

Research Article

**What is the level of knowledge and attitude of medical students
about health measures incrisis (2016&2017)?**

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ABSTRACT

Health measures in crisis, is one of the things that can reduce damage caused by disasters if it done properly. The aim of this study was assessing the knowledge and attitude of students in the Kermanshah university of medical science in the field of health measures in crisis during 2016 and 2017. The target society was all the students in Kermanshah University of medical science that 618 persons among them were chosen for study. Data collection tool was a questionnaire that was used in a similar study and the gained results were analyzed by SPSS volume16 and Excel2010 software and the statistical tests (SD, t one sample, Mann-Whitney Kruskal-Wallis and Kandal Tau Test). The results revealed that the mean score of awareness in students about health measures in crisis, was 5.09 with 2.15 std and the df of 0-10 and only 26% had enough awareness in field of health measures in crisis also we understood that the mean score of students was 33.72 with 5.21 std and df of 10-50 and that is positive attitude. As the students of Kermanshah university of medical science have not a good level of awareness about the mentioned subject, it is necessary to set educational courses for promoting their knowledge about needed measures in crisis.

Keywords: medical students, emergency situation, knowledge, attitude

INTRODUCTION

A large number of scientist believe that global warming and the resulting increase in temperature causes extreme weather phenomena such as terrible storms, floods and catastrophes and natural disasters(1). The effects that natural disasters have on human life it is not limited to such things as the destruction and complexity of

order and construction, but in many cases causes many people faced to inability to deal with accidents, because of the loss of vital life-requirements such as housing, food, clothing, etc. so they are more defenseless against the illnesses that happen in these situations (2,3). According to the reported statistics, the natural disasters in two

recent decades, caused thousands people death and they remained harmful effects on 800million people life(3,4). Among the countries that are more exposed to natural disasters and accidents, Iran has a significant share in the amount of harms against these disasters. According to the reports of tree recent decades, Iran was faced to the disasters that caused 2689 persons death and they remained 737058000 dollars damages (5).

In such a situation, there is a possibility of a dangerous occurrence at the surface of the globe at any given moment, preparedness to deal with emergencies it has been raised as a major concern throughout the world. This readiness can include actions and solutions provided by organizations, communities and individuals that enhance the ability to respond appropriately in the face of a crisis (6).

Awareness and attitude in field of health actions that are needed in crisis, can have lot of effects on reducing the side effects of disasters and natural accidents. On the other hand the evaluation of awareness and society members' attitude can provides familiarity with the current situation and condition regarding readiness to deal with the crisis thus the results can be helpful to design more accurate and complete programs for troubleshooting existing problems (7). The importance of this issue lead us to do this study with the aim of assessing the knowledge and attitude of the Kermanshah university of medical science in the field of health measures in crisis.

METHODS

Study location: Kermanshah province with 24434 m² space is one of the most affluent provinces of Iran and it has a history of several earthquakes for many years and it is as a mountainous province with cold weather (8). Kermanshah university of medical science with six separated schools is one of the important organs in controlling the crisis, is considered as the location of this study.

Sampling: this study was a descriptive-analytic study for assessing the level of awareness and attitude of students of Kermanshah university of

medical science about of health measures in crisis. To increase the credibility of the study and more precision the target society in this study was all the KUMS(Kermanshah University of Medical Science) students in two consecutive years 2016 and 2017 and by using Morgan table we chose 618 students as our samples and they were studied in this two years. Selection of samples from colleges was quotas. 155 persons of samples were from medical school, 152 persons from paramedical school, 106 persons from nursing and midwifery school, 124 persons from hygiene school, 33 persons from dentistry school and 48 from pharmacy school were chosen.

Questionnaire: the data gathering tool was a questionnaire that was used by Vosoughi et al previously (7) including three parts; the first part was for demographic data, the second had ten questions for level of awareness and third part had ten questions for attitude. In awareness measuring part, to each correct answer, a score was assigned and zero to the wrong answer. In third part the students' attitude was evaluated by 1-5 likert scale including completely agree (5), agree (4), no idea (3), disagree (2), completely disagree (1). Regarding this way of scoring, each responder can score between 10 and 50 (average between 1 and 5) for questions about attitudes.

Statistical software: in this study the SPSS 16 version and 2010 Excel were used for analyzing the data and finally for comparing the data collected, the statistical test including t-one sampling, Mann-Whitney and Kruskal-Wallis and Kandal Tau Test were used. The significance level was considered as $\alpha = 0.05$.

Finding

Data analysis showed that from all participants in this study, 69.1 % were female students and 30.9 % were male. 87.1% were younger than 23 year old and 12.9% were older. The portion of these persons is showed in the diagram number 1 separately.

What is the level of knowledge and attitude of medical students about health measures in crisis (2016&2017)?

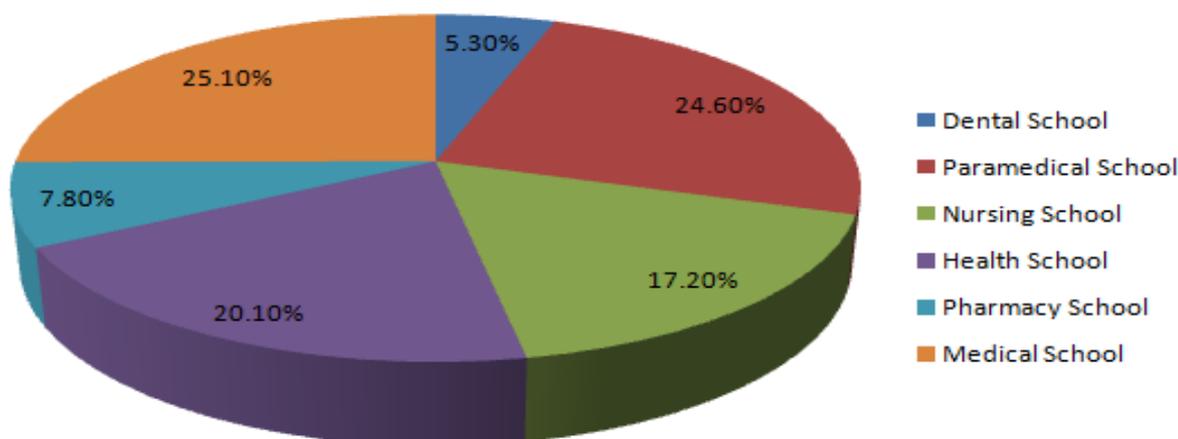


Diagram1: the portion of participants in study according to their school

The students' answers about the health actions in crisis is brought in table number 1. At first the number and percentage of correct answers in field of awareness was calculated according to the results for questions number 2, 4, 6 and 7 this portion was more than 0.5 and it was less than 0.5 for others in such a way that the question number 8 (the most appropriate way for mosquito fight in emergency situations in camps in the long run) with 18.9 % had the minimum responders and number 7 (The easiest ways to disinfect water in emergencies) with 66.7 % had the maximum responders (table 1). The mean score of students' awareness about health actions in crisis was 5.09 with std of 2.15 and df of 0-10. Considering that in this study a total awareness level score of 6 or more has been set as the criterion for a good level of awareness we can conclude that the level of awareness about health actions in crisis in samples is less than the diagnostic criterion partially.

Table1: Students' awareness about emergency measures and the results

Question number	Questions	Awareness	Lack of awareness	Level of awareness
1	In emergency situations, prevention includes which of the following?	240	378	38.8
2	After the disaster, which of the following diseases most likely are epidemic?	382	236	61.8
3	Which one of the locations are suitable for the production and distribution of Food in emergency?	307	311	49.7
4	What are the features of Food distributed in emergency situations in the early hours?	395	223	63.9
5	Which method is best for waste disposal in emergencies?	285	333	46.1
6	Which method is best for providing safe drinking water in emergencies in the crowd in the early hours?	441	177	71.4
7	Which of the ways is the easiest method for disinfection of water by the people themselves in an emergency situation?	412	206	66.7
8	Which one of the following methods is the most appropriate way to combat mosquitoes in an emergency situation in the camps in the long time?	209	409	83.33

9	Where is the best point where health supervisor health in emergency situations with the least manpower can affect the food health?	258	360	41.7
10	In an emergency situation, Which of the ways is the easiest method for construction of waste disposal system?	221	397	35.8

The students' answer to attitude questions in field of health actions in crisis is brought in table number2. The mean score of their attitude was 33.72 with Std 5.21 and df of 10-50 by comparing this mean score to the hypothetical average (The expected value for all questions is 20) we see that the students' attitude is more than the hypothetical average, in addition a single sample t test also showed this difference except for questions 1 and 2.

Table2: the students' attitude about health actions in crisis

Question number	Question	positive attitude	No comments	Negative attitude	Average	Standard deviation
1	Is cutting off water and outage electricity in the event of an emergency, makes providing healthy foods more difficult?	410	113	95	2.5	0.747
2	Does natural ventilation inside the tent is the best method of ventilation?	368	172	78	2.46	0.708
3	Does open steep channel is enough in an emergency situation in order to distract wastewater from latrines?	211	182	225	1.97	0.840
4	Dose being clear spring water in emergency situations can be considered as safe drinking water?	258	121	239	2.03	0.897
5	Does laboratory controls on food and water in emergency situations is difficult?	364	138	116	2.04	0.785
6	Dose the camp should be large for ease of service and control of communicable diseases?	289	188	141	2.23	0.799
7	Does the soil should be used to cover in the waste disposal method in the trenches after each use?	281	226	111	2.27	0.748
8	Dose it is better that smaller tents be used in each camp in emergency situations?	328	143	147	2.29	0.827
9	In emergency situations most of the time, does filling the lands by waste for final disposal is the best method?	230	189	199	2.05	0.832
10	Does boiling method for providing safe drinking water in camps for health officials is the easiest way?	379	125	114	2.42	0.784

As you see in table 3 the Mann Whitney test results showed that there isn't a significant difference between the mean score of awareness in male and female. In addition, there was a significant difference between the mean score of awareness in comparing students with less than 4 academic years and more than 4(table3). The Kruskal Wallis results showed a meaningful difference between the mean scores of awareness in different schools (table 3). The maximum score was for midwifery students and the minimum was for Anastasia students finally the awareness mean score was evaluated according to the age and it had no significant difference (table 3).

The Mann Whitney test results showed that there is not significant difference between the male and female attitude about the subject. There was no significant difference between students' attitude in terms of

educational years, which was divided into two groups of 4 and under 4 years old (table 3). Also, using Kruskal-Wallis test, there was a significant difference in the attitude of students among different faculties. The results showed that the students of the Faculty of Health had the highest mean of attitude and the students of the Faculty of Pharmacy had the least mean of attitude. The results of this test showed that attitudes of students in different fields also differ (Table 3). The highest attitude score was for students in dentistry and the lowest score for attitude was for medical students. Finally, students' attitudes toward the age factor were also examined. Results showed that there was no significant difference at the level of $\alpha = 0.05$ (Table 3).

Table 3: the mean score of students' knowledge about emergency measures in terms of gender, age group, college and academic years.

Variables		Abundance (Percent)	Mean \pm standard deviation of knowledge score	P-value	Mean \pm standard deviation Attitude Score	P-value
sex	female	427(69.1)	5.13 \pm 2.18	0.619	33.55 \pm 5.33	0.217
	male	191(30.9)	5.005 \pm 2.06		34.11 \pm 4.93	
age	19-23	538(87.1)	5.11 \pm 2.15	0.633	33.62 \pm 5.21	0.230
	24-29	80(12.9)	4.95 \pm 2.13		34.40 \pm 5.17	
Academic years	Less than 4 years	236(38.2)	5.34 \pm 2.12	0.003	33.11 \pm 6.001	0.024
	More than 4 years	382(61.8)	4.94 \pm 2.15		34.10 \pm 4.62	
schools	medical	155(25.1)	4.37 \pm 1.83	0.001	33.49 \pm 5.79	0.005
	Paramedicine	152(24.6)	4.38 \pm 1.72		34.21 \pm 4.36	
	Nursing	106(17.2)	6.14 \pm 1.93		32.60 \pm 5.14	
	Health	124(20.1)	5.61 \pm 2.46		35.09 \pm 5.59	
	Dental	33(5.3)	4.51 \pm 2.42		33.12 \pm 3.43	
	Pharmacy	48(7.8)	6.43 \pm 1.79		32.33 \pm 5.16	

DISCUSSION

The medical science students as an important part of health in every society can have influence on health and prosperity, directly hence, in facing to crises, high awareness and attitude can reduce the financial losses and fatality caused by the incident. According to the findings of this study, the level of general knowledge of the subjects under study in emergency situations is less than the diagnostic criterion and only 26% of students had enough awareness about health actions in crises. In a study by Asl Hashemi, in Zanjan (1388) the awareness and attitude was less than 12.9% (9) also the result of Shademani and Shekani's study in Gilan (2004) revealed that the attitude and performance of 79% of students was weak and moderate about earthquake(10) and it is consistent with our study. In a study by Kianmehr et al in Shahrekord (2009) the results uncovered that 85% of health center experts in Chahrmahal Bakhtiari province had weak or moderate awareness of the

necessary measures in incidental accidents (11) also in Imani's et al study that was done in Bandar Abbas (2011), revealed that 80% of nurses had low or moderate knowledge about crisis management and preparedness for accidents and disasters (12). This knowledge of experts and nurses in these studies can be attributed to the educational weakness of university education and lack of proper attention to training and holding workshops and syllabuses related to crisis management and necessary health measures in emergency situations.

In present study the highest average for rating the level of awareness was about the best way to fight insects and the least was the easiest way to disinfect water in emergencies. In Mansoury and Laghaee's study (2002) with the purpose to assess the knowledge of health workers in Kermanshah province about natural disasters and its complications, It has been stated that the least amount of knowledge about the methods of sanitation, restoration of water and Protecting the

River after the occurrence of natural disasters and the highest level of knowledge about the recognition of natural disasters and its complications have been reported (13). In Vosooghi et al study (1390) the highest mean of the questionnaire was related to the epidemic of diseases and the least was related to the disposal of wastes (7).

Regarding the results, it can be concluded that the general attitude of the subjects studied in this research has been positive regarding the discussed issues. In Jorvand et al study in 1392 with the title of the preparedness of the health workers of Dehloran city in dealing with disasters was done 89.39% of people had high positive attitude (6). In a study by Ganbari et al. (2011) on nurses at Razi Hospital in Ilam the average score of participants in the attitude level was 66.18 out of 80 Which indicates a positive attitude in the study(5), which is similar to the results of the present study. In the end, for measuring the correlation between knowledge and attitude Kandah Tao test was used. To do this, at first the variable of attitude was divided into three groups with positive, neutral and negative attitudes and the level of awareness was divided into three groups of people with good, moderate and poor knowledge, the results showed that there was a significant relationship between knowledge and attitude of students ($P= 0.010$) in other word we can say that the more one's awareness, the more positive the attitude will be, or vice versa. According to Wang et al, With the aim of assessing disaster preparedness education (14), Bartley et al (15) and Eidros et al. (3) they all confirm the effectiveness of educational processes to improve the readiness of medical personnel in dealing with disasters and fulfill their duties in difficult circumstances. Also, the results of Fung et al (2007), Nasrabadi et al (2003), Katz et al (2004) and Duong (2008) all confirm this finding that the implementation of the readiness program has had a positive effect on the readiness of staff and students (19-16). Therefore, it can be used to increase students' awareness of education as an effective way of preparing personnel for disaster

response and preparedness to deal with disasters and incidental accidents.

CONCLUSION

Considering the results of this research showed that students of Kermanshah medical science despite the important position that after graduation and starting to work in coordinating and helping the injured people and controlling the environmental conditions of the crisis, they have a low awareness of this. Hence training in the form of training classes, workshops, brochures, educational films, and the provision of related curricula can play a part in the process of coping readiness that has been effective in promoting the readiness of individuals so it is suggested that is university administrators in order to raise students' awareness and attitudes in order to enhance the readiness of students in the field of activity as well as to increase the quality of services provided by these people in such incidents ,establish and implement educational courses in this field.

REFERENCES

1. Nivolianitou Z, Synodinou B. Towards emergency management of natural disasters and critical accidents: the Greek experience. *Journal of environmental management*. 2011;92(10):2657-65.
2. Mansouri F, Leghayi Z. Knowledge of health workers in the Kermanshah Province of natural disasters and its complications. *Fourth Conference on Environment Persian*. 2002: 213. (Persian)
3. Idrose AM, Adnan WA, Villa GF, Abdullah AH. The use of classroom training and simulation in the training of medical responders for airport disaster. *Emergency Medicine Journal*. 2007;24(1):7-11.
4. Jahangiri K, Tabibi SJAD, Maleki MR, Alamdar SH. A comparative study on community-based disaster management (cbdm) in selected countries and proposing a model for Iran. *Payesh Journal* 2009;8(1):49-57.(Persian)

5. Ghanbari V, Maddah S.S, Khankeh HR, Karimloo M, Ardalan.A. The Effect of a Disaster Nursing Education Program on Nurses' Preparedness for Responding to Probable Natural Disasters. *Iran Journal of Nursing* 2011;24(73):72-80.(Persian)
6. Jourvand R, Sadeghirad K, Golami OA, Vejdani M, Panahi R, Heydarabadi AB. Disasters preparedness of health workers in Dehloran, Iran. *Journal of Health in the Field*. 2015;3(3).(Persian)
7. VosoughiNayyeri M. JahedGH.AsgariM. Dargahi GH, GolestaniFar H, ParastarS. Investigation of knowledge and attitude of student's in Tehran University of medical science on health actions in emergency. 2011;4(2):43-51.(Persian)
8. Falahi A, Binesh N. Evaluation of Seismic Damage in Kermanshah (Case Study 4, Specialist Town).The 2nd International Conference on Comprehensive Crisis Management in Natural Disasters; Tehran: Company Quality Promotion; 2006.(Persian)
9. AslHashemi A. The course of providing emergency health measures in increasing students' knowledge and attitudes. *Journal of Medical Education Development Zanjan*.2009;9.1-15.(Persian)
10. Shademan RM, Shekani Z. Study of awareness and performance toward students' nursing in Guilan University of Medical Sciences about earthquake in northern Iran 2003.Proceedings of 2nd International Congress on Health, medication and Crisis Management in disaster 2004 Nov. 24-26; Tehran, Iran. p: 533-34.(Persian)
11. Kianmehr N, Mofidi M, Nejati A. Survey Knowledge of physicians from disaster. *Journal of Medical Council of Iran* 2009; 27(2): 184-9.(Persian)
12. Imani E, HosseiniTeshnizi S, Tafrihi M, Alavi A, Jafari A, Badri S, et al. Nurses' Knowledge about Crisis Management and its Related Factors. *Journal of Health and Care* 2011;13(4):10-18.(Persian)
13. Mansouri F, Leghayi Z. Knowledge of health workers in the Kermanshah Province of natural disasters and its complications. Fourth Conference on Environment Persian. 2002: 213. (Persian)
14. Wang C, Wei S, Xiang H, Xu Y, Han S, Mkgangara OB, et al. Evaluating the effectiveness of an emergency preparedness training programme for public health staff in China. *Public Health* 2008; 122(5):471-77.
15. Bartley B, Fisher J, Stella J. Video of a disaster drill is effective in educating registrars on the hospital disaster plan. *Emergency Medicine Australasia* 2007; 19(1):39-44.
16. Fung OW, Loke AY, Lai CK. Disaster preparedness among Hong Kong nurses. *Journal of advanced nursing*. 2008;62(6):698-703.
17. Nasrabadi AN, Naji H, Mirzabeigi G, Dadbakhs M. Earthquake relief: Iranian nurses' responses in Bam, 2003, and lessons learned. *Int Nurs Rev*. 2007;54(1):13-8.
18. Kat AR, Nekorchuk DM, Holck PS, Hendrickson LA, Imrie AA, Effler PV. Hawaii Physician and Nurse Bioterrorism Preparedness Survey. *Prehospital and Disaster Medicine*. 2006;21(6):404-13.
19. Duong K. Disaster education and training of emergency nurses in South Australia. *Australasian Emergency Nursing Journal*. 2009;12(3):86-92.