

Knowledge Management Status in Crisis Management Regarding Eiral Model

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Abstract

Introduction: Knowledge is one of the most important assets of any organization and the importance of knowledge management in the information age is considered more than ever. Experts believe that organizational success or failures are associated with knowledge management. Both implicit and explicit knowledge management are so important in disaster management. The aim of this study is to determine the state of knowledge management in crisis management based on Earl Model.

Methods: It was a cross-sectional descriptive study that conducted on 115 persons out of 500 participants in Sixth Emergency Medicine Congress. These participants were selected randomly based on inclusion criteria. In this study, the questionnaire was designed based on Earl Knowledge management model in six categories (systemic, way mapping, processing, economical, organizational and locational). Its validity was confirmed by experts' opinions and its reliability was calculated with internal consistency (Chronbach alpha: 0.86) based on pilot study with 14 samples.

Results: Findings showed that most of the participants were women (56.6%) with average age of 31-40 years old (0.49) and with Bachelor of Science and PhD degree (mean: 0.44). Moreover total mean of knowledge management was 16.25 and in any categories was as follow: Systemic (27.67), way mapping (33.21), processing (16.56), economical (3.56), organizational (6.59) and locational (9.98).

Conclusion: Overall status of knowledge management was under average mean index and the least value belonged to economical category. It indicates that the authorities must attend in both aspects of tacit and explicit knowledge management in crisis management.

Key words: Knowledge management, Crisis management, Eiral Model

Introduction

Dawn of the 21th century, the world witnessed the huge disasters due to natural and unnatural events (1). Our country has been exposed to multiple hazards throughout its history. Memories of the earthquake in Gilan, Zanjan and Bam province; floods in Golestan province still remains in the mind. Despite the fact that disasters occur rarely in the world, it has very damaging impact on the health care system and the large number of patients are being injured. Also the effects shall be continued for a long time even after the crisis and disaster (2). In the past decade, about 88% of the total mortality was caused by natural disasters. 83% of people, who have died in the disaster, were Asian. Natural disasters have averaged an annual 87 billion dollars of damage (3).

Iran is a natural disaster-prone country and it can be one of the most vulnerable countries to disasters (4). Iran is one of the most natural disaster-prone countries in the world, in which 90% of the population are at risk from earthquakes and floods (5). The great hurricane Katrina, the tsunami in Southeast Asia, the Bam earthquake and dozens of similar incidents highlight the fact that the ways of dealing with this disaster is still insufficient, and

only a few nations of the world know who to face with such disaster (1). Obviously, any situation can be set to identify appropriate solutions in the form of a competitive plan. Therefore, some of the major and time-consuming steps of decision-making and policy making and also " knowledge management, conflict, crisis » would be saved in some way (6).

Crisis management refers to the set of actions that occurred before, during and after the accident occurred, to reduce further impacts it is done (7). A major success factor for coping with natural disasters, crisis management, is related to the rate of preparedness in disaster, so it cannot be achieved unless by accessing to the information system. So it is necessary to access not only the comprehensive information about the feasibility and limitations, but also a comprehensive and detailed analysis of the minimum benefit. Given the past history and actions in the light of future crises would be a more appropriate response and/or prevention to the future crises (8). The obtained experiences of disaster along with the reports of after the disaster present a suitable set to review and revise different parts of crisis management. In addition to the experience gained from crisis, the related items in crisis management act as review. These items include annual reports, training programs and periodic

control programs and operational procedures (9) in response to the need for the creation, storage and sharing of knowledge. Modern organizations need the knowledge management (10). In fact, knowledge management which is considered as a key tool in the new century's management is a systematic process of finding, selecting, organizing and presenting the knowledge to help the organization to achieve the necessary insight and understanding from the experiences (11). The increase of productivity and profitability, strengthen partnerships, representation of development and creativity, decrease of repetition, enhancing the organization's ability to fight inflation data, collecting and storing staff's knowledge before leaving the organization and improvement of the quality of customer's services are other advantages considered by knowledge management (12). Knowledge is a powerful source of governments, organizations and committees on the prevention, reduction and planning for disaster recovery and crisis helps. Knowledge in all phases of disaster management, including pre-disaster and also post-crisis recovery and return to normal conditions is required to prevent and plan the disaster in crisis management (13). Therefore, knowledge management can play an important role in crisis management. Particularly in the new environment, the crisis management requires certain features to adapt to changes and to fix the problems and injuries, which generally managers may face with many problems to respond them. It is one of the important features that can help leaders and managers in response to changes in knowledge management (14).

With regard to the issues of knowledge management in crisis due to the lack of sensitivity and repeatability, they are more important and should be deeply addressed. But the status of disaster information system is not correct; therefore further research was conducted to study the current situation of knowledge management in the crisis management process based on model Eral.

Methods

This is a cross-sectional, descriptive study. The study sample included all professionals and managers who participated in the Sixth International Congress on Emergency Medicine, estimated about 500 persons. In this study, sampling was determined by a simple random sampling and sample size, about 150 persons, was calculated by Morgan table. Inclusion criteria for the study included at least a bachelor's degree, at least once by participation in crisis management and to participate in the research. A total of 115 questionnaires were completed and submitted.

The instrument used in this study is a questionnaire based on Eral models in crisis management. This tool is used in a similar study by Darwish and his colleagues (13). This tool consists of six sections; the first three is named technocratic. These three sections systematic, way mapping and processing. The fourth part and the last three parts are called economical part and behavioral part respectively, including locational and organizational parts. The questioner includes 29 questions which is judged based on mean, and categorized into three parts based on Likert criteria. The reliability was measured 86% via Cronbach's α method. The reliability and validity of the questions were determined and then used in the research. In this study, the researchers attended in Razi conference hall, the venue of the 6th emergency medicine congress; then after getting the satisfaction of those who in charge of and also the participants in the congress, the research sample was selected and distributed among the participants based on the mentioned criteria, and at last gathered. The researchers were ready until the completion of the questioner and presented any explanations to the participants if required. The collected data were analyzed by using SPSS16th software and descriptive-analytical statistic tests.

Results

The findings revealed that most of the participants were women (56.6%). Most of the participants (49%) were in the age of 31 to 40. 50% of the men were in the age of 31 to 40, and 43.3% of the women were in the age under 30. Most of the participants (44%) had BA degree. 45.8% of the men had PHD degree and 52.2% of the women had BA degree. In addition, among all of those who attended in the research, most of the participants (37.4%) occupied B Sc organizational positions. 39.6% of the men were employees and 47.8% of the women were in B Sc organizational position.

Table (1) indicates the situation of knowledge management in general and also each of its sub-groups. Table (2) represents the comparison between the men and women views in each of the sub-groups of the knowledge management. There was no significant difference ($p < 0.05$) in knowledge management situation based on gender in locational ($p = 0.39$), systematic ($p = 0.80$), way mapping ($p = 0.78$), processing ($p = 0.97$), economical ($p = 0.38$) and organizational ($p = 0.93$) componential groups. Most of the mean of the knowledge management belonged to the women in locational component (33.41), and least of the mean belonged to men in economical component (3.37).

Discussion

The results indicated that there was no significant difference in the scores of knowledge management situation in disaster management based on gender, educational degree, organizational position and activities in disaster. Generally, there was only significant difference in the score of knowledge management based on age, ie. between the age of 41-50 and up to 51, in way mapping group ($p=0.021$, in locational group ($p=0.032$) and in grand total ($p=0.043$).

According to the obtained data, the general status of knowledge management in catastrophes and events was estimated lesser than the mean index. While the most considerable factor of success in facing with natural catastrophes is disaster management, preparedness scale for the catastrophes` and disaster`s occurrence, so this cannot be achieved unless by accessing to the information system. Hence, it is not only necessary to access the comprehensive information about the facilities and limitations, but also utilize the exact and comprehensive analysis in the least time.

Considering the history and adapted actions in the past disasters would shed light on the prevention and/or more appropriate response to the upcoming disaster (8). Undoubtedly, several lessons and experiences could be acquired from the occurrence of disaster that lead to improve disaster management level; therefore it is necessary to examine and review all of the disaster management items after the disaster occurrence. Unfortunately, sometimes the surveys of the items after the disaster are ignored or completely removed (9).

Modern organizations require the knowledge management to response the people`s requirement and also save and share the knowledge obtained from disasters. The damage range would be increased several times because of incomplete information and haste in decision making (15).

The knowledge in modern organizations is rapidly changing to the main competitive advantages of organizations. Knowledge could be an appropriate opportunity to an organization to know and manage it well; however it could be considered as a threat for an organization that is not aware of or doesn't tend to know the environmental developments. As

a matter of fact, knowledge management which is considered as a key tool in the new century`s management is a systematic process of finding, selecting, organizing and presenting the knowledge to help the organization to achieve the necessary insight and understanding from their own experiences. The knowledge management by acquiring, saving and benefiting from knowledge, not only assists in solving the problem, decision making, strategic programing and active learning, but it also prevents the decadence of the mental asses, as well as increases the organization`s attention and flexibility that prepare a competing advantages for organization (16).

The increase of productivity and profitability, improvement of the co-operation, representation of development and creativity, the increase of repetition, the increase of organization`s capability in coping with information inflation phenomenon, compilation and save the staff`s knowledge before leaving the organization and improvement of the quality of giving services to the costumers are the advantages considered by knowledge management (17).

According to the above mentioned issues of the insufficiencies in knowledge management field in disaster management and also according to the fact that Iran is a natural disaster-prone country, it is necessary to have more than ever consideration in this matter to prevent the stricken threat and also to adapt appropriate and accurate decision in future probable disasters.

The findings of the research indicated that the situation of the knowledge management in events and catastrophes was not appropriate; therefore the managers and policy makers should pay more attention to achieve, preserve and manage the knowledge related to events and catastrophes.

Acknowledgement

The authors would like to express their sincere gratitude to the University of Social welfare and Rehabilitation Sciences because of its morally and financially support; and also warmly thank those who participated in this study.

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Table (1): The mean score of the participants` knowledge management situation in 6th emergency medical congress in 2012 and in every knowledge management sub-groups

Statistical indexes Component	mean	Standard deviation
Locational	9.98	2.71
Systematic	27.67	6.77
Way mapping	33.21	7.79
Proceeding	16.65	4.24
Economical	3.56	0.98
Organizational	6.59	1.75
Total knowledge Management	16.25	4.04

Table (2): mean score of the participants` knowledge management situation in 6th emergency congress in each sub-group based on age in 2012

Statistical indexes Component		The most	mean	Standard deviation	T-independent two-sample	
					statistic	P-Value
Locational	female	15	9.77	2.44	-0.85	0.39
	male	15	10.20	2.98		
Systemic	female	40	27.83	6.53	0.24	0.80
	Male	40	27.52	7.01		
Way mapping	female	50	33.41	7.31	0.27	0.78
	male	50	33.02	8.27		
Processing	female	25	16.67	3.97	0.30	0.97
	male	25	16.64	4.52		
Economical	female	5	3.53	0.94	0.87	0.38
	male	5	3.37	1.02		
Organizational	female	10	6.61	1.74	0.08	0.93
	male	10	6.58	1.76		
Grand total	female	48	97.85	20.64	0.12	0.9
	male	48	97.35	23.27		