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Original Article

Knowledge, Attitude, and Performance of Nurses' Crisis Management in Natural Disasters in Yazd City

Tahere Soltani[1], Mohammad Hossein Baghianimoghadam[*2], Mohammad Hassan Ehrampoush[3], Najmeh Baghian[4], Abdolkhalegh Jafari[5]

1- Faculty of Health, Shahid Sadoughi University of Medical Sciences, Yazd, Iran.
2- Department of Health Services, Shahid Sadoughi University of Medical Sciences, Yazd, Iran
3- Department of Environmental Health, Shahid Sadoughi University of Medical Sciences, Yazd, Iran
4- Health policy research center, Faculty of Health, Shahid Sadoughi University of Medical Sciences, Yazd, Iran
5- Office of Performance Evaluation, Shahid Sadoughi University of Medical Sciences, Yazd, Iran.

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Abstract

Introduction: Natural disasters are considered as events that are beyond human control and usually result in death and different injuries; they also significantly affect public health. The lack of proper sanitation and communal life creates numerous problems. The aim of this study was to determine the knowledge, attitudes, and performance of nurses (since nurses work more than others in disasters) in disaster management.

Materials & Methods: This was a cross–sectional and descriptive study. The 220 participants of this study were selected by stratified random sampling method. Data was collected by questionnaire taken from similar studies in the field of nursing whose reliability was confirmed by the relevant specialists and its validity was confirmed by Cronbach's alpha (0.83). Data analyses included Spearman Test, analysis of different levels of the independent variables (Mann-Whitney, Kruskal-Wallis test) or T- Test, and comparing means as well as the related data (non-parametric).

Results: In this study, the average age of staff was 33.94±6.4 and years of their work experience was 10.5 ±7.14. The nurses' average level of knowledge about crisis management was 13.05±5.24 out of 22. The mean grade scores of attitude to crisis management was 28.94±3.39 out of 33, further, their function in crisis management was 45.88±6.5 out of 57.

Discussion: Due to the increased frequency of occurrence and consequences of the disaster and the special role of health care services before, during, and after the occurrence of such incidents, the results were not suitable. Then, it was concluded that proper preparation is essential for nurses as the largest providers of information and health services to people, so their performance must be measured which is the objective of this study.

Keywords: Crisis Management, Knowledge, Attitude, Perfromance, Nurses.

[*] **Corresponding author: Tel:** +9131520732 **email:** Baghianimoghadam @yahoo.com

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Introduction

Natural disasters are considered as events that are beyond human control and usually result in death and different injuries; they also affect public health significantly. Disasters affect people's lives in different ways. Accidents caused by natural disasters may directly cause injury and death, or indirectly lead to the transmission of infectious diseases. The lack of proper sanitation and communal life creates numerous problems [1]. Accidents and disasters in the past 20 years have affected 800 million people in the world and have caused thousands of deaths and economic damage of more than $ 50 billion. In the last decade, 83% of those who had died from natural disasters were in Asia [2].

Iran, due to its size, geographical location, and climatic diversity is one of the most disaster-prone countries, about 5,000 of Iranians dies annually and thousands of them get injured. Financial damages caused by natural disasters can be more than 100 million dollars [3]. The literature on this field showed that from 40 types of natural disasters in the world, 31 of them are known to occur in Iran [4]. The statistics also show an increase in natural disasters and a lack of preparation in dealing with them [5]. As a region with high possibility of crisis, Iran is attacked by natural disasters such as floods and earthquakes as well as man-made crises such as wars, terrorist acts, and accidents annually.

Thus far, there has not been enough training for most of Iranian nurses to deal with crisis and those who had or obtained training generally have not experienced participation in any crisis [6]. Further, since nurses have more responsibilities than the past, it is essential for them to develop their role and acquire leadership and management skills. The nursing interventions in crisis increase their ability to adapt as well as reduce stress and anxiety related to the trauma of the crisis. Crisis intervention techniques are important clinical skills for all nurses regardless of their work location. Nurses not only need to have skills but also should be able to judge the clinical risk situations, the decision to maintain life, solve complex problems, and think creatively. Planning and management of crisis is the important roles of nurses. Thus, crisis management is one of the most important requirements of today's society. To deal with disasters properly and to respond them according to international standards, learning the knowledge of Crisis Management is essential [7]. As the results in other studies reported, crisis management training courses are required due to the hospital supervisors and managers' low level of awareness. As it was observed, education programs could reduce mortality in people injured in disasters [8], because education programs promote hospital personnel’s awareness about the available programs in dealing with disasters and increase their participation in planning and resolving the problems. These programs also can increase the staff's performance in accomplishing duties assigned to them.

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Considering lack of studies in this field, this study aimed to determine the knowledge, attitudes, and performance of nurses to manage crisis effectively in natural disasters.

Materials and Methods

This was a cross–sectional and descriptive study in which all nurses (i.e., 750) working in hospitals of Yazd Medical University (Afshar, Shahid Sadoughi, Shahid Rahnemon and Burn hospitals) participated. Previous similar studies [9] selected a sample size of 220 by applying stratified random sampling method. Data was then collected through the questionnaire prepared by other researchers working in the same field. The questionnaire's reliability was verified by the relevant specialists and its validity was confirmed by Cronbach's alpha 0.83. This questionnaire composed of two parts; first one included questions about variables of age, gender, education, work experience-type situation, and kinds of responsibility. The second part consisted of 16, 11, and 19 questions dealing with knowledge, attitude, and performance, respectively. The knowledge questions were in multiple choice form with "Yes", "No", and "I do not know" as their choices. The questions of attitude and performance were measured on the Likert triplex. In order to analyze data, Spearman test, analysis of different levels of the independent variables (Mann - Whitney, Kruskal-Wallis test) or t- test, comparing means, and the related data (non-parametric) were applied.

Results

In this study, the staff's age and work experience average years were 33.94±6.4 and 10.5 ±7.14, respectively. The average level of knowledge of nurses about crisis management was 13.05±5.24 out of 22. Further, the mean scores of attitude in crisis management was 28.94±3.39 out of 33 while performance mean scores in crisis management was 45.88±6.5 out of 57.

Table 1 - Mean and SD of variables

Variables	N	Mean	SD	Minimum	Maximum
Knowledge	217	13.5	5.24	2	22
Attitude	219	28.94	3.39	17	33
Performance	219	45.88	6.5	25	57
Age	219	33.94	6.4	22	55
experience	209	10.58	7.14	1	29

Results showed that the mean scores of performance for men were significantly higher than that of women. Also, knowledge and attitudes of men were higher than those of women but these rates were not statistically significant.

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Table 2- Comparison between the mean scores of knowledge, attitude, and performance of crisis management and gender

Variables	Number	Knowledge			Attitude			Performance		
Gender		Med	Mean	SD	Med	Mean	SD	Med	Mean	SD
Men	47	15	13.72	2.9	30	29.06	3.3	49	47.93	5.8
Women	170	13.5	12.87	3.4	30	28.91	3.4	46	45.28	6.6
Total	217	14	13.05	3.3	30	28.94	3.4	47	45.88	6.5
Mann -Whitney	p		0.12			0.83			0.01	

In this study, the results of Kruskal-Wallis test showed that there was no significant relationship between the scores of knowledge, attitude, and performance of nurses and their education level. Additionally, the results presented by Spearman correlation test showed a positive significant correlation between the performance of crisis management among nurses and their knowledge and attitudes.

Table 3- Spearman correlation coefficient score of knowledge, attitude, and performance with age and experience

Variables	knowledge	Attitude	Performance	Age	experience
Knowledge	1				
Attitude	0.99	1			
Performance	0.14*	0.5**	1		
Age	-0.36	-0.02	-0.82	1	
experience	-0.003	0.046 -	0.12	0.92**	1

Spearman p**<0.01 *<0.05

Results of Spearman correlation revealed that there was no positive correlation between knowledge, attitude, and performance of nurses on the one hand and their age and work experience on the other hand.

Discussion

Due to the increased frequency of occurrence and consequences of the disasters and the special role of health care services before, during, and after the occurrence of such incidents, proper preparation is essential for personnel. Personnel need to provide these health services, and nurses are the largest providers of these services to people (8,10,11). In this study, knowledge, attitude, and performance of nurses managing natural disasters and crisis were investigated in Yazd.

Results of this study showed that nurses' average level of knowledge about crisis management was 13.05±5.24 out of 22, which represents a moderate level of knowledge about crisis management. This finding is in the same line with the results achieved by Imani et al. [5], who stated that the knowledge of nurses

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about crisis management was moderate. However, these results are not supported by the results of the study conducted by Fung, Kats Duon, and Nasrabadi [6]. They reported a low level of knowledge for nurses on crisis management stating that nurses have not been trained in this field. In another study, information level of general practitioners and specialized partners was low in dealing with unexpected events. Their knowledge was inadequate in this filed, while majority of them stated that the training courses on disasters were essential for physicians [8].

The study of Hajilo at Zanjan' hospitals revealed that knowledge of 76.8% of managers and supervisors were unacceptable while 23.2% of them had acceptable knowledge and only the knowledge of 2.3% of them was good [13]. The results of the study carried out by Hagavi et al. represented that preparation of medical records dealing with the crisis is poor and most employees' level of awareness (61.6 percent) was very poor [14].

The data of Magnaye et al. showed that all medical personnel should be able to help people and victims of crisis and always be ready to offer medical services in the time of crises and disasters. They also need to be aware of their duty in critical situations [9]. In this regard, according to Husser, educational programs about crisis management could reduce mortality in people injured in the disaster [13]. Because such programs promote awareness of hospital personnel about available programs dealing with disasters, increase employee participation in planning and resolving the existing problems, and increase the expertise of the personnel in executing the tasks assigned to them.

Our data showed no significant difference between the mean scores of knowledge and attitude of nurses related to their gender, but the knowledge and attitude of men was more than those of women, these results were same as the results reported by Mesdaghiniya [15] and vosoughi [16].

Results of the present study showed that there was no significant difference between nurses' mean scores of knowledge, attitude, and performance on the one hand and their education on the other hand. But, the results of Imani et al. [5] study did not support these findings. Their results stated that people's level of education is related to and effective on their crisis management; awareness of seniors was moderately high and awareness of experts was moderate.

With higher education levels, the importance of crisis preparedness increases and one is more motivated to increase his/her information. The results of Heshmatinabavi et al. showed a significant difference between the mean scores of students' knowledge of nursing between the first and the last classes ($p<0.0001$) [17].

The results of the current study showed that the mean score of nurses' attitude towards crisis management was 28.94±3.39 out of 33. These data is same as that of Hajilo (14) stating that 83.7% of managers and supervisor

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of nursing had positive attitude about the crisis management.

Our results revealed that nurses' performance in crisis management was 45.88±6.5 out of 57. Moreover, Heshmatinabavi [17] reported that majority of students were weak in fulfilling the role of nurses in crisis.

Conclusion:

Therefore, due to the lack of acceptable level of knowledge, attitude, and performance of nurses in Yazd hospitals, there rises a need for crisis management training courses. Thus, relevant authorities need to plan and implement education courses to prepare their employees. This study suffered from some limitations, including the fact that since nurses had not participated effectively in crisis management, they did not respond well to some functional questions.

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