

Crisis Preparedness Among Clinical Staff: A Brief Survey in an Iranian Context

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Abstract

Background and Objectives: During crisis, hospitals have great responsibility in saving life and protect health of the damaged individuals. Fulfilling this responsibility relies on preparedness of hospital staff, particularly the clinicians to face the relevant challenges. Given the lack of adequate information on the topic from Iran, the present study aimed to explore the technical crisis preparedness of healthcare staff in a sample Iranian hospital.

Methods: A cross-sectional study was conducted. A sample of 265 clinicians were randomly selected from among clinicians of a hospital in Tehran (Iran capital), based on Cochran formula. Data were collected using a researcher-made inventory containing 28 multiple-choice questions related to the technical preparedness and three questions related to the attitudes of respondent towards relevant training programs. Data were summarized using descriptive statistical methods and analyzed by Mann-Whitney and Kruskal-Wallis tests.

Findings: The respondents expressed a moderate self-assessment of their technical crisis preparedness. Females, the age group of 51-60 years, work experience group of 21-30 years, married participants showed a significantly higher level of technical preparedness, compared with other respective groups ($P < .05$). The "ability to perform duties" was expressed as a major motivation to take part in crisis preparedness training programs, followed by "high probability of crisis happening." On the other hand, "lack of time" and "poor work conditions" were expressed as the major factors negatively affecting clinicians' willingness to participate in training programs.

Conclusions: Our result highlights the significance of assigning crisis management to the adequately experienced individuals. Training programs and maneuvers should be constantly held to provide clinicians the opportunity to enhance their crisis preparedness. Specific organizational arrangements are required to be made to encourage staff take the advantages of training opportunities and help them overcome the relevant barriers.

Keywords: Crisis preparedness, Clinical staff, Hospital administration, Crisis management

Background and Objectives

Iran is one of highly disaster-prone countries, due to its particular geographical location and climatic diversity. Thirty-one out of 40 types of known natural disasters have the potential to occur in Iran, placing this country in rank four among the Asian and six among the world disaster-prone countries.^{1,2} During disaster, hospitals have a crucial role in saving life and protecting health of the injured.^{3,4} At the time of crisis, hospitals may face problems such as sudden increase in the number of patients, security issues, and lack of medicines, and

high level of stress that require immediate action to allow delivery of health services. Appropriate response to critical situation relies on presence of efficient human resources with adequate crisis preparedness.⁵

The issue of preparedness of Iranian hospitals for crisis has been explored by several investigators.⁶⁻⁸ These studies however, have approached the issue from the perspective of crisis management and availability of infrastructure. However, information on the level of crisis preparedness of the hospital human resources is lacking. The present study thus aimed to help fill this gap by evaluating the technical crisis preparedness of clinicians in an Iranian hospital.

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Methods

Sample

A cross-sectional study was conducted. A sample of 265 individuals was randomly selected from among hospital clinical staff of Tehran Hospital based on Cochran formula.

Data collection

Data were collected using a researcher-made questionnaire. The technical preparedness was measured by 28 multiple-choice questions in 3 domains: clinical skills (17 items), management and leadership skills (6 items) and training and maneuver (5 items). Three additional questions were also included to evaluate the attitudes of respondent towards relevant training programs. The questionnaire was validated by adjusting its questions to the opinions of 10 experienced professors in the field of crisis who reviewed the questionnaire. The internal consistency reliability of the research tool was ensured by Cronbach's α .93 for technical preparedness and .88 for attitudes towards training programs.

Analysis

Data were summarized using descriptive statistical methods. Non-parametric tests (Mann-Whitney and Kruskal-Wallis) were used to analyze the data. All analyses were carried out by SPSS version 20 software package.

A total of 223 valid questionnaires were returned giving a response rate of 84%. Table 1 presents the demographic characteristics of the participants. Among participants, 55.2% were female, 65% were married, 47.5% had 20-30 years of age, 71.7% had less than 10 years of work experience, and 83.9% held a BS degree.

Table 2 reports the results of measurement of technical preparedness among clinical staff. As seen, females, the age group of 51-60 years, work experience group of 21-30 years, married participants have a significantly higher level of technical preparedness, compared with other respective groups.

Table 3 presents attitudes of the participants towards training programs. Of the total of 216 individuals who answered to these open questions (96% of the participants), 153 individuals (71%) stated that they were motivated to participate in training programs on crisis management and 63 individuals expressed their reluctance. The "ability to perform duties" was expressed as a major motivation to take part in crisis preparedness training programs, followed by "high probability of crisis happening." On the other hand "lack of time" and "poor working conditions" (fatigue, stress, heavy

Table 1. Demographic Characteristics of the Participants (n = 223)

Variable	No.	%
Sex		
Mal	100	44.8
Female	123	55.2
Age(years)		
20-30	106	47.5
31-40	85	38.1
41-50	26	11.7
≥ 51	6	2.7
Marital status		
Single	78	35
Married	145	65
Education		
BS	187	83.9
MS	7	3.1
PhD	29	13
Job		
Nurse	194	87
Physician	29	13
Work experience (years)		
1-10	160	71.7
11-20	47	21.1
≥ 21	16	7.2

work load) were expressed as the major factors negatively affecting clinicians' willingness to participate in training programs.

Discussion

The aim of the present study was to evaluate the average level of crisis preparedness among a sample of Iranian clinicians and explore factors contributing to such readiness. Our results confirm the findings from previous studies indicating a moderate level of crisis preparedness in Iranian hospitals.^{6,7} The male clinical staff expressed significantly higher self-assessment of their crisis-related clinical skills. In addition, the overall score of the perceived technical preparedness was significantly greater in male doctors and nurses. These data suggest that male clinicians generally have more positive perception towards their ability to employ their clinical skills during crisis. Our observation, however, contrast with those reported in the study of Al Khalailah et al in Jordan, where no correlation between gender and crisis preparedness was observed.⁹

Table 2. Results of Clinicians' Self-assessment of Technical Crisis Preparedness

Variables	Clinical Skills		Management and Leadership Skills		Training and Maneuver		Technical Preparedness	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Sex								
Male	2.28	0.58	2.79	0.55	2.30	0.55	2.72	0.51
Female	2.65	0.51	2.67	0.5	2.18	0.57	2.58	0.46
Age (years)								
20-30	2.41	0.45	2.50	0.48	2.03	0.54	2.36	0.41
31-40	2.92	0.46	2.91	0.48	2.34	0.52	2.82	0.42
41-50	3.26	0.42	3.03	0.42	2.58	0.53	3.09	0.35
≥ 51	3.29	0.45	3.16	0.57	2.66	0.20	3.15	0.36
Marital status								
Single	2.45	0.50	2.49	0.53	2.07	0.54	2.39	0.45
Married	2.88	0.52	2.87	0.48	2.32	0.56	2.78	0.46
Education level								
BS	2.72	0.53	2.75	0.52	2.22	0.57	2.64	0.48
MS	2.76	0.57	2.78	0.53	2.24	0.41	2.13	0.48
PhD	2.90	0.60	2.93	0.43	2.44	0.40	2.48	0.48
Work experience (years)								
1-10	2.54	0.48	2.16	0.49	2.11	0.53	2.48	0.43
11-20	3.16	0.43	3.05	0.49	2.45	0.58	3.01	0.39
≥ 21	3.37	0.33	3.07	0.39	2.76	0.18	3.19	0.26

Technical preparedness and all its dimensions were found to be significantly higher in individuals with higher ages and longer work experience. Similar results have also been reported from the studies of Al Khalailah et al,⁹ Duong,¹⁰ Chapman and Arbon,¹¹ and Hammad et al.¹² This finding can be justified by postulating that individuals with higher work experience not only have already developed higher levels of skills but also are more likely to have encountered crisis during their work. Combinations of these factors thus create a higher self-confidence on technical crisis preparedness in these groups. This argument is supported by the work of Hammad et al showing higher level of crisis preparedness in individuals who had already confronted crisis during their career.¹³

We also found a significantly higher level of perceived preparedness against crisis in married clinicians as compared with their single counterparts. This may be explained by the opportunities possibly provided in the married life for developing skills relevant to managing challenging situations.

Our results showed no significant difference in the perceived preparedness against crisis between edu-

cation-level groups. The same observation was also reported from the studies of Al Khalailah⁹ and Jennings-Sanders.¹⁴ This suggest that, rather than relying on the level of academic education, the emphasis must be placed on providing targeted training programs in order to empower clinicians to successfully face crisis situations.

The majority of surveyed clinicians expressed that they were motivated to participate in crisis preparation training programs. Among all motivation factors, "ability to perform duties" received the higher emphasis, confirming the impact of employees' organizational commitment on their attitude towards crisis preparedness skills development.^{15,16}

On the other hand, "lack of time" and "poor working conditions" (fatigue, heavy work load, and stress) were highlighted as the major barrier to willingness of clinicians to take part in crisis management training programs. These results highlight the role of hospital administrators in promoting crisis preparedness in human resources by providing them with appropriate training opportunities and organizational arrangements facilitating active participation of the staff in

Table 3. Attitudes of the Participant Towards Crisis Preparedness Training Programs (n = 216)

Variable	N	%
Factors contributing to positive attitudes towards training programs		
Ability to perform duties	73	47.7
High probability of crisis	47	30.7
Personal satisfaction	25	16.5
Other cases	8	5.1
Total	153	100
Factors contributing to negative attitudes towards training programs		
Lack of time	31	49
Poor work conditions (fatigue, stress, heavy workload)	22	35
Lack of benefit (job position, promotion, financial)	6	10
Poor quality of training courses	4	6
Total	63	100

such training programs.

Study Limitations

Although our results were generally consistent with relevant studies previously conducted in Iran, the limited sample size requires caution in generalization of the results.

Conclusions

Consistent with previous studies, our results indicates a moderate level of crisis preparedness of clinical staff in Iran. The crisis preparedness was found to be higher among male, married, and high-work-experience clinicians. While the majority of participants expressed positive attitude towards crisis preparedness training programs, a significant proportion of them expressed unwillingness due to "lack of time" and "poor working environment". The information obtained may be useful to designing appropriate crisis preparedness strategies. Based on our results crisis management should be undertaken by adequately experienced individuals. Training programs and maneuvers should be constantly held to provide clinicians the opportunity to enhance their crisis preparedness. Specific organizational arrangements should be made to encourage staff to take the advantages of training opportunities and overcome the relevant barriers.

Authors' Contributions

HRJ and ME jointly conceived and designed the study. MH participated in collection and analysis of the data. MR contributed to analysis and interpretation of the results and drafting the manuscript. All authors read and approved the final manuscript.

Competing Interests

The authors declare no competing interests.

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