

**Research Article**

## **Investigating Preparedness of Kohgiluyeh and Boyerahmad Hospitals to Deal with Unexpected Events in 2015**

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### **ABSTRACT**

**Introduction:** Our world is affected by natural and abnormal disasters daily that occurrence of marks their destructive, is due to decrease force communities in supply the health needs. Our country because of the vastness and climatic conditions is considering 10 most disaster-prone countries in world. Provision of health care services by hospitals in critical condition is very important, Therefore, is essential be measured level of readiness hospitals in emergency situations and ensure proper performance in these conditions. According to these issues as mentioned in this study, to title investigation level of readiness hospitals in the province in the face of unexpected events at selected hospitals Kohgiluyeh&Boyerahmad province was conducted.

**Materials & Methods:** This study is descriptive- cross sectional that has been done on three large hospitals of the province (martyr (Shahid) Beheshti Yasouj - Imam Khomeini in Dehdasht - martyr Rajai Gachsaran). Data gathering tool is check list two-part that in the first part evaluated demographic characteristics in the form of 12 questions and the second part to investigate the emergency section, admission, transfer and discharge, traffic, communications, security, education, support, staffing and command and management. Information after collecting became into SPSS version 21 software and was analyzed by using descriptive statistical tests.

**Findings:** Obtained results indicate level of readiness studied hospitals in martyr Beheshti Hospital was higher than other hospitals and in between departments investigated, emergency departments are better readiness.

**Conclusion:** Obtained results indicate that the overall level of readiness martyr Rajai Hospital Gachsaran has located weak level of readiness to cope with crisis (from 40% readiness). Martyr Beheshti Hospital of Yasouj with 51.4 percent and Dehdasht Imam Khomeini Hospital with 43 percent were evaluated medium level readiness to cope with crisis.

**Keywords:** Hospital, Readiness, Disaster, Unexpected events

### **INTRODUCTION**

Historical evolution of human life on earth and the frequency of accidents and disasters suggests as in the past the possibility of disaster is inevitable that often (Khankeh, 2012) and the occurrence of disasters and disaster devastating effects that leave, mainly reduces the ability of a community

to meet health needs (Chapman and Arbon, 2008). According to the International Red Cross disaster statistics average and natural disasters around the world in the period 1994 - 1998 was the year 428 AD if it is between 1999 - 2003. This statistic is expressed in approximately 707 cases per year

(Ghahri, 2004). Disaster-prone country is one of the most prone to accidents and disasters the world (Khankeh, 2012). Based on studies of the incidence of natural disasters in Asia's was fourth place and sixth place in the world (Farajzadeh et al., 2006). Therefore, you should prioritize the issue of disaster management and disaster and it is obvious that in the meantime the health sector and especially hospitals as one of the units involved in the events, placed at the head of affairs (Khankeh, 2012). Due to the nature of its activities in the health sector and its role in the treatment and rehabilitation of injuries and health status of the community, of sensitive and strategic sectors and it must be affiliated centers, especially hospitals, boarding and without interruption at the time of the events, activities and their services. This time it is possible that the centers had prepared before disaster and serve with all the force and power in critical situations (Malekshahi and Mardani, 2009). Hospital preparedness, a term multidimensional and as a result increase the ability of hospitals to serve in times of disaster and reduce medical restrictions in the absence of consequences and irreparable damages that will be followed by preparation (Zaboli et al., 2006). Hospital as a provider of health services in times of crisis should be capable of maintaining structure (physical, administrative, equipment, labor, etc.) Moreover, maintain processes and providing optimal performance (Ravangard et al., 2009). Health service delivery systems including hospitals, a symbol of social progress and a prerequisite for progress and stability of any country considered (Ardalan et al., 2014). Given the rise of Iran and Bella because health is first and foremost demand of the people in any event, therefore, the health sector in general and hospitals in particular the ongoing analysis of risks and the vulnerability of the ill prepared to respond appropriately and effectively to enforce events. Kohgiluyeh and Boyerahmad is due to specific geographical situation and the lack of some resources in the event of accidents are prone to high vulnerability since that provide optimal

health services is a major cause of accidents is human survival. Since one of the conditions achieve the optimal situation awareness of the current situation and available and the researchers of this study assess preparedness of hospitals Kohgiluyeh and Boyerahmad in the face of unusual events reviewed and provided. The results to stakeholders such as crisis management and healthcare managers in the field of provincial and national levels, for the operation and establishment of proper preparation and effective response in the event of disaster were provided. The aim of this study was to determine the status of preparedness of hospitals Kohgiluyeh and Boyerahmad in 2015 is faced with unexpected events.

#### **Hospital preparedness in disaster and crisis management in the hospital**

As mentioned before in the history of human beings, always prone to accidents and natural surroundings that are different in their environment. Disasters today than in the past concerns have created a much larger human community. The possibility of unexpected events that may many people are exposed to increased and also people are more likely to live in high-risk conditions have the potential. According to a 2008 report from the World Health Organization, in recent years has been enormous impact on the international community disaster because the annual average of about 500 natural disasters recorded worldwide. Which leads to damage of about 80 million injuries 74000 deaths and 50000 displacements of people from their homes is 5 million. Iran is a country very vulnerable, disaster-prone country in the world to natural disasters, accidents and the time of disasters approximately 40 known species, 31 of which are located in Iran, accordingly, Iran is among the 10 countries of the world, and 90% of the population exposed to the risks of earthquakes and floods are widespread. In other words, Iran is the fourth country in Asia and the sixth in the world in terms of natural disasters and Iran's vulnerability to an earthquake in 1000

against America and Japan is 100 times (Khankeh2013). According to 2008 World Health Organization in the past 100 years about 181 big accident happened in Iran that killed 160 people, injured more than 170 thousand people and injured more than 44 million people. Earthquake, flood and drought, many of the events in Iran and in addition to this, Iran is among the 10 countries worldwide with approximately one million refugees. About 93 percent of Iran to earthquakes despite the fact that the country is dry and areas exposed to flooding is 50% in the past 10 years as a result of accidents in Iran each year on average, 4,000 people were killed and 55 thousand people were affected. Therefore, the necessity of considering the Disaster Management in our country is no secret (MirzaeeZamani2013). Disaster has a low probability, high impact are the two features. Despite multiple definitions in the meantime, inform the situations are unexpected events that a large number of victims and injured to take advantage of the health and medical facilities are to the hospital. In the meantime prepare and private hospitals are one of the conditions of life (Zabuli2011).

Health services in the event of survival of human beings. Disaster is always a significant impact on public health and welfare of damaged leaves in previous years it was thought that the health sector is limited to the period after the event. However, given that governmental and nongovernmental organizations involved in health care at a later stage of the event were numerous inconsistencies, so work to prepare before the disaster in the health sector was raised to provide better health services (Khankeh2013).

Due to the nature of its activities in the health sector and its role in the treatment and rehabilitation of injuries and control of sensitive and strategic sectors of the community's health status and centers in this sector are especially hospitals.

It should be around the clock and without interruption at the time of the events and activities, they have to provide their service (Ali

Masoudi et al., 2011). It is clear that in the event of disaster; the situation is completely changed working in hospitals. Therefore, the correct assessment of the possible events for the hospitals can be prepared to deal with disasters in times of crisis. They have the best performance given the key role of hospitals in the treatment and care of victims and harm reduction, hospitals should be encouraged in the event of an unexpected event maintain their readiness deal with a crisis situation. Because hospitals during disasters as a critical part of the health care system act (Khankeh2013)

#### **A review of studies**

Hojat et al study in 2006 entitled "Evaluation of disaster preparedness in hospitals, medical universities of Tehran" have done, this study is a cross - sectional study on 13 general hospitals - School Affiliated to Tehran University of Medical Sciences (ShahidBeheshti, Iran, and Tehran) more than 100 beds. Methods of data collection checklist and observational different fields including admission, transfer, discharge list, traffic, communication, human resources, management, security, education and support that explores. The results indicate that the preparedness of hospitals in terms of acceptance, transfer and discharge as weak, in terms of emergency, traffic, communication, human resources and management at medium and in terms of security, training and support has been good (Hojat, 2010).

Readiness training centers, Kermanshah University of Medical Sciences in 1387 also studied results of the study have shown that poor preparation (Ojaghi, 2009). Amiri et al in universities in the north of Iran in the face of disaster preparedness of hospitals as average and the need for disaster planning, training, retrofitting hospitals and training maneuvers emphasized (Amiri et al., 2011). Vali et al who study to assess the preparedness of hospitals in Tabriz University of Medical Sciences has been done to deal with unexpected events, medium has announced the

readiness of hospitals (Vali, 2014). In a study in 2011 by Ghafari et al to evaluate the readiness of Social Welfare and Rehabilitation Sciences University hospitals have been made, the results show the average hospital prepared to deal with unexpected events (Ghafari, 2011). In total, according to the results of the studies can be said about the state of readiness of hospitals in the country had an average and given the importance of hospital performance in terms of dealing with unexpected events, comprehensive plan to run a hospital, train, equip, and also continuous monitoring is necessary. The university in northern Iran in the face of disaster preparedness of hospitals in the study was assessed as moderate, in the study by Amini et al in 2011 and in all teaching hospitals affiliated to University of Medical Sciences Semnan, Sahrood, Mazandaran, Babol and Gilan (53 hospitals) and the census methodology. By a knowledge questionnaire, survey data managers (40 years) and checklist of 141 years were collected and then analyze the data by statistical software and using Pearson's correlation coefficient, etc. is done.

Considering the disaster in the counties studied history and Medium Preparation hospitals, educational programs for disaster, retrofitting hospitals and training maneuvers will play an important role in enhancing the preparedness of hospitals. The readiness of Kermanshah University of Medical Sciences hospitals in the study in 1387 studied and the results of the study indicate the amount of preparation is poor in these facilities (Ojaghi, 2009). Nezamzadeh et al in a study to assess preparedness to deal with unexpected events focused on one of the selected hospitals in Tehran. The lowest rated traffic unit and management unit gained the most points, but overall state of readiness of hospitals in the average level of assessment. In the study, conducted in 2011 by Ghafari et al to evaluate the readiness of Social Welfare and Rehabilitation Sciences University hospitals in the disaster took place, the results show the average hospital preparedness for disaster (Ghaffari, 2011). Check

the status of safety and disaster preparedness of hospitals in the city of Ilam in 2013 by the gift of time and Occupational Health Engineering, School of Public Health, university of Medical Sciences conducted the study was cross-sectional, state hospitals in three functional areas, mechanical and biological investigated. Finally, despite the differences in terms of functional, structural and non-structural, safety and readiness of hospitals is assessed as moderate. The preparedness of hospitals in Tabriz University of Medical Sciences in 2011 to deal with unexpected events in the study by Masoud et al evaluated the results of the study show that low and medium prepared in different parts of the hospital.

#### **Research Methodology:**

Because the present study sought to determine the status of preparedness of hospitals Kohgiluyeh and Boyerahmad is faced with unexpected events in 2015, in order to carry out this study, the research approach is descriptive is used. The study population consisted of three ShahidBeheshti hospital of Yasuj, GachsaranShahidrajaee and Imam Khomeini (RA) in Dehdasht. Data gathered by checklist in bipartite and the first part consists of 12 questions is to assess demographic characteristics. The second section has 220 questions and 10 sub-categories. In the part I, the emergency department with 30 questions, part I, the reception with 24 items, part III, drain and transfer to a hospital with 30 items, Part IV, the traffic unit with 15 questions, Part V, Unified Communications with 16 questions, Part VI, with 17 questions of security, the seventh, training units with 17 items, Part VIII, with the support of 28 items, Part IX, human resources unit IIX with 21 questions, with 22 questions will evaluate a single command and control. Yes or No for each question were considered two options that yes, score 1 and to say no, score awarded 0 and that a hospital can earn maximum points, is 220. Based on the evaluation study Hojat et al (Hojat, 2010) are as follows and the score 20-0 percent very poor, poor score 40-21 percent, 60-41 percent of

the average score, 80-61 percent is considered good and a score of 100-81 percent is very good.

**Research findings**

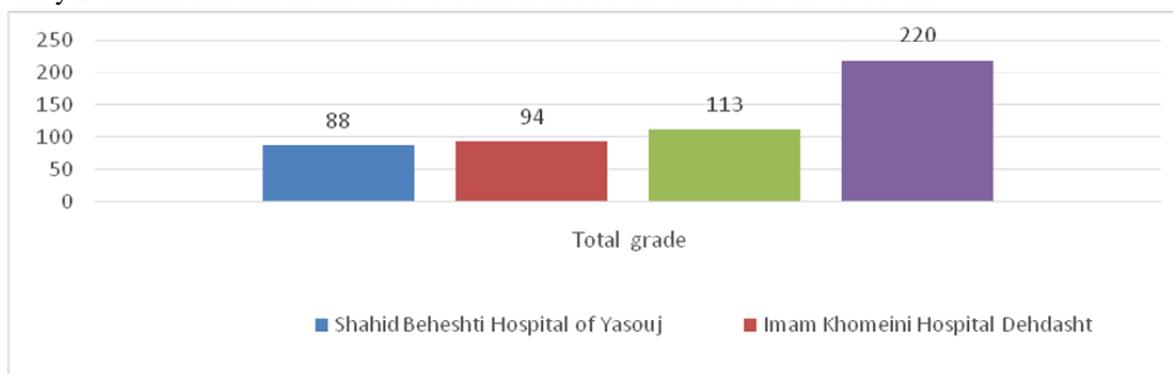
The findings of this study showed that the total score of the hospital preparedness total score of 220 as follows: ShahidRajai Hospital

Gachsaran88 of 220 Imam Khomeini Hospital Dehdasht94 of 220 ShahidBeheshti Hospital of Yasouj113 of 220 The findings for smaller and on the basis of the readiness of hospitals and hospital-based domain is presented in Table 1.

**Table 1:** score preparedness of hospitals affiliated with the University of Medical Sciences Kohgiluyeh and Boyerahmad health care in crisis areas ready by 2015

Preparedness	ShahidRajai Hospital Gachsaran	Imam Khomeini Hospital Dehdasht	ShahidBeheshti Hospital of Yasouj	Total expected grade
Emergency	15	12	17	30
Reception	5	11	11	24
Discharge	9	10	10	30
Traffic	6	6	7	15
Connections	5	6	8	16
Security	5	5	8	17
Education	10	9	10	17
Support	15	13	17	28
Manpower	10	12	12	21
Command	8	10	13	22
Total score of preparation	88	94	113	220

As Table 1 indicates the highest score in the area of hospital emergency Yasouj, in the reception area Yasouj and Dehdasht, in the domain of Yasouj and Dehdasht evacuation, traffic safety, communications and security Yasouj, Yasouj and Gachsaran in education, in health and command, support Yasouj and in the area of human resources and Dehdashtobtained.In the area of hospital emergency Dehdasht, admission, discharge, communication, human resources and command Gachsaran, and traffic safety Dehdasht and security Dehdasht and and in the area of Gachsaran education have the lowest scores.



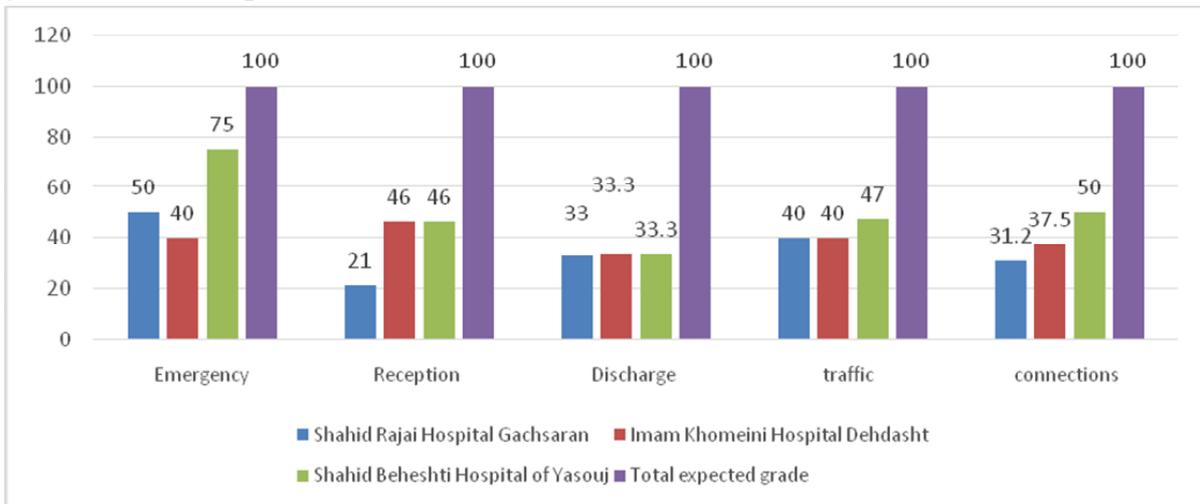
**Figure 1:** Graph comparing the total score in Gachsaran hospitals Rajai martyr, Imam Khomeini and martyr Beheshti Dehdasht Yasouj

**Table 2:** The percentage of the overall preparedness of hospitals and the medical sciences and health care services Kohgiluyeh and Boyerahmad in crisis areas ready by 2015

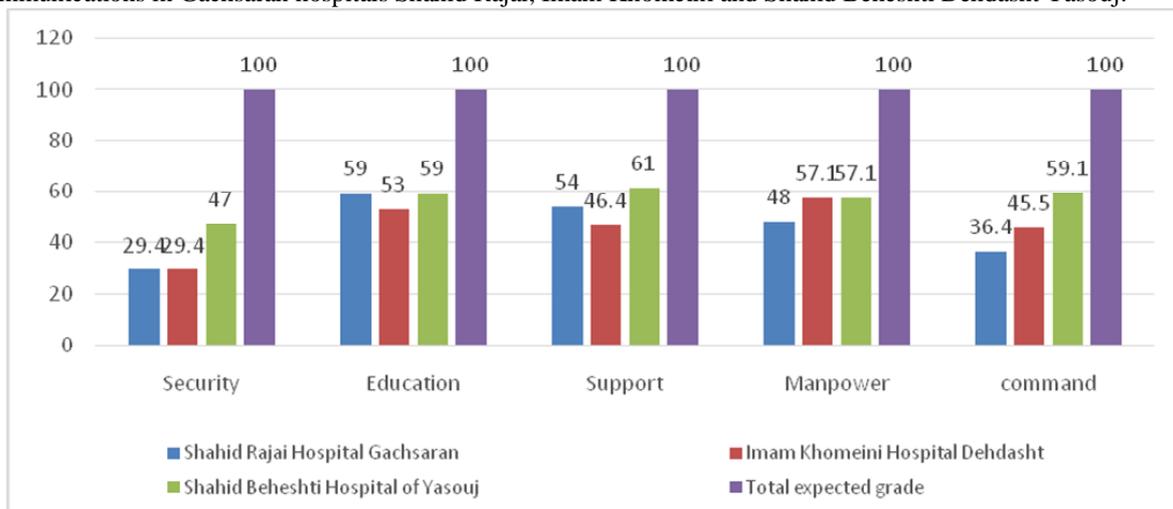
Preparedness	Percentage of the overall preparedness ShahidRajai Hospital Gachsaran	Percentage of the overall preparedness Imam Khomeini Hospital Dehdasht	Percentage of the overall preparedness ShahidBeheshti Hospital of Yasouj	Total expected grade
Emergency	50	40	57	100
Reception	21	46	46	100
Discharge	33	33.3	33.3	100
Traffic	40	40	47	100
Connections	31.2	37.5	50	100

Security	29.4	29.4	47	100
Education	59	53	59	100
Support	54	46.4	61	100
Manpower	48	57.1	57.1	100
Command	36.4	45.5	59.1	100
Total score of preparation	40	43	51.4	100

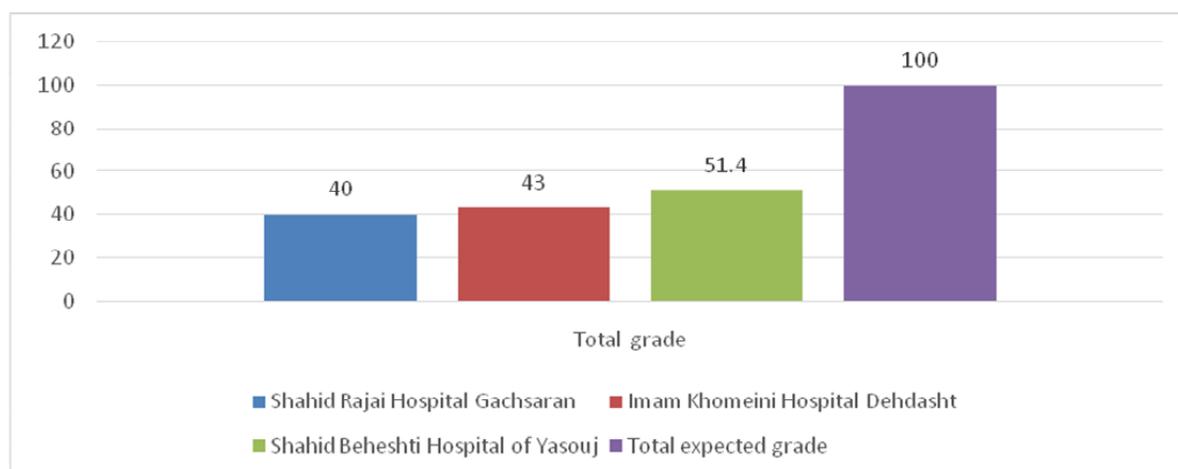
According to Table 2 in the domain of Yasouj hospitals emergency, traffic, communications, security, support and leadership has earned the highest percentage of readiness and in areas of Gachsaran hospital admission and discharge, together with the highest percentage of readiness and in the area of education with the hospital jointly Dehdasht have won the highest percentage of readiness. However, the lowest percentage of readiness in the areas of admission, discharge, communication, human resources and leadership Gachsaran hospital achieved. In the area of emergency preparedness training and support hospitals DEHDASHT lowest percentage shown in other areas of Gachsaran least prepared jointly by the Dehdasht hospital. According to the chi-square (chi-square) between the preparedness of hospitals has significant difference ( $p \leq 0.05$ ).



**Figure 2:** Graph comparing the percentage of emergency preparedness, admission, discharge, traffic and communications in Gachsaran hospitals Shahid Rajai, Imam Khomeini and Shahid Beheshti Dehdasht Yasouj.



**Figure 3:** Comparison Chart of the state of emergency preparedness, admission, discharge and traffic in Gachsaran Shahid Rajai hospitals, Imam Khomeini and Shahid Beheshti Dehdasht Yasouj



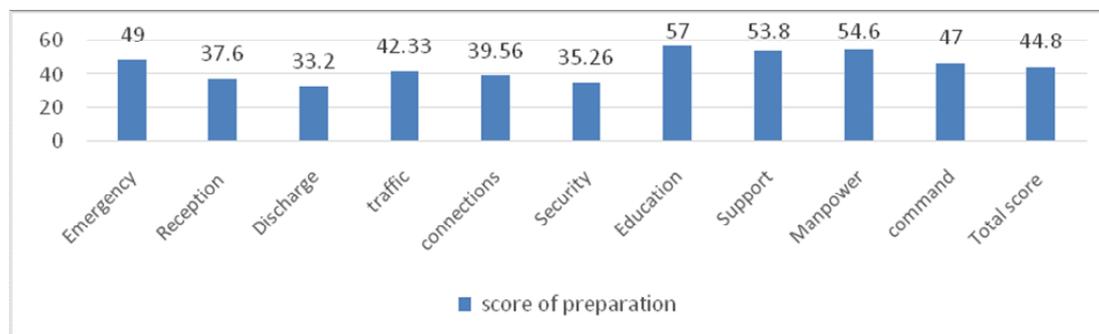
**Figure 4:** Comparison Chart readiness status of ShahidRajai traditional general hospitals, Imam Khomeini and Shahid Beheshti Dehdasht Yasouj

**Table 3:** The percentage of overall readiness and area Kohgiluyeh and Boyerahmad hospitals in crisis areas ready by 2015

Preparation	Kohgiluyeh and Boyerahmad hospitals	Preparation percent expected
Emergency	49	100
Reception	37.6	100
Discharge	33.2	100
Traffic	42.33	100
Connections	39.56	100
Security	35.26	100
Education	57	100
Support	53.8	100
Manpower	54.6	100
Command	47	100
Total score of preparation	44.8	100

According to Table 4-7Kohgiluyeh and Boyerahmad hospitals in the areas of education, support and manpower has won the highest percentage of readiness and in the areas of admission and discharge and securing the lowest percentage of preparation have obtained.

In total, the readiness of hospitals Kohgiluyeh and Boyerahmad (44.8) is not appropriate and does not have the readiness to moderate.



**Figure 5:** The percentage of overall readiness and area hospitals Kohgiluyeh and Boyerahmad in crisis areas ready by 2015 according to Table 3 hospitals Kohgiluyeh and Boyerahmad in the areas of education, support and manpower has won the highest percentage of readiness and in the areas of admission and discharge and securing the lowest

percentage of preparation have obtained. In total, the readiness of hospitals Kohgiluyeh and Boyerahmad (44.8) is not appropriate and does not have the readiness to moderate.

## CONCLUSION

In this study, a specific type of management is concerned. This study seeks to describe the readiness of hospitals, medical universities in the time of crisis has been a disaster. If research findings have shown grading is based on the readiness of Iranian researchers proposed that the study was conducted within the country, the overall preparation Shahid Rajai Hospital Gachsaran poor fitness level (from 40% readiness) to deal with the crisis. This finding of the study is consistent by Hojat et al at Tehran University of Medical Sciences hospital in 2006. The study was consistent with Ojaghiet al in 1387 in Kermanshah hospitals in disaster preparedness weak that this study. Shahid Beheshti Hospital of Yasouj with 51.4 percent and 43 percent Dehdashti Imam Khomeini Hospital Preparedness for disaster preparedness medium level was evaluated. Some carried out in Iran have confirmed the results of this part of the study. Amiriet al studied the readiness of hospitals in northern Iran crisis in 2011 have evaluated a medium scale. Ghafari et al in 2011 as well as the preparedness of hospitals affiliated with the University of Welfare and Rehabilitation Sciences in the face of disasters have as moderate. Vali et al at the Hospital of the University of Medical Sciences in 2014 have evaluated their readiness in the event of a crisis average. Given that our country ranks fourth in Asia and ranks sixth worldwide in disaster integrate, disaster 31 of 40 disasters occurred in Iran, therefore, the crisis management planning and disaster preparedness is very important. Kohgiluyeh and Boyerahmad with four seasons and features a variety of natural features constantly exposed to disasters and catastrophes of geological, climatic, environmental, biological and chemical industries are located, and in the event of a crisis, a large number of victims and wounded to reach medical care within hospitals flock. Therefore, hospital preparedness is one of

the conditions of life, and especially in these events is considered. The results show such readiness to deal with potential crises by hospitals in the province is not acceptable extent. In this study with previous studies, it can be said that overall traffic units, communications, security, emergency handling equipment defects and deficiencies in hospitals have to deal with unexpected events. The study appears in this issue, the readiness of hospitals is low due to the specific situation of disaster prone country and strategic position and other items that can be grounds for unexpected accidents and disasters and to special circumstances Kohgiluyeh and Boyerahmad both in shortages and deprivations of the old historic. As well as specific geographical conditions and especially in the field of traffic accident full province, could be an alarm bell that must be cured before they occur. Moreover, health and preventive approach, it seems that this issue requires careful and constant study and action. In most countries, including France, Turkey, America, guideline in the field of disaster has been developed and implemented, America in October 2000, Congress passed a general law that would require all States to mitigate the effects of natural disasters before the crisis plan, however, a similar law was passed in our country in 1991. And was responsible for planning to reduce the effects of the crisis, but in 2001 the government of America itemized and detailed planning guidelines for hospitals in four areas of equipment, personnel, communication and Education had issued a high fee for hospitals. Their research also showed yet another 11 billion \$ should be spent to hospitals in the country to achieve the desired level of fitness. The government and the Ministry of Health and Medical Sciences with serious entry in this field and provide financial assistance way to improve the readiness of hospitals in the face of events will be smoother.

### Suggestion

it is proposed given that the province is constantly exposed to the risk of unexpected events, staff deal with unexpected situations in University of Medical Sciences using powerful forces and experts on a six-step cycle of crisis management (Frederick 1998) plan.

- Risk analysis stage, which has three levels (the history of the crisis, risk analysis, vulnerability analysis)
- phase of disaster prevention and mitigation of malicious actions
- Preparation stage
- Forecasting and early warning stage
- Step Response
- Step Recovery

Formed rapid response teams to confront and deal with unexpected events, raising funds in the field of crisis management and pay more attention to the various units of the University of crisis management and crisis preparedness and planning special operations to deal with disasters and crises can help manage events in the health sector is subject.

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