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Educational needs of emergency nurses according to the emergency condition preparedness criteria in hospitals of Tabriz University of Medical Sciences

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ABSTRACT

Aims: Because of the increased critical situation in the world, it is essential for all health care professionals, especially nurses, to be ready to manage emergency situations. This study assessed the educational needs of nurses for critical situations preparedness on which, educational planning could be done.

Methods: According to a descriptive cross-sectional study design, 140 emergency nurses in Tabriz's educational hospitals selected. Emergency Preparedness Information Questionnaire (EPIQ) was used as a tool to assess preparedness of nurses. The questionnaire consisted of two parts. The part one, consisted of demographic profile questions and part 2, EPIQ, included about 44 questions in the eight subs-scales. Data analyzed by using SPSS ver. 17 software.

Results: Data analysis showed 66.6% of samples were female. 44% of the nurses had no experience of special training in crisis situations. The total score of emergency condition preparedness of the sample was (2.30 ± 0.97); the lowest and highest scores of the subject was Reporting and Accessing Critical Resources subscale (2.03 ± 0.9) and Triage subscale (2.51 ± 0.7) respectively. The mean scores of each item, in all eight sections (except triage), were moderate to low.

Conclusion: According to the results, the emergency nurses are not prepared enough to respond appropriately in crisis situations .Therefore crisis situations trainings should be offered for the nurses as continuing education. In addition, the development of crisis nursing courses in nursing post graduate departments is suggested.

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1. Introduction

In recent years, the world has witnessed natural disasters and crises whose virulent effects on human is undeniable. During the last two decades, unexpected natural disasters have entailed the death of a large number of people all over the world and in recent decades,

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different aspects of bioterrorism, microbial and chemical wars have been discussed and taken into consideration [1]. During the years 2000 to 2009, the world has encountered 385 destructive natural blights, in such a way that this amount, compared to the time span from 1980 to 1989, had a growth of 233 percent [2].

Disasters have always happened in different parts of the world including our country, Iran. Iran is ranked among the first 10 countries of the world which are fraught with the chances of disaster. And of 40 existing natural disasters, 31 of them have happened in Iran and consigned a lot of people to hospitals. Moreover, considering the strategic location of Iran, the prospect of foreign enemy and outbreak of military crisis is not that much inconceivable. Thus a more comprehensive attention to scientific and practical strategies for preparedness of all organizations and personnel is required and the necessary needs should be obviated and the requisite measures should be undertaken [3].

Disasters may occur at any time, in any place, or with any intensity. In this situation the death rate increases and a lot of problems surface and consequently the demand for health and medical care rises. In these cases, health and medical centers and personnel especially nurses ought to be well prepared to handle the stepped-up demand for special medical care [4].

Ensuring care needs at the time of disaster involves the system being ready for offering services not only in hospitals but also all over the city. Hospitals could be pressed by unexpected disasters whether at the time of war or peace. In this case, the situation involves changing the routine of the hospital or assigning the personnel to specific activities. Thus the personnel have to employ their knowledge according to new techniques, including knowing desirable standards thus in emergency and critical situations can show appropriate reaction through proper discrimination and distinctive practical ability. These basic factors cannot be provided immediately but it needs prior training and preparedness [5].

Training personnel to cope with disasters can reduce the time of responding to the events and increase the survival of the afflicted people by far [6]. In the complicated world we are living now education is of great importance [7]. Education is the base of learning [8]. Training personnel and nurturing humanistic potentials have long and rich precedent. It includes activities conducted to enhance the level of qualifications and increase knowledge. It also creates awareness and skill for offering better clinical services [9].

Educators need to indicate the desirable changes which have to be created in terms of knowledge and skill within the member or members of an organization to be able to carry out their duties and responsibilities related to their job in a desirable and acceptable way and in compliance with job standards [10].

Nurses comprise the highest percent of health and medical workforce. They are qualified and skillful in leadership and management and can cover a wide range of roles in preparedness necessary for emergency situations. Nurses need to have the basic knowledge and skill to employ an effective approach to respond to critical situations; thus, assessing the educational needs of nurses in terms of their knowledge is something which should be determined regarding educational priorities, and to have the best reaction in critical situations and thus have the effect and ideal nursing care, these needs should be taken into consideration and fulfilled [11]. Emergency nurses are even the first and have priority in providing these cares and all patients first refer to them. In emergency cases, essential challenges are evident in organizing and managing emergency personnel in hospitals, and constant education for being prepared in these situations is intensively necessary [12].

Teaching preparedness proficiency in emergency situations is necessary in all professions related to health and medical care and their significance has been accentuated

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after September eleventh and SARS disease, thus the requisite preparation and facilities should be provided [13].

Since there have been no scientific study and research on educational needs of nurses in natural and man-provoked crises in Iran, besides the necessity of multilateral preparedness for assigned missions considering the potential threats to our country, the present study assesses the educational needs and degree of preparedness in nurses in critical situations to determine not only the educational needs but also the shortcomings and strength of the current educational curriculum in nursing universities. Then through obviation of these shortcomings, careful and scientific planning can be rendered. Undoubtedly by taking theses measures, positive and desirable results would be attained in enhancing nurses' proficiencies and improving the required skills to reduce the consequences at the time of crises and subsequently improving the forces engaged and increasing standard cares. Therefore, this study was conducted to "investigate the educational needs of emergency nurses in terms of preparedness criteria in critical situations.

2. Methods

This is a descriptive cross-sectional study and was conducted by all nurses of emergency wards of Tabriz educational hospitals participating throughout the year 1390. This study was conducted among the nurses who had the experience of offering nursing services in the emergency wards of the above-mentioned medical centers at least for one year. The nurses had also higher education and were willing to take part in the study.

In this research Emergency Preparedness Information Questionnaire (EPIQ) was used, that was developed by Wisniewski et al in 2004 and has been employed in other studies at times. The questionnaire was composed of two sections. The section one included demographic information (age, sex, employment background, educational level) and the section two included the educational needs according to preparedness criteria in critical situations, including 44 questions and 8 subsets. The subsets were included the crisis management system composed of seven questions, the triage subset with six questions, the relations and connections includes seven questions, the psychological issues and vulnerable population with six questions, the isolation and sterilization of five questions, the epidemiology and clinical decision with four questions, the giving report and having access to vital resources of four questions, the familiarity with biological factors included four questions and the perceived knowledge of preparedness in critical situations only one question. In this instrument Likert scale "not at all familiar", "Slightly familiar", "Somewhat familiar", "Moderately familiar", "Extremely familiar" was used and the scores assigned to the items ranged from Extremely familiar=5 to not at all familiar=1. In the present study the veracity of the translation was approved by an English language expert and the validity of the instrument was investigated in terms of content and formal validity by a cooperating group of 10 university professors and their views were considered in the study. The reliability (internal consistency) of the instrument was assessed by calculating Cronbach's alpha (α=0. 98) and also test and retest method was used to assess the reliability of the questionnaire. Nine questionnaires were distributed among the personnel of the mentioned hospitals at a ten-day interval then the concordance of the answers was evaluated and the coefficient of retest was defined r=0. 98 which indicated the consistency of the questionnaire.

After it was approved by the ethics committee of Tabriz University of Medical sciences, to begin the research, the questionnaires were given to the employed nurses in emergency wards and then after completion, they were collected. Confidentiality of the information was observed by not mentioning the name of the study units in the questionnaire and not being distributed by the researcher and also by collecting the questionnaires in a box. Every

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single study unit was informed that participating in the research was voluntary. Finally, after completion and collection of the questionnaires, the data were statistically analyzed by descriptive criteria such as number, percentage, mean and standard deviation, t-test, ANOVA test, in software spss17.

3. Results

Of 140 distributed questionnaires, 102 were analyzed statistically and the results demonstrated that most of the nurses participated in the present study were female (66.6%). While investigating the education of the nurses in the emergency ward, it was revealed that 93% participants, that means most of them, had a bachelor's degree and 51.9% had a less-than-ten-years experience of working in the emergency ward (Table1).

About education specifically for critical situations, 43.1% participants had not been trained by any organization and 16.6% were trained by the University Crisis Management Center, 36.3% by the hospital and 3.9% by Office of Nursing. The mean score of the nurses in the variables related to this research has been presented in different sets (crisis management system, triage, communications, psychological issues and clinical decision, giving report and having access to vital resources, isolation and sterilization, biological factors and perceived knowledge) in Table 2. The mean score for perceived knowledge of all the questions was 2.30 ± 0.97. The highest mean score and standard deviation given to subsets was in triage (2.51±0.7) and the least were forgiving report and having access to vital resources (2.03±0.9). The mean score of each subset in all eight subsets (except for triage) was lower than average (Table 2).

The result of the ANOVA test related to the association between the nurses' educational degree and the acquired score in preparedness criteria in critical situations revealed no significant difference (p=0. 57). These results prove that education does not have any effect on nurses' preparedness in critical situations because there is not an appropriate curriculum in any section (Table3). Likewise, t-test attests that regarding the relation between sex and the acquired mean score in preparedness criteria in critical situations, there was no significant difference (p=0. 043).

Table 1. Frequency distribution of the personnel under study in terms of personality-social qualifications variables.

Variables		Number	Percent
Gender	Female	68	66.6
	Male	34	33.4
Age	Younger than 30	50	49.1
	30-40	39	38.2
	More than 40	13	12.7
Educational Level	Associate of Ats degree	7	6.8
	Bachelor of Arts degree	93	91.1
	Master of Arts degree	2	2.1
Employment background	Less than 10 years	53	51.9
	10 to 20 years	40	39.2
	More than 10 years	9	8.9

4. Discussion

Nurses' preparedness in emergency situations reflects the features and characteristics of critical situations which include comprehensive knowledge, skills, proficiencies, and the necessary measures to respond to cases such as natural disasters, man-provoked events, chemical, nuclear, biological and explosive cases [14]. Nevertheless, there is no specified degree in crisis nursing and there are just short-term educational courses [15].

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Table 2: The mean and standard deviation of the acquired scored (maximum score of 5) in preparedness criteria in critical situations.

Subsets	Mean±Standard Deviation
Crisis management system	2.09±0.83
Triage	2.51± 0.77
Relations and connections	2.42±0.92
Vulnerable population and psychological problems	2.39±0.98
Isolation, sterilization and quarantine	2.11±0.99
Giving report and having access to resources	2.03±0,99
Epidemiology and clinical decision	2.20±0.99
Biological factors	2.19±0.93
Perceived knowledge	2.30±0.97
ANOVA F=0.56 df=2 p=0.57	

Table3: Tthe educational degree and the acquired mean score in preparedness criteria in critical situations

Variables	Mean ± Standard Deviation	Number
Associate of Arts Degree	2.16±*0.60*	7
Bachelor of Arts Degree	2.33±*0.83*	93
Master of Arts Degree	2.86±*0.89*	2

Based on the results attained in this research the total mean of nurses' proficiency in eight subsets of crisis preparedness was lower than average. The least proficiency was with reporting method and access to resources and the most preparedness was in triage. In the study of assessing the learning needs of Southern California nurses, their average perceived knowledge of emergency preparedness agrees with the average perceived knowledge in this study. Regarding the educational degrees, most of which were in BA level and just few AA and MA degrees, there was no difference in the nurses' perceived knowledge of emergency preparedness and most personnel had not been trained in courses required for emergency preparedness [16].

In a conducted study among physicians and nurses in Hawaii for assessment of their emergency preparedness such as bioterrorism, it was proved that just 20% of physicians and nurses had learned the necessary trainings for emergency preparedness and that in order to determine the educational needs, necessary measures should be taken. Likewise, in this study 44% of the subjects were not trained by any organization and the rest just had taken some few-hour courses and the total mean of acquired scores in this study has been reported less than average [17].

In a study which was carried out among nursing schools of the United States, the curriculum of emergency preparedness, in a time span of three years, was investigated and the teaching method was preferred to be in lectures and seminars. The participants in this study were chosen from different degrees; high school certificate, AA, BA, MA, and PhD level. And in general, the curriculum of all nursing schools was investigated. It was manifest that the curriculum up to 2001 has more accentuated biological, chemical and natural disaster preparedness and it is also necessary to pay more attention to curriculum on disasters such as nuclear, radiological, and explosive ones. In this study, regarding the mean of acquired scores which was lower than average in all situations, there should be a comprehensive consideration [18].

In a study conducted among the nurses in Tehran hospitals on clinical proficiency in critical situations such as earthquake, flood, war

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and accidents 14% of study cases had weak clinical proficiency and 64%. Five had average proficiency and just 21%. Five of the cases had high proficiency in critical situations [19].

In a qualitative study of the pathology of crises, emergencies and disasters course, it was revealed that the four main categories including management and coordination, management and planning of theoretical education, management and planning of clinical education, student's proficiency in responding to critical situations, have a significant role and that the damaging factors in the process of teaching crises, emergencies and disasters course are the result of inappropriate management and education and lack of constant evaluation of the final output of this process. Evaluation, through doing research and using their results and seeking feedback, can be effective in making the necessary changes and enhancing nurses' and students' proficiency [20].

5. Conclusion

The acquired results of the present study and also the mean score for each subset reveal that the nurses employed in emergency ward do not have the requisite preparedness to respond properly in critical situations and generally speaking their perceived knowledge of how to manage crisis (prevention, preparedness, reaction and restoration) is puny and is far away from the desirable condition. These executives should undertake essential measures such as educational planning for all subsets (except for triage which had a mean score a bit higher than average). Moreover, holding formulated educational courses for the personnel at service in all hospitals and medical- health centers and making them obligatory in the annual educational curriculum of nurses can be a way of enhancing nurses' knowledge and skill and make them prepared for encountering a range of crises. Therefore formulation of higher education in crisis nursing in nursing facilities is something necessary.

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