

Data gathering

In this study, a two-part questionnaire was used for gathering data. In the first part, the demographic information of the participants (including age, marital status, education, ethnicity, work experience, etc.) was collected. The second part consisted of a professional code of ethics for EMTs' questionnaire, including 26 statements in 5 dimensions (Appendix A). The statements included 6 questions about altruism, 7 questions about responsibility and accountability, 3 questions on honesty and privacy, 5 questions regarding respect for others and 5 questions related to job excellence. Each question was answered on a 5-point scale. The maximum score for each dimension was evaluated to be 100. A score of zero indicated the lowest degree of adherence and a score of 100 indicated the highest degree of adherence. Also, for classifying the total score of adherence to professional ethics from the viewpoint of patients and EMTs, the total score in the range 0-100 indicated very undesirable, 100-200 undesirable, 200-300 moderate, 300-400 desirable and 400-500 highly desirable.

In order to design the questionnaire for measuring the degree of adherence to professional ethics, the statements of the questionnaire were first extracted from the available books and articles. To evaluate the validity of the questionnaire, five faculty members from the Faculty of Nursing and Midwifery and three faculty members of the Medical Emergency Department reviewed the statements. Then, the statements were modified based on their comments. The validity of the questionnaire was quantitatively evaluated using the Content Validity Index (CVI) and Content Validity Ratio (CVR) indexes. The relevance of 89% was calculated based on the CVI index. In order to determine CVR, the experts were also requested to

review each item based on a three-point scale (necessary, useful but not necessary and not necessary). The content validity ratio was 91%. To assess the reliability of the tool, the questionnaire was given to 20 emergency personnel and 20 patients. The reliability through Cronbach's Alpha for the emergency medical personnel and patients was 0.913 and 0.834, respectively.

Statistical analysis

The data were analyzed using SPSS (version 16) by descriptive statistics, including number, percentage, mean and standard deviation as well as analytical statistics including Pearson correlation, independent t-test, and one-way ANOVA.

Results

A total of 105 EMTs were approached and 100 EMTs completed the questionnaire, resulting in a 95% response rate. Moreover, 5 cases did not complete the questionnaire due to lack of time and unwillingness to participate in the study. A total of 109 patients were approached and 100 completed the questionnaire, resulting in a 91.7% response rate. 9 cases did not complete the questionnaire due to the unwillingness to participate in the study. The mean age of the patients was 34.75±9.49 years. The majority were men (73%), married (71%) and had an academic degree (79%). The average age of the EMTs was 29.54±8.43 years and the average work experience was 5.12±7.24 years. All of the EMTs were men, 51% were unmarried, and the majority had an associate degree (74%) (Table-1). The results showed that there was a statistically significant difference between the average score of adherence to the professional code of ethics by EMTs from the viewpoint of patients compared to that of the EMTs working at the Center of Emergencies and Management in Arak (P <0.001). In general, the total average and the average for each dimension of the professional code of ethics questionnaire based on the viewpoint of the patients were less than that of EMTs (Table-2). There was a statistically significant relationship between the sex of the patients and the total score of adherence to the code of ethics from the viewpoint patients (P <0.017), specifically female patients reported that ethical standards had been poorly observed. There was no significant relationship between the other variables of the patients (Table-3) and the total score of adherence to the professional code of ethics (P> 0.05). There was a significant relationship between the level of education, employment status of the EMTs and the total score of adherence to the professional code of ethics (P <0.012). So that, the EMTs with an associate degree and a training-based employment status acquired a higher score. There was no relationship between other demographic variables and adherence to the professional code of ethics (P> 0.05). Table-4 shows that from the viewpoint of the patients, the degree of adherence to the professional code of ethics by EMTs was 2% as highly desirable, 39% as desirable, 58% as moderate and 1% as undesirable. On the other hand, in the EMTs group, the degree of adherence was rated as 59.8% highly desirable, 37.1% as desirable, and 3.1% as moderate (Figure-1). Chi-square test showed a statistically significant difference between the two groups (p <0.001).

Table-1. Frequency distribution of the participants according to their demographic variables

		Patients	EMTs
		No. (%)	**No. (%)**
Sex	Male	73(73)	97(100)
	Female	27(27)	0(0)
Marital status	Single	29(29)	46(47.4)
	Married	71(71)	51(52.6)
Type of department	Urban	96(96)	81(83.5)
	Road	4(4)	16(16.5)
Education	Illiterate and lower than high school diploma	7(7)	0(0)
	High school diploma	14(14)	11(11.3)
	Associate degree	29(29)	74(79.3)
	Bachelor's degree	50(50)	12(12.4)
Employment status	Unemployed	21(21)	0(0)
	Tenured	33(33)	18(18.4)
	Contractual	)8(80	3(3.1)
	Contract-based	23(23)	24(27.4)

	Training-based	8(8)	52(53.6)
	Non-tenured	7(7)	0(0)
Ethnicity	Fars	31(31)	48(49.5)
	Turk	20(20)	17(17.5)
	Baloch	8(8)	0(0)
	Lur	24(24)	18(18.6)
	Kurd	17(17)	14(14.4)
Age	-	SD±Mean	SD±Mean
		9.49±34.75	29.45±8.43

Table-2. The mean and standard deviation of scores of adherences to professional code of ethics from the perspectives of patients and EMTs

Dimensions	Patients' viewpoint	EMTs' viewpoint	P-value
	SD±Mean	SD±Mean	
Altruism	10.20±63.79	11.72±81.09	P<0.001
Responsibility and Accountability	15.82±59.14	11.15±82.32	P<0.001
Honesty and Privacy	12.56±59.75	17.52±82.73	P<0.001
Respect for others	11.70±57.75	15.79±82.78	P<0.001
Job excellence	14.04±53.35	13.04±80.82	P<0.001
Total	48.46±293.79	58.51±409.76	P<0.001

Table-3. Frequency and percentage of adherence to professional code of ethics from the viewpoints of patients and pre-hospital EMTs

Group	Highly undesirable	Undesirable	Moderate	Desirable	Highly desirable	P-value
Patients	0(0)	1(1)	58(5)	39(39)	2(2)	P<0.001
EMTs	0(0)	0(0)	3(3.1)	36(37.1)	58(59.8)	
Total	0(0)	1(0.5)	61(31)	75(38.1)	60(30.5)	

Table-4. The relationship between total score of adherences to professional code of ethics and demographic variables of participants

		Patients		EMTs	
		SD±Mean	P-value	SD±Mean	P-value
Sex	Male	48.58±300.77	0.017	76.51±409.58	-
	Female	43.58±274.88		0	
Marital status	Single	291.04±55.70	0.720	69.56±406.93	0.611
	Married	45.57±294.90		43.67± 412.90	
Type of department	Urban	47.21±295.45	0.091	59.69±408.90	0.513
	Road	68.40±253.60		50.53±419.93	
Education	Illiterate and lower than diploma	42.14± 280.83	0.892	-	0.012
	High school diploma	43.88±309.40		55.75±406.91	
	Associate degree	50.13±296.07		45.58±417.60	
	Bachelor's degree	49.25± 293.44		364.04±101.96	
Employment status	Unemployed	47.77±279.59	0.425	0	0.012
	Tenured	48.33±295.06		86.82±371.64	
	Contractual	47.53±316.01		6.94± 455.07	
	Contract-based	47.633±300.24		47.31± 416.79	
	Training-based	61.82±300.31		46.99± 471.10	
	Non-tenured	36.46±276.24		0	
Ethnicity	Fars	49.40±290.21	0.397	53.95±416.99	0.726
	Turk	45.42± 279.56		64.79± 404.81	
	Baloch	43.49±288.45		-	
	Lur	51.35±306.84		45.73±408.92	
	Kurd	47.82±301.05		78.51±398.69	
Age	r=094%			r=-141%	0.172
Work experience	-			r=-090%	0.196

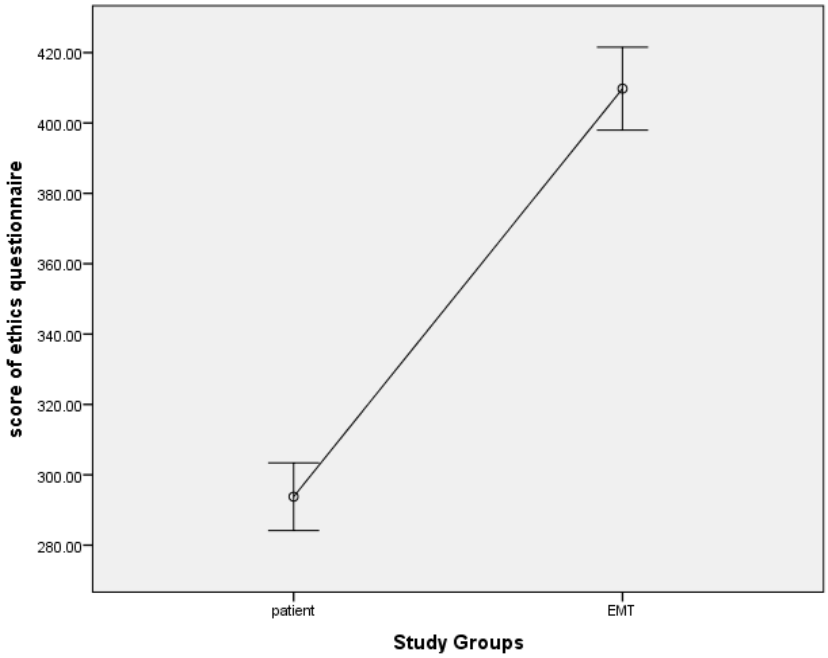

Figure-1. Comparison of scores of adherences to professional code of ethics by EMTs from their own and the patients' viewpoint.

Discussion

Our study demonstrated that the total average and the average for each dimension of the professional code of ethics questionnaire obtained from the patients' viewpoint were less than that of EMTs. In a similar study that was conducted by Momennasab et al., 70% of patients, 86% of nurses and 53.3% of supervisors assessed nurses' adherence to the code of ethics as satisfactory. Furthermore, the average scores of adherence to the nursing code of ethics were 38.44, 41.08 and 37.83 from the viewpoint of patients, nurses and supervisors, respectively. There was a statistically significant difference between the viewpoints of nurses and the other two groups. Therefore, the nurses showed higher adherence to the nursing code of ethics than the patients.[16] Similarly, Marnani et al., showed that the average degree of nurses' adherence to the code of ethics from the nurses' viewpoints was higher than that from the patients. In addition, in the evaluation of the level of ethical performance of nurses, it was found that 47% of nurses and 38% of patients evaluated this performance as desirable.[17] The results are consistent with the findings of Momennasab and Marnani study. In these studies, the average degree of adherence to the code of ethics from the viewpoint of healthcare service personnel was higher than that of the patients. These alarming differences indicate that more research studies are required to assess the viewpoints of healthcare personnel and patients. In addition, it is essential to implement more training and workshops to address these discrepancies. Furthermore, addressing factors for the implementation of a professional code of ethics in the pre-hospital context should be considered. One other strategy is to post the charter of patients' rights in ambulances to inform patients of their legal rights as well as to reward that personnel who demonstrate mastery of professionalism.

Pre-hospital EMTs are generally the first healthcare professionals to encounter critically ill patients.[18] The most important aim of this system was to provide excellent care in the shortest possible time in line with the world scientific standards.[19] Occasionally, the efficiency required for stabilizing and transporting critically ill patients may impact the perception of respect for their dignity and privacy. There are many factors such as insufficient equipment and human resources,[20] working under stressful environments such as mass casualty events,[21,22] insufficient time to satisfactorily answer questions,[23] lack of continual medical training, and insufficient attention paid to monitoring and evaluating staff,[24,25] which can pose a challenge for EMTs to adhere to the code of ethics. More studies are needed to clarify the reason of the significant difference between the viewpoints of EMTs and patients about the degree of adherence to the professional code of ethics.

The results of Dehghani et al., study on the degree of nurses' adherence to professional code of ethics showed that 72% of nurses evaluated their ethical performance as satisfactory in the responsibility dimension, whereas from the patients' viewpoint, only 40% of nurses had a desirable ethical

performance in this dimension. From the nurses' viewpoint, 70% of them had a desirable ethical performance in the dimension of improving the quality of patient care, while the degree of observance of ethics in this dimension was only 45% from the viewpoint of patients. In the dimension of respect for patients, nurses stated that in 70% of cases they had ethical performance and treated their patients respectfully, which was similar to the viewpoint of the patients.[25] The results of Dehghani et al., study are in agreement with our findings.

Our results showed an important trend that female patients perceive a poor adherence to a professional code of ethics. There was no significant relationship between the other variables and the total score of adherence to the professional code of ethics. Based on the findings of Jahanpour et al., study regarding the viewpoints of nurses and patients on respecting privacy, there was no significant relationship between patients' viewpoints about privacy and gender, age, marital status, occupation, duration of stay, hospitalization status and ability to perform activities. The results of Jahanpour et al., study are consistent with findings of the present study. Given the fact that pre-hospital emergency services are provided by men in Iran, some issues related to the professional code of ethics such as privacy are less respected.[26] Therefore, it is recommended to pay more attention to gender specific training of EMTs to address this issue. Moreover, we recommend the recruitment of women to serve as EMTs to address these gender discrepancies.

Finally, a statistically significant relationship was observed between the level of education and employment status of EMTs with adherence to a professional code of ethics. EMTs with an associate degree acquired a higher score then EMTs with lesser education. Contractual employees seem to have better ethical conduct, which may be due to the fact that they have completed a recruitment process on the basis of standards and regulations.

This was a descriptive study relying on EMTs to self-evaluate. Because everybody may have this tendency to evaluate him/herself better than what he or she actually is, this factor may have a confounding effect on the self-evaluation results. One possible way to reduce this unwanted effect is filling out the questionnaire by a third person who observes the patient and EMT personnel, simultaneously. But, due to problems in patients' privacy, this would be impractical. Despite assuring the EMTs that the survey was anonymous, gathering demographic information such as ethnicity, employment status, age may have altered the perception of anonymity and thus altered the responses. Another limitation of this study was attributed to the different perceptions of professional ethical codes among patients and EMTs. It is clear that patients' perception of professional ethical codes may be different from EMTs' perception because patients usually do not inform of the exact definition of professional ethical codes terminology. Giving some information to the patients about ethical terminology used in the questionnaire may solve this problem to some extent. But in emergency situations, it is not usually possible.

The last limitation of this study was the unequal number of questions in each item of ethical codes in the questionnaire. When the numbers of questions in each ethical code are not similar in the questionnaire, it may act as a confounding factor in the assessment of ethical codes. Because an ethical code with fewer questions in the questionnaire may be assessed less carefully than an ethical code with more questions in the questionnaire. But this item was an inevitable issue because this study was a qualitative study and in such studies, there is not usually a universally acceptable group of questions for assessment of each ethical code.

Conclusions

In our survey on the EMTs and their patients, there was a discrepancy between the EMTs perspective of adherence to professional ethical standards compared to their patients. In general, EMTs rated themselves better than the patients. Female patients had the poorest perception of adherence to ethical standards. EMT level of training and employment status resulted in a better perception of adherence to ethical standards.

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Authors' Contribution

All authors pass the four criteria for authorship contribution based on the International Committee of Medical Journal Editors (ICMJE) recommendations.

Conflict of Interests

The authors declared no potential conflict of interests with respect to the research, authorship, and/or publication of this article.

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