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Abilities and limitations of crisis management in Shohadaye Ashayer and Social Security hospitals of Khorramabad in 2007

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Abstract

Aims. Proper respond to unexpected disasters needs readiness of equipments and appropriate planning. In each hospital, abilities and limitations should be recognized in order to obtain more readiness to overcome unexpected disasters by augmentation of weak points. This study was done in order to detect abilities and limitations in social security educational hospital of Khorramabad in crisis management.

Methods. This study is a cross-sectional, descriptive study. Research statistical population included managers, nursing directors and also masters of crisis committee of hospitals. These were totally 21 people. Data collection was performed with questionnaire, direct observation of documents and completion of check lists. Descriptive analysis was performed with frequency, percentile of frequency, mean, and standard deviation by SPSS 11.5 software.

Results. An executive program did not exist or performed correctly; and there were major problems in non-structural aspect. From structural aspect, most of statistical society members (55.6%) believed that hospitals didn't have enough stability during outbreak of an earthquake.

Conclusion. Reevaluation of available hospital buildings is suggested in order to decrease structural and non-structural vulnerability and to plan an executive program to ensure continuous care giving in crisis conditions.

Keywords: Hospital, Ability, Limitation, Crisis Management

Introduction

Human society has encountered all kinds of natural disasters throughout history [1], so that annually 200 million people are involved in these unexpected events and meanwhile, hundreds of them die. Disaster-prone countries averagely lose 3% of their gross domestic product (GDP) [2]. In the meantime, earthquake is one of the common events all over the world [3]. Iran is among the first 10 disaster-prone countries of the world, and earthquake is cause of the most human causalities. Breaking the political, economical and professional limits, these catastrophes lead to fundamental crises in various parts of country [4]. Health and treatment unit, due to the nature of its activities and its role in treating and rehabilitating of injured people and control of health status of society, is one of the strategic and sensitive parts and its centers, especially hospitals, should have full time and nonstop activities and services at the time of disaster. This is possible when relevant centers have obtained proper readiness before events and can control the crisis with full power and ability. Studies have shown that the first step in preparedness program of health treatment centers is the estimation of vulnerability rate of centers against unexpected events [5, 6, 7]. Meanwhile, hospitals as fixed and specialized centers of health services by having specialist personnel and equipments are considered as one of important factors of responding to unexpected events in planning, structural and nonstructural respects, which have the goal of preserving the life and health of injured people. Definitely, all of these depend on having the necessary preparedness for delivering services in crisis condition [6, 7].

Hospital preparedness is a multidimensional word which includes medical limitations and the other related issues. Along with recognizing the risks, directors of health and treatment institutions should raise the power and standards and reduce the risk of unexpected disasters [8]. Hospitals have the duty of returning life and health and relieving the injured people's pains. In public culture it is highly expected that the hospital design has the ability of resisting any crisis [9]. Health in hospital system is defined as preparedness in different situations for delivering services. Regarding the crucial role of hospitals in treatment, care and reducing the individuals' injuries, it is necessary for a hospital to be equipped and strengthened with safety management and occupational health standards [9, 10]. Reinforcement of building is among the main causes of accident risk reduction, but yet there are easy and cheap solutions which can reduce the structural, non-structural and administrative damages. From non-structural standpoint, hospital directors should gain the

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necessary information about crisis management and gather data for comprehensive and perfect planning, and while identifying probable weak points, take necessary and appropriate actions (required specialist personnel, crisis committee formation and identification of safe places in hospital, developing safety instructions for confronting events, personnel training and knowing the hospital building's security rate in order to use at the time of unexpected events) for its modification. In order to prepare the hospital for proper operation at the time of unexpected events, the possibility of immediate increase in admission capacity and accelerating the treatment process should be provided first and finally enhance the level of hospital admission potency by changing the treatment units' duties and immediately concentrate on patients' treatment [5, 10].

Therefore, all hospitals should have comprehensive and standard programs for encountering unexpected events, but unfortunately little attention is paid to this strategic program, investigating and revising it along with considering hospital needs for delivering proper services [11, 12]. Since the hospital conditions are changed completely at the time of crisis emergence [13, 14], adaptation of hospital with new conditions should be done on the basis of anticipated plans and every one ought to obtain the necessary readiness regarding his or her responsibility [15]. So, existence of a crisis confronting program can considerably helps in reducing the complications of unexpected events, systematic and planned confrontation with them and appropriate and efficient use of existing resources. In line with these issues, present study was conducted with the purpose of determining the abilities and limitations of social security hospital of Khorramabad, in crisis management in 2007.

Methods

This research is a descriptive, cross-sectional and observational study. The research location was educational hospitals of social security and Shohadaye Ashayer of Khorramabad. Research Statistical population included all matrons of various wards of both studied hospitals. There were totally 24 participants in this study. Data collection was done through an observational checklist of wards and equipments, a questionnaire and direct observation of documents. Observational checklist was completed by direct observation and examining the available documents in studied wards.

The questionnaire contained two parts; first part consisted of demographic information and the second part consisted of main questions (19 questions) which were completed in one stage and with interview method. Reliability and validity of the questionnaire were obtained by content and test-retest validity, so that the questionnaire was developed after investigating and probing the scientific and specialty resources. Then the questionnaire was delivered to 5 members of scientific committee of Lorestan medical sciences university and their revision comments were applied in questionnaire. In order to determine the validity of questionnaire test-retest reliability method was used by distributing 10 questionnaires among matrons with a one week time interval and then the validity of questions were evaluated and their reliability was confirmed with correlation coefficient of r=87%. Data were analyzed using SPSS software in by descriptive statistics (absolute and relative frequency, mean, standard deviation).

Results

The average age of studied subjects was 36.3 and the majority was female with the average 5.9 years of matron ship. The lowest job experience of participants was 6 years and the highest was 24 years. 66.7% of the research subjects worked in Shohadaye Ashayer hospital and their education was 88.9% nursing BS.

Table 1 shows the relative frequency distribution of matrons' answering to main questions. These questions were designed in various axes and complete results are shown in table 2. In the field of necessity of existence and operation of crisis committee, the results showed that 100% agreed with existence of crisis committees in hospitals and believed that determining a proper place equipped with necessary facilities for committee is necessary. But only 66.7% of matrons were committee members. 87.5% of subjects reported that approved instructions of the crisis committee were sent to their wards. 87.5% of subjects mentioned that there was the possibility of adding maximum 4 beds in the wards under their supervision.

In observational study of crisis committees' documents, the place of 9 adding beds was anticipated, which did not match with adding extra beds in crisis condition and showed that involved people didn't have enough information about the place of additional beds.

Table 1- Relative frequency distribution of matrons answering to main question

Row	Questions title	Yes		No	
1	Participation training courses of confronting crisis	14	58.3	10	41.7
2	Participation crisis occurrence maneuvers	14	58.3	10	46.7
3	Awareness of organizational responsibility at the time of crisis	16	66.7	8	33.3
4	Existence of developed instructions in the field of crisis	10	41.6	14	54.2
5	Sending resolutions and instructions of the committee to wards	20	83.3	4	16.7
6	The necessity of crisis committee existence in hospital	24	100	0	0
7	Membership of crisis committee	16	66.7	8	33.3
8	Awareness all secure areas' features within buildings	1	4.2	23	95.8
9	Awareness of communicating method in times of crisis	8	33.3	16	66.7
10	Awareness of the necessity of locking the wheels of wheeled devices	19	79.2	5	20.8
11	Awareness of the need of fixing the installed equipment on the wall	21	87.5	3	12.5
12	Awareness of the necessity of using of window shield	17	70.8	7	29.2
13	The possibility of increasing ward's capacity in times of crisis	21	87.5	3	12.5
14	Available facilities for increasing ward's capacity	21	87.5	3	12.5
15	Awareness of the time of using from emergency doors	17	70.8	7	29.2
16	Awareness of local emergency exit	9	37.5	15	62.5
17	Easy and instant access to the emergency exit	8	33.3	16	66.7
18	Familiarity with using method of fire capsule	23	95.8	1	4.2
19	Awareness of the place of fire capsule	24	100	0	0

In observational study with direct observation and examining the documents of crisis committee the following results were obtained:

- In none of two hospitals, there was a correctly planned operational program in the field of crisis (such as permanent educational programs, holding maneuvers of crisis confrontation, regular formation of crisis committee sessions, etc.).
- In 41.6% of cases, the crisis committee sessions were held according to country's crisis management instructions.
- In 33.3 of cases, cooperation, coordination and connection had been established with other active institutions of health section.
- From non-structural point of view (preparing special communication instruments in crisis, equipment arrangement way, secure places and emergency doors identification etc.) necessary predictions had been made in none of studied wards.
- By examining the hospitals' settings, it was specified that there were only two sloping surfaces in main entrance and all parts of two hospitals lacked sloping surfaces or ramps.
- For increasing the number of operation and recovery rooms in order to follow their treatments in cases of unexpected events, necessary measurements were not taken in any ward.
- From structural point of view, based on an expert's opinion (in such a way that first structural characteristics of hospital building were extracted from existing documents and knowledgeable individuals and were given to relevant expert for examining and determining the resistance), 59.3% of wards didn't have necessary strength at the time of earthquake considering building's oldness and structural resistance.
- In 37.5% of cases there was the possibility of safe and healthy use of water reservoir tank, electricity power, communication, etc at the time of crisis in hospital.
- In 62.5% of cases, approved instructions of committee were given to the personnel in form of manuals.
- The result of investigation on current location of crisis committee in hospitals showed that no special physical setting was assigned for them.
- All doors and windows of wards, lacked special shields.

Discussion

Results show that the studied hospitals have crisis committee, but only 66.7% of matrons are member of committees while 100% of managers had its membership. In this respect, Avazeh wrote: "No hospital unexpected events' program can be effective unless complete association of personnel exists and preparedness of hospitals is possible in team format and with cooperation of all key components of the hospital" [6]. About holding sessions, only in 41.6% of cases crisis committee sessions were held according to administrative instructions developing by country's crisis committee. On the other hand, establishing connections with other active institutions in health section and collaboration and coordination with them is a duty of hospitals' crisis committee which is only done in 33.3% of case.

The importance of readiness of equipments and constitutions in hospital is so high that is influential in helping and relief process and in the case of their uselessness the causality statistics increase. To some extent, this issue has been taken into consideration by

researchers in terms of communication equipments and constitutions, Electrification, etc [1, 6]. Nevertheless, lack of attention in seismic planning of equipments and constitutions in building projects has lead to fading of this issue, so that even with a glance on buildings like reconstructed hospitals, the lack of seismic stability of equipments and constitutions can be seen obviously. The incoming forces to equipments and constitutions are usually notable with regard to their mass and location and their inappropriate junctions to structure will cause numerous damages. In the above study, 87.5% of subjects stated that installed devices on the wall are completely fixed. Thus, the necessity of paying attention to this crucial issue is necessary.

In 33.35 of wards, safe and healthy use of water reservoir, electricity power, and communication etc were possible in crisis times. Basically, the first managing glance should be on managerial evaluation of substructures of which the water supply system and energy supply are the most important ones. At the time of unexpected disasters, evaluation of water supply systems, electricity and fuel depends on their flexibility and resistance. The key view in this regard is utilizing the measures of alternative systems of water, electricity and gas supply and alternative communication systems.

Shohadaye Ashayer hospital has a very old building and according to managers' assessments some new parts have been added to it irregularly since 1991 which contain metal and have medium resistance against earthquake. While social security hospital has started its work in 1993.

In none of hospitals' buildings emergency stairs were built. In both hospitals, there was not any ramp for transferring injured peoples in wards and the only ramp was built in the main entrance location. Authorities' attention to this issue and reviewing wards' buildings seems necessary. 90% of wards had one entrance and one exit door and the door of 10% of the rest were locked and a dresser or other stuffs were put behind them in a way that made it difficult or impossible to access. With this condition, patients and personnel required at least 10 minutes for leaving the ward and access open space.

Identifying the safe spaces of hospital is the first action that must be made so that at the time of disaster can be used as the command center of confronting crisis. For this purpose safe spaces were identified from structural and constructional view and then were signed so that the personnel and patients are aware of it.

All hospitals should have a comprehensive and standard program to deal with unexpected disasters. But unfortunately often enough attention is not paid to this strategic program and examining and revising it considering hospital's needs for offering appropriate services.

Continuous education and maneuvering, at least annually, can be helpful in evaluation and improving the quality of committee's programs. While in present study, only 58.3% of subjects had participated in maneuvers and training was limited to participation in crisis management workshop (in-service education and participation in the national congress of crisis in Tehran).

The above study and other studies have shown that there is no certain standard for cases of crisis management in hospitals of Iran [6, 9, 17, 18]. In subjects' point of view on important difficulties of crisis management, results suggested that lack of efficient personnel, lack of special funds, lack of facilities, lack of coordination between different units and lack of hospital security are among the significant problems in crisis management. Ziad in the research titled "the welfare and safety of hospital personnel; responsibility of hospital director" in 2005 in Saudi Arabia concluded that hospital director should have appropriate safety programs for patients and personnel [19]. Each hospital should develop the essential items in its personnel's safety and occupational programs [9, 20]. Therefore developing safety programs comprehensively with clear goals and certain safety policies is necessary. Also, some measures for increasing the structural strength and improving the organization, developing regulations and providing facilities by managers are crucial.

Conclusion

Considering the results of present study, the need to revision in existing hospital buildings with structural and nonstructural vulnerability reduction approach, and designing a pre-developed operational program are recommended in order to prevent financial and life risks and at the same time guarantee the continuous services of hospital in crisis conditions. Also holding readiness maneuvers, personnel training, connecting relevant organizations, and specifying safe places is recommended.

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References

1- Avazeh, A., Jafari, N. Investigating the capabilities and limitations of Training Hospitals of Zanjan University of Medical Sciences in crisis management. Zanjan University of Medical Sciences; summaries of articles of the National Conference on promotion strategies of crisis management in hospitals,29-30, August 2006; 1.

2- Green GB, Modi S, Lumney K, Thomas T. Generic evaluation methods for disaster drills in developing countries. Ann Emerg Med. 2003; 334 (7) :438-44.

3- Peek-Asa C, Ramirez M, Seligson H, Shoaf K. Structural and individual factors associated with earthquake related injury. In j Prev. 2003; 9 (1) :62-6.

4- Wenhtbary K, Nikam B. Harnessing information and technology for disaster management. [1997 Nov; cited 2006 Jul 20]. Available from: http://www.westerndisastercenter.org/DOCUMENTS/DITF_Report.pdf.

5- Sajjadi H.,Sadeqgoli M. vulnerability evaluation of the health-treatment facilities against unexpected disasters. Zanjan University of Medical Sciences; summaries of articles of the National Conference on promotion strategies of crisis management in hospitals,29-30, August 2006; 72.

6- Zaboli R., Tofiqi sh., Amerioun A., Moqadasi H. Evaluation of Tehran hospitals' preparedness in facing with unexpected disasters. Military medicine. Summer 2006;8(2) ;11-103

7- Khoshnam kh. Deal with unexpected accidents and events in the hospitals. Zanjan University of Medical Sciences; summaries of articles of the National Conference on promotion strategies of crisis management in hospitals,29-30, August 2006;. 61.

8- Krajewski MJ, Sztajainkrycer M, Baez AA. Hospital disaster preparedness in the United States: New issues, New challenges. J Resc Disas Medicine. 2005; 4 (2) :22-5.

9- Zaboli R., Tofiqi sh., Delavar A., Mirhashemi S.investigating the safety management in Baqiyatallah (aj) hospital in 2005. Military medicine. Summer 2006; 9(2); 11-103.

10- Jagminas L, Bubly G. The hospital emergency incident command system; Are you ready?. Med Health. 2003; 86 (7) :193-5.

11- Royal S, Smeaton L, Avery A, Hurwitz B. Interventions in primary care to reduce medication related adverse events and hospital admissions: Systemic review and meta-analysis. Qual Safety Health Care. 2006; 15:23-31.

12- Rubin JN. Recurring pitfalls in hospital preparedness and respone. [2004 Jan; Cited 2006 Jul 20]. Avaliable from: http://www.homelandsecurity.or

13- Barbara JA, Macintyre AG, Baebard J, Mclntire A. Hospital: Emergency preparedness and response. 1st ed. Jane's Information Group; 2003.

14- Eitzen EM. Education is the key to defense against bioterrorism. Ann Emerg Med. 1999;34(2):221-3.

15- Sedighi Arfaee V. Preparedness of hospitalsin facing with events. Zanjan University of Medical Sciences; summaries of articles of the National Conference on promotion strategies of crisis management in hospitals,29-30, August 2006. 76-75.

16- United States Ward of Health & Human Services 17 critical benchmarks for bioterrorism planning. [2002 Jun 6; Cited 2006 Jul 20]. Available from: http://www.hhs.gov/news/press/2002pres/20020606a.html.

17- Okumura T, Suzuki K, Fukuda A, Kohoma A, Takasu N, Ishimatus S, et al. The Tokyo subway sarin attack: Disaster management, part 2: Hospital response. Acad Emerg Med. 1998;5(6):618-24.

18- Geller RJ, Lopez GP, Cutler S, Lin D, Bachman GF, Gorman SE. Atropine availability as an antidote for never agent causalities: Validated rapid reformation of high-concentration atropine from bulk powder. Ann Emerg Med. 2003;41(4):453-6.

19- Ziad A. Healthcare worker safety and welfare: Responsibility of the hospital administration. Int J Antimicrobial Agents 26S. 2005;S1–S6J.

20- Blegen MA, Vaughn TE, Goode CJ. Nurse experince and education: Effect on quality of care. J Nurs Admin. 2001;31(1):33-9.