The Importance of Health Management in Crises and Disasters

Nasser.A.Alghamdi[1], Abdullah.G.Omari[1], Khalid.A.Omari[1], Nawaf.M.Omari[2], Mohammed.A.Alghamdi[3], Bander.M.Omari[4], Ryadh.H,AlZahrani[4], Saleh.S.Alzahrani[5], Syeed.A.Omari[4], Syeed.S.Al Zahrani[5], Abdullah.A.Alghamdi[5]

Health Administration Specialist - Al-Makhwa General Hospital[1]
Social service - Al-Makhwa General Hospital[2]
Medical Secretary Technician - Al-Makhwa General Hospital[3]
Health Security Technician - Al-Makhwa General Hospital[4]
Health Administration Specialist - Al-Makhwa General Hospital[5]

Abstracts

Saudi Arabia has experienced a number of disasters and calamities in the form of overcrowding, terrorist attacks and many of the natural disasters. The most drastic calamity in the country was fold as because the drainage system is not so planned and structured. Many had lost their lives and thousands have lost their homes and property. The present need is to install a comprehensive drainage system and save the same in future. This present study will evaluate the scenario in the present times and throw some light on the future preparation as well. The study is based on secondary data and some of the primary data was collected in the form of interview responses from government official and senior citizens of the country.

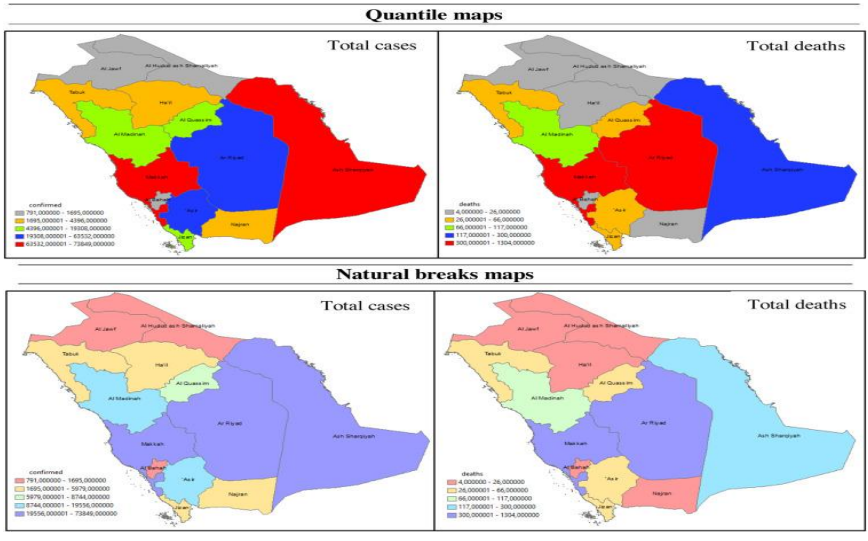
Keywords: Disaster Management, Healthcare system, Saudi Arabia, Crisis.

1. Introduction

Man-made natural disasters are a global problem that can kill, displace and injure people by affecting food, water and electricity; The United Nations International Strategy for Disaster Reduction (UNISDR) and the World Health Organization (WHO) define the word "disaster" as "the intervention dimension of the operation" that causes "human damage". "A disaster also refers to any spatial or geographical situation in which external stress affects human populations, thus demonstrating local uncontrollability Dar et al (2019). It cannot be said that it harms human and community health (including brain cleansing) until the economic effects are indirect health effects such as health, and the effects often lead to developmental impairment, health loss and health problems Zahan et al (2017). Many studies have shown that damage is detrimental to health; however, preventing or reducing health effects is difficult from the perspective of disaster prevention, planning and health management.

Saudi Arabia has experienced many health disasters due to overcrowding, attacks, and natural disasters Abo Suliman et al (2016), Kumar, and Alam). Due to the lack of integration in the country, natural disasters such as floods occur in Saudi Arabia Abosuliman et al (2018). Not only are families displaced by floods, they also suffer from health problems caused by waterborne diseases that floodwaters carry into the streets and from there into homes. Their health, especially the health of members of the population such as children and the elderly, can be adversely affected. Between 2000 and 2011, 7 of the 11 worst natural disasters in Saudi Arabia's history were caused by floods. Floods pose a long-term threat to Saudi Arabia for several reasons. Saudi Arabia is located in a desert region where rainfall is rare. As a result, the country's water supply is poor and cannot cope with floods. In addition, cities such as Jeddah and Mecca are located in low-lying areas and surrounded by mountains. When rain falls on the mountains, the water flows into the valley and eventually into these cities. Due to poor water quality, the constant flow of water often leads to rapid flooding. Therefore, floods are considered a major disaster in Saudi Arabia because they affect the normal life of the population, commercial institutions and government institutions cannot function due to the abundance of water. Therefore, floods often cause personal, economic and national losses. Qahtani). These risks include oil spills and leaks, gasoline accidents, fires and explosions. When any of these risks occur, there are always health consequences. For example, oil leaks into water or gas leaks into the air,

which can affect nearby communities. It has increased in recent years. For example, Saudi Arabia is more affected by storms due to climate change. This means that people will face not only health risks but also more serious risks. Saudi Arabia celebrates the Hajj, an Islamic holiday in which Muslims from all over the world make the pilgrimage to the Masjid al-Haram in Mecca; held for five days (or Qasim).



Source: Jaziri et al (2021)

Figure 1: Crisis Management in the time of COVID-19

All adult Muslims who are physically and financially able are required to perform the Hajj at least once in their lifetime. During the Hajj season, the population of Mecca swells from 200,000 to over 3 million (Alshehri et al.). trampling, food and water shortages, and poor health care are associated with epidemics and other public health problems. The history of the Hajj was marked by a disaster that left many dead and injured. For example, in 1990, 1,426 people were crushed while traveling to Mecca for an overcrowded pilgrimage Alshehri et al (2018). In 2006, 346 people died while crossing the Meena Jamarat Bridge, and hundreds more died in a tent fire. In light of these disasters in Saudi Arabia, the facts needed to evaluate the country's disaster management plan and system are not being explained.

This present study will make an attempt to evaluate the preparedness of healthcare services during the cases of disaster and crisis. The findings of the study will be beneficial for the people engaged in the system of healthcare and other related services.

2. Literature Review:

Momani et al (2020) Saudi Arabia has experienced a number of disasters and calamities in the form of overcrowding, terrorist attacks and many of the natural disasters. The most drastic calamity in the country was fold as because the drainage system is not so planned and structured. Many had lost their lives and thousands have lost their homes and property. The present need is to install a comprehensive drainage system and save the same in future. At that time a number of healthcare workers have devotionally took the matter in their hands and saved the day to a great extent, although the response time and flow of service can be increased in future.

Alsheri et al (2019) The Hajj is associated with increased disaster risk, including long journeys, food and water shortages, and poor health care, which are linked to the spread of diseases and other public health problems. The history of the Hajj has been marked by disasters that have left many dead and injured. For example, in 1990, 1,426 people were crushed while traveling to Mecca in an overcrowded pilgrimage. In 2006, 346 people died while crossing the Meena Jamarat Bridge, and hundreds more died in a tent fire. In light of the disasters experienced in Saudi Arabia, it is not clear that the country's disaster health plan and system need to be evaluated.

Samad et al (2018) Another major disaster (i.e. health hazard) occurred in Saudi Arabia during the Hajj, the Islamic ritual in which Muslims from all over the world make a pilgrimage to the Masjid al-Haram in Mecca; it lasts five days in the Islamic calendar (i.e. October or November of the Gregorian calendar). All adult Muslims who are physically and financially able are required to perform the Hajj at least once in their lives. During the Hajj season, the population of Mecca swells from 200,000 people to over 3 million.

Zahan et al (2019) The direct effects of disasters can include death, injury, disability and illness; indirect health effects can include damage to infrastructure, health and services. In addition to these effects, the negative economic impact of disasters often leads to the disruption of social development and loss of health and well-being. Many studies have confirmed that disasters can

be harmful to health, but preventing or reducing their health effects is difficult to do without clean damage prevention, planning and health management.

Objective of the study:

The main objective of the study is to evaluate the preparedness of healthcare services during the cases of disaster and crisis. Some of the major previous disasters were included in the study and tried to develop a rationale for the same.

3. Research Process:

- The researcher has mainly included the some of the previous disasters occurred in the past and tried to present a comparative evaluation of loss and initiative of healthcare services.

- Some of the previous studies have also been included to present the response system of associated agencies during the time of disaster of crisis.

- The time period of the comparison or evaluation is taken as 10 years i.e. 2010- 2020 to keep the track of present state and previous associations.

- The study is majorly based on secondary data and some primary data is taken in the form of interviews from govt. officials and some senior citizens.

Healthcare System of Saudi Arabia:

The World Health Organization (2000) World Health Report ranked Saudi Arabia's health status 26th out of 190 countries. It is worth noting that Saudi Arabia is a welfare state and the Saudi Constitution clearly states that the government must provide free medical services to all citizens. Therefore, in line with the government's goal of "health for all", all Saudis are entitled to free health services from public hospitals. However, there are also some private clinics that charge special fees for their services. These public and private health facilities are under the supervision of the Ministry of Health, which is responsible for the management of Saudi Arabia's health system. Its organization and management structure—which includes strategic planning, development of specific health policies, monitoring of all health services, and monitoring and control of all other health-related activities. The Ministry of Health provides approximately 59.5% of free healthcare services in the Kingdom through health centers (Albejaidi). However, approximately 19.3% of medical services are provided free of charge by other government institutions, while the remaining 20% is provided by the rapidly growing civil society sector.

Table 1: List of some acute disaster in Saudi Arabia

Year	Type of disaster	Death	Injured
1941	Kabaa flash flood	N.A.	N.A.
1964	Flash Flood	20	1000
1975	Fire during Hajj	200	N.A.
1979	Occupation of Mosque in Makkah	250	600
1985	Floods in Northwest of Kingdom	32	5000
1990	Pilgrims Stampede inside tunnel	1426	N.A.

1994	Pilgrims Stampede inside tunnel	270	N.A.
1997	Yanbu and Asir floods	26	N.A.
1977	Fire during Hajj	343	1555
2000/01	Epidemic	179	1700
2002	Makkah floods	31	N.A.
2005	Medina floods	29	43
2009	Jeddah floods	163	11640
2011	Jeddah floods	10	5000

Source: Alraga (2017)

Health services are provided by a network of 2,037 health centers and 244 hospitals in major cities and towns. Other government institutions that also provide healthcare services include the Ministry of Defense and Aviation (MODA), the Ministry of Education (MOE), the Saudi Arabian National Guard (SANG), the Ministry of Interior (MOI) and the Red Crescent Society. All of these institutions are independent of the Ministry of Health and have their own medical budgets. Primary, secondary and tertiary healthcare centers provide healthcare services to employees and their families.

In addition to private hospitals, medical centers have also been established to provide services to employees and their families of different organizations. So generally speaking, these services are not provided to members of neighboring communities, and if these communities do not have health services, it is the responsibility of the Ministry of Health to provide these services. The structure of the Saudi Arabian healthcare system is open to timely access to medical services, guidance on participation in health insurance programs, privatization of public hospitals, use of e-health strategies, and development of national health information systems.

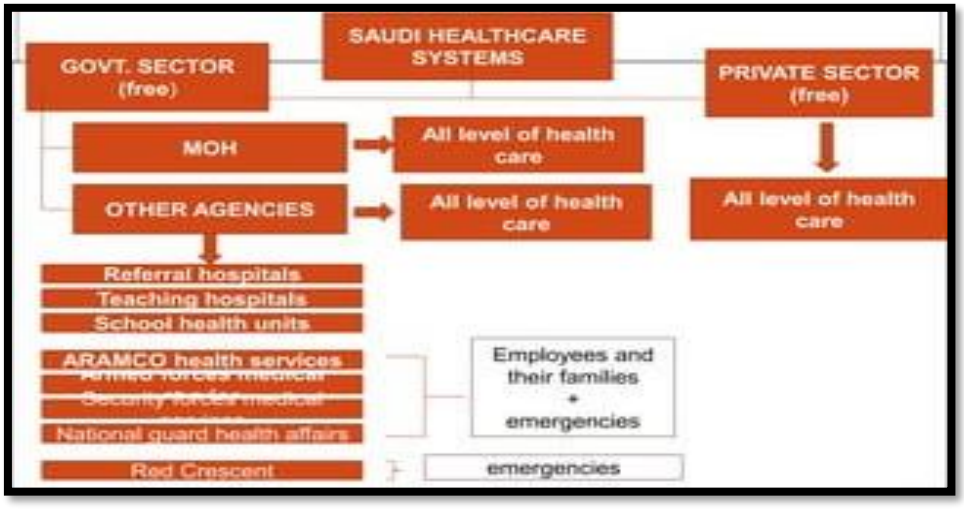


Figure 2: Structure of Healthcare system in Saudi Arabia

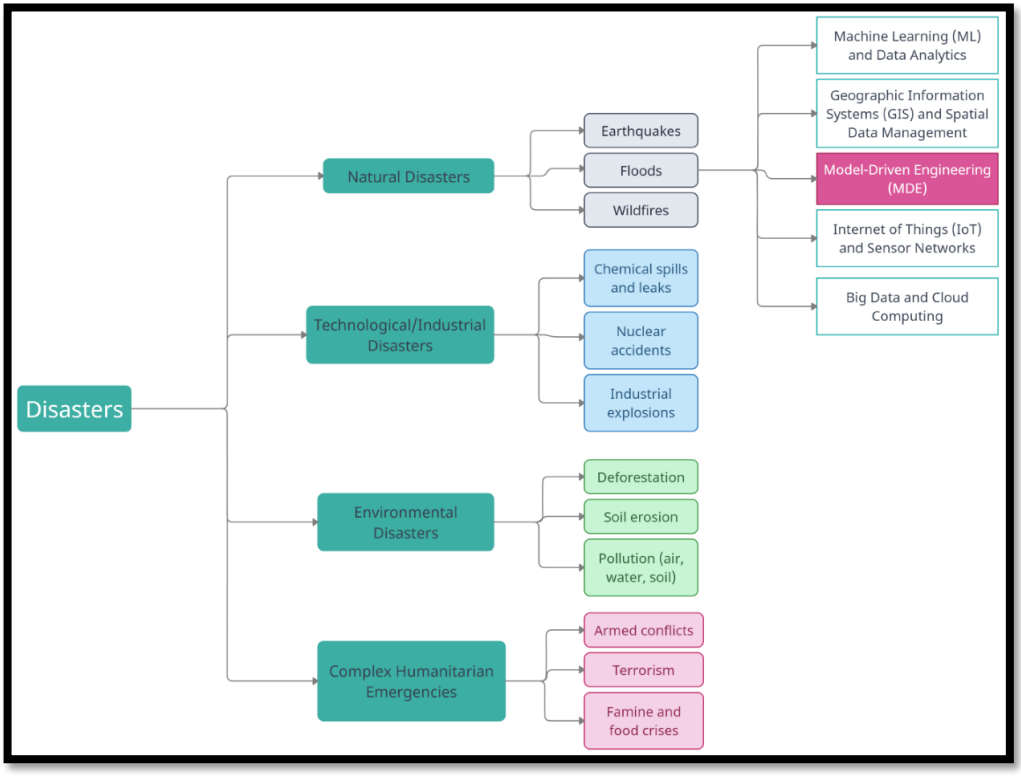
Disaster Management in Saudi Arabia:

As mentioned earlier, according to the DHM framework, damage management for health services should consist of multiple efforts required for health assessment and management of risks arising from natural disasters and catastrophes WHO (2016). Therefore, the DHM model should support the integration of prevention and mitigation, planning and preparedness, response and relief and recovery, abbreviated as PPRR (WHO, 2016).

A preliminary review of the KSA and DHM model shows that not much effort has been made in the country. In contrast, Saudi Arabia seems to have a healthy and natural response to emergencies. The following subsections explain PPRR in the context of DHM. However, Kumar et al (2019) conducted a study on disaster planning focusing on the 2009 and 2010 Jeddah floods. The participants in this study were representatives of KSA, decision makers and disaster management managers in Jeddah (before, during and after the 2009 and 2010 floods). The participants identified that the main concern of preparedness was response time, followed by efficiency, cost structure and available resources. However, this study did not show disaster preparedness and its impact. In general, effective disaster management depends on adequate planning before the disaster occurs. Alkhalil (2018) conducted the only research on disaster planning in the Saudi Arabian health system, but focused only on six hospitals in Jeddah. These include the location, construction and equipment of the hospital structure, hospital life safety, maintenance of electrical equipment, capacity expansion, emergency and disaster planning, communication and coordination management, hospital process management. In addition to micro-level planning, effective planning of appropriate construction and hospital furniture is also required to reduce the impact of disasters. This includes windows, ceilings, partition walls and lighting, as well as office equipment (such as mechanical equipment, medicine containers, medical and laboratory equipment) and desks. The third indicator is the safety of living facilities, including electricity, water and sanitation, and waste treatment and disposal. All these factors play an important role in the regular functioning of the hospital and therefore should be part of special procedures and methods for disaster preparedness. Safe hospitals are important when an accident or disaster occurs. The location of the treatment center is important; it should be away from danger, dust, noise and fire. Electrical equipment should be properly maintained and sufficient water equipment is needed along with electricity and medical gas. Therefore, hospitals must create a treatment plan that is strictly followed. This capacity is also considered important because it includes space, equipment and personnel. , nurses, mental health workers, emergency room physicians and public health professionals. Well-planned hospitals have specific principles for increasing the number of staff and therefore need intervention systems to support the increased capacity. Training capacity needs to be increased to train doctors in disaster preparedness. Hospitals also need to have enough space to be converted into medical centers, for example, when more beds are needed. Capacity building also includes planning the time to provide additional facilities, food, and personnel. Exercise. To do this, hospitals need easily visible hazard maps and emergency response managers. Social workers or other professionals should be prepared to publish publicly available information, preferably in coordination with the public information center. The hospital's disaster plan should cover the continued operation of the public health center in the event of an emergency or emergency.

Current Practices in Disaster Prevention:

It is worth noting that disaster prevention in Saudi Arabia has improved significantly, especially in terms of the dangers of diseases (Ministry of Health, 2019). The Ministry of Health is committed to eliminating disease by continuing to improve the country's surveillance and the stringency of prevention and control plans. These support efforts have successfully eliminated many infectious diseases. However, these are not the only issues that need to be considered in disaster planning. No single study has been conducted in the KSA environment under the DHM model on disaster prevention and mitigation.



Source: Khan et al (2023)

Figure 3: Current Practices in the World for Disaster Management

Synonyms and interchangeable. WHO stated that this is a good practice because mitigation also includes prevention. However, the word "mitigation" means reducing "the weight of people and property lost due to disasters", while the word "prevention" aims to "ensure that human activity or nature does not cause disasters or natural emergencies". This can be achieved by eliminating hazards or negative situations such as preventing overpopulation or deforestation, or by providing services. WHO (2015) stated that "In a healthy environment, people eating healthily

will be less hazardous for most people". Therefore, it is important for Saudi Arabia to prevent disease and infection. This is a good development; for example, the public's protective immunity makes them resistant to disease. Although the accident itself cannot be eliminated, the negative effects of the disaster will be reduced. Healthy communities and the environment will be more affected. Ability to withstand, respond to and recover from disasters and emergencies.

Healthy people in a healthy environment are generally better at coping with tragedies and disasters than others. Therefore, the main goal of risk reduction is to "reduce the risk of exposure to hazards". In addition to the DHM model, the Kingdom of Saudi Arabia can also learn from the disaster prevention and mitigation strategies used by Canada. Provide leadership in mitigation management and coordination (Public Safety Canada). The Ministry of Health should be the leader in coordination, because risk reduction often involves all levels of government, the private sector, non-governmental organizations (NGOs) and communities. Collaboration and cooperation between these organizations are necessary to ensure a sustainable way to reduce risk. The second important aspect of disaster preparedness is coordination and accountability, because disaster prevention requires a wide range of experts from different segments of society. Disaster preparedness should therefore involve all levels of government, professional groups and education and "support private and volunteer efforts to build consensus on mitigation" (Public Safety Canada). Community participation is important for disaster prevention in Saudi Arabia.

4. Conclusion:

As discussed in this present study the researcher has touched most of the aspects related to response and structure of healthcare services in the cases of disaster and crisis. It can be concluded that the country of Saudi Arabia is not very much prepared in terms of disaster management and response to the same and the dependency is more on the external agencies. Additionally, the country does not seem to have clear mechanisms for disaster recovery. Despite these shortcomings, the country of Saudi Arabis does have good disaster response measures but the overall system of health care is good enough in the present times and there is a huge scope of development and growth in the times to come. Consequently,MOH, the department in charge of disaster activities in the Kingdom, needs to assess and consider the suitability of the WHO DHM model in order to develop a more comprehensive approachto disaster preparedness.

WORKS CITED

Dar O, Buckley EJ, Rokadiya S, Huda Q, Abrahams J (2014) Integrating health into disaster risk reduction strategies: Key considerations for success. Ame J Pub Health 104: 1811-1816.

Khan, S. M., Shafi, I., Butt, W. H., Diez, I. d. l. T., Flores, M. A. L., Galán, J. C., & Ashraf, I. (2023). A Systematic Review of Disaster Management Systems: Approaches, Challenges, and Future Directions. Land, 12(8), 1514. https://doi.org/10.3390/land12081514

Afifi W, Felix ED, Afifi TD (2012) The impact of uncertainty and communal coping on mental health following natural disasters. Anxiety, Stress & Coping 25: 329-347.

Gerdin M, Clarke M, Allen C, Kayabu B, Summerskill W, et al. (2014) Optimal evidence in difficult settings: Improving health interventions and decision-making in disasters. Plos Med 11: 1-4.

R. Jaziri, M.S. Miralam, The impact of crisis and disasters risk management in COVID-19 times: Insights and lessons learned from Saudi Arabia, Ethics, Medicine and Public Health,
Volume 18, 2021, 100705, ISSN 2352-5525, https://doi.org/10.1016/j.jemep.2021.100705.
Zahran S, Peek L, Snodgrass JG, Weiler S, Hempel L (2011) Economics of disaster risk, social vulnerability, and mental health resilience. Risk Analysis: An Inter J 31: 1107-1119.
Alamri YA (2012) Emergency management in Saudi Arabia: Past, present and future.
Zhong S, Clark M, Hou X, Zang Y, FitzGerald F (2014) Progress and challenges of disaster health management in China: A scoping review. Global Health Action 7: 1-9.
Humphrey J (1999) Casualty management: Scud missile attack, Dhahran, Saudi Arabia. Military Medicine 164: 322-326.
Al-Hasawi A (2008) Proposal on disaster management plan of Saudi Arabia based on earthquake damage estimation of Tabuk City. Bulletin Inter Inst Seismology Earthquake Eng 42: 103-108.
Al-Qahtani S, Al-Dorzi HM (2010) Rapid response systems in acute hospital care. Annals of Thoracic Medicine 5: 1-4.
Momani NM, Fadil AS (2013) Risk management practices in the Saudi business organizations: A case study of the city of Jeddah. J Business Retail Manag Res 7: 96-105.
Momani NM, Salmi A (2012) Preparedness of schools in the Province of Jeddah to deal with earthquakes risks. Disaster Prevention & Management 21: 463-473.
Parker MW, Dunn LL, MacCall SL, Goetz J, Park N, et al. (2013) Helping to create an age-friendly city: A town & gown community engagement Project. Social Work & Christianity 40: 422-445.
McCourt R, Power J, Glackin M (2013) General Nurse's experiences of end-of-life care in the acute hospital setting: A literature review. Inter J Palliative Nursing, 19: 510-516.
Robinson D, Reed V (1998) The A-Z of social research jargon. New York: Ashgate. World Health Organization.
Abalos E, Carroli G, Mackey ME, Bergel E (2006) Critical appraisal of systematic reviews: The WHO Reproductive Health Library, Geneva: The World Health Organization.
World Health Organization (WHO) (2012) Health indicators of disaster risk management in the context of the Rio+20 UN Conference on Sustainable Development.
Al-Bassam AM, Zaidi FK, Hussein MT (2011) Natural hazards in Saudi Arabia.
World Health Organization (WHO) (2000) The world health report 2000.
20 Ministry of Finance (2014) Ministry of Finance statement about the national budget for 2014, Riyadh.