The role of risk and crisis management in addressing health crises: An applied study on Suleiman Al-Habib Hospital

Dr. Lamia Mohammed Al-Muqaddam
Gulf College- Saudi Arabia

Abstract:
This study focuses on exploring the consideration and diversity of multiple crises in the health capacity of health institutions to confront their diverse health issues. The study particularly affects the application of the principles and practices of multi-crisis management in Sulaiman Al-Habib Hospital as an applied model. The study aims to determine the extent to which post-multiple crisis management remains on the hospital's ability to respond to, respond to, and recover from various health crises.
The study relied on the descriptive analytical approach, and quantitative data was collected through questionnaires directed to workers at various administrative and medical levels at Sulaiman Al Habib Hospital, with the aim of measuring the level of application of risk and crisis management processes and evaluating their attitudes towards their effectiveness in confronting health crises.
The study resulted in a clear identification of the importance of risk and crisis management in the health sector, and highlighted the best practices applied by Sulaiman Al Habib Hospital in this context. The findings also contributed to providing practical and applicable recommendations for other health organizations wishing to enhance their ability to efficiently and effectively respond to health crises, thus ensuring the continuity of providing high-quality health services in emergency situations.

Keywords: Risk Management, Crisis Management, Health Crises, Sulaiman Al-Habib Hospital.

Introduction:

W orking in hospitals requires different cognitive, specialized, social and psychological combinations of workers who deal with clients who differ in their social, psychological, physiological and economic composition, which increases the likelihood of hospitals being exposed to crises, in addition to the challenges that increase the difficulty of solving issues such as technological and economic developments and globalization, so the existence of crisis management in hospitals has become a necessity, especially after the emergence of COVID-19, which had devastating psychological, social and economic effects, as COVID-19 caused mortality rates to increase by 13% in 33 countries of the Economic Cooperation Organization during the years 2020-2021 The response to the Corona pandemic required the Kingdom of Saudi Arabia to harness all its capabilities and resources to face and overcome the crisis, as the Saudi Ministry of Health adopted the National Center for Health Crisis and Disaster Management as the first center in the Middle East to provide aid and support with the World Health Organization (Khan el, 2021) . In addition to making efforts to preserve physical and psychological health in the region and develop effective rapid response plans to prevent the spread of disease and infection and ensure the provision of health services in a safe manner, through effective coordination between the concerned parties such as civil defense, medical organizations, police and government agencies, in addition to intensifying training for working cadres, qualifying medical and leadership teams, raising their skills and providing administrative cadres aware of strategies for dealing with crises, preparing plans and developing appropriate alternatives to confront them.

The issue of the study lies in the fact that the nature of work in hospitals makes them vulnerable to many risks such as medical risks, which are medical errors, surgical complications, drug side effects, and hospital-acquired infections, in addition to administrative risks that negatively affect the quality of care and patient safety, such as poor planning and wrong administrative decisions, lack of resources and poor coordination and communication, as well as the increasing costs of health care at a time when health sectors suffer from lack of funding and financial losses resulting

from lawsuits (Dagenais et al., 2023). With the increasing reliance on technology, hospitals face cyber risks that threaten information security and technical risks related to the efficiency and functionality of devices, as well as environmental risks such as waste disposal, hygiene and ventilation that can affect the health of patients and staff, and not only that, but also the difficulty of predicting some risks such as the outbreak of infectious diseases or natural disasters (Baikmohammadi et al., 2024).

In light of this uncertainty, we find that hospitals suffer from a lack of the necessary resources to effectively implement risk management systems, in addition to the lack of the necessary equipment and technology and the lack of trained personnel to address these risks. In addition to these challenges, hospitals face the resistance of some employees to adopt new risk management practices, and the complex work environment reduces the effectiveness of communication to ensure the identification, reporting and treatment of risks, and the study question focuses on what is the impact of adopting an integrated risk management methodology on the hospital's ability to face crises.

This study mainly aims to identify and evaluate the impact of different risk management elements on the hospital's ability to face crises by measuring the impact of the level of application of the scope and context dimension on the hospital's ability to face crises, identifying the extent of the impact of risk assessment on the hospital's ability to face crises, analyzing the impact of the level of application of risk treatment on the hospital's ability to face crises, and identifying the level of application of the communication, consultation, review, audit, and training dimension on the hospital's ability to face crises.

The study hypotheses were based on the existence of a statistically significant relationship between the elements of risk management and the hospital's ability to face crises.

The study focuses on the private health sector in the Kingdom of Saudi Arabia. The study covers the time period from 2023 to 2025, and the data will be analyzed over two years. The human limits of the study are the technical and administrative staff of the hospital.

The descriptive-analytical approach was adopted when describing and analyzing the variables of the study, and the historical approach was

utilized. Information and data were collected from primary and secondary sources, and primary data were represented in the respondents' point of view and obtained by the questionnaire tool, and secondary sources were represented in references, periodicals, scientific research, conferences, and the Internet of information.

A study (Boualaga, 2021) aimed to find out the role of official communication in activating the stages of health crisis management in public institutions in the state of Medea, and the study found that official communication contributes significantly to activating the stages of crisis management by providing the necessary information to the different administrative levels.

The study (Ismail, 2022) aimed to determine the reality of strategic leadership with its dimensions (strategic personality, strategic change, strategic thinking, strategic decisions) The study found that there is a statistical impact of strategic leadership in all its dimensions on the effectiveness of crisis management, and that the strategic thinking of administrative leaders was not at an acceptable level in influencing the stages of the crisis, and the study recommended the need to benefit from previous crises and evaluate the efficiency and effectiveness of previous crisis management plans and programs. This study addressed the elements of risk management (defining the context and scope, risk assessment, risk treatment, training, review and audit, communication and consultation) These elements have not been addressed in previous studies collectively.

Risk and crisis management in the health sector is of vital importance in hospitals, as hospitals need to continuously assess operations, study the likelihood of exposure to crises, determine their rate, causes and quality, and prepare with medical, administrative and financial resources to respond quickly to expected and unexpected crises, which contributes to addressing health crises and overcoming them with the least possible losses.

Risk management is defined as the processes that include predicting risks, developing appropriate strategies to face crises, providing human and material resources, building capacities and qualifying them in a way that allows them to respond quickly to the crisis in addition to directing

investments in health planning to meet the needs of the community and minimize the negative effects of crises (Saba, 2021) .

The work in risk management in the past was limited to isolation and immediate treatment of the injured, then evolved to develop preventive measures such as environmental disinfection and quarantine to reach risk management in its current form, which benefited from technological and medical development, as scientific research began to develop strategies for prevention and appropriate intervention in crises, and countries and international institutions cooperated in developing strategies for dealing with epidemics and health disasters (AL-NSOUR ،2022)).

Risk and crisis management in the health sector is one of the departments that seek to develop plans and strategies to address emergency situations effectively and analyze data that help them develop multiple scenarios to face future possibilities, in addition to training workers in a way that ensures rapid response and correct handling of emergency situations (Yubin Cao et al., 2020). It is one of the administrative tools that enable the organization to provide timely and effective humanitarian support, and contingency planning involves making decisions to manage human and material resources efficiently.

National Center for Crisis and Disaster Management

In line with the Kingdom's ambitious Vision 2030, and specifically towards achieving its strategic goal of risk reduction, the National Center for Health Crisis and Disaster Management in Saudi Arabia has taken a leading position as the first center to be accredited by the World Health Organization (WHO) for crisis and disaster cooperation in the Eastern Mediterranean region.

This center plays a vital role as a centralized operations and control room to activate the regulations and laws issued by the Ministry of Health in this important sector, and represents an official point of contact between the Ministry and various concerned government agencies such as the Red Crescent and Civil Defense, in addition to being a link between the branches of health affairs in all regions of the Kingdom.

The center's responsibilities include monitoring and analyzing health developments affecting the community, identifying basic needs,

monitoring the performance of health facilities, and providing appropriate support when an emergency occurs. Its work is not limited to addressing and responding to crises when they occur, but extends to proactive efforts to prevent them by conducting periodic assessments of risks in health institutions, analyzing their causes, drafting periodic reports, and developing plans to deal with them.

In as little as two years (1443 AH), the center efficiently supervised more than 1,100 crisis simulation exercises, issued more than 1,000 specialized reports, developed more than 20 data models, and implemented various training programs that benefited more than 250 professionals in the field of disaster and crisis management (as reported by the Saudi Ministry of Health).

Strategic planning for health emergencies is one of the important mechanisms to confront crises, as it predicts the likelihood of exposure to crises by analyzing data, assessing the prevailing conditions, analyzing the internal and external environment to identify weaknesses and work to improve them, as well as threat situations and developing scenarios to confront them quickly and effectively (Fagherazzi et al. 2020).

Crisis management in hospitals is a vital aspect that requires constant attention, good planning and effective organization, as it includes all possible scenarios that may negatively affect the workflow inside the hospital and the possibility of providing health care effectively and efficiently, and includes natural health challenges such as natural disasters such as earthquakes, floods, hurricanes, thunderstorms and droughts, as well as various homeopathic, viral, bacterial, fungal and parasitic epidemics, besides that, it includes potential biological and chemical threats that can pose a serious danger to individuals and

The definition of a hospital crisis includes all situations that disrupt or minimize a hospital's ability to deliver healthcare normally. Natural health crises include natural disasters such as earthquakes, floods, hurricanes, tornadoes, and severe weather events. In addition to biological and chemical crises such as epidemic outbreaks, food poisoning, and exposure to harmful chemicals. Generally speaking, crises in hospitals can also

include many other factors such as shortages of necessary resources, power outages, water supply interruptions, fire incidents, and explosions. Moreover, hospital crises are also considered when there is a delay in the response of medical or hospital staff to emergencies or when there is any shortage or damage to vital medical equipment. In the end, it can be said that hospital crises pose a major challenge to the health system, as they are considered a threat to patients' lives and affect the hospital's ability to provide the necessary health care (aeyoung). ،2023)

Crises are characterized by a number of characteristics, such as the **high** degree of uncertainty in decisions, and the crisis management team works in an atmosphere of doubt and uncertainty as a result of uncertainty, lack of information and blurred vision, and the exposure of those dealing with crises in high pressure resulting from the need to make quick decisions in a limited time and that these decisions are characterized by accuracy and correctness at the same time, and under this pressure and tension the need for urgent reactions increases to address the risks that threaten the administrative entity (Chabrol et al., 2023).

Crises are categorized according to their impact on health services and the hospital's ability to confront them according to size, causes and type, and each of these classifications has a role in helping hospital decision makers to take the appropriate decision accordingly. This classification also includes identifying the types of crises that hospitals are likely to be exposed to, such as natural disasters such as earthquakes, floods, severe weather conditions and biological disasters such as the spread of infectious diseases (hospitals, 2022) , and this classification helps hospital risk and crisis management in developing plans and determining appropriate procedures that suit the type of crisis.

The classification by size helps in determining the capabilities and resources that the hospital needs to face this crisis, as the smaller the size of the crisis, the greater the hospital's ability to face it in terms of capabilities and resources, and the larger the size of the crisis, the more complicated the situation becomes, as small crises have a less severe impact than large-scale crises, as the latter require greater cost and

mobilization of efforts and material and moral support to deal quickly and decisively with the crisis. The classification according to the causes of the crisis helps to deeply understand the roots of the crisis to which the hospital is exposed, such as human errors, system errors, and errors resulting from poor planning and the correct understanding of the roots enables the hospital to address them by developing prevention strategies that minimize the occurrence of the crisis and its negative impact on health services (hospitals, 2022 AD) .

The impact of crises on the quality of the health services provided is evident, as crises pose a high pressure on health personnel as a result of the spread of epidemic diseases, which requires a rapid response in light of the available resources. On the other hand, natural crises such as floods and earthquakes can lead to the destruction of hospital infrastructure, which contributes to reducing and limiting access to health services, while man-made disasters such as environmental pollution and industrial waste may cause serious health issues that constitute a burden on the health sector (Hassan, 2021) .

Crisis management is a vital element in health organizations. The nature of work in hospitals makes them vulnerable to various and unexpected challenges, and therefore the burden falls on the hospital crisis management to address the crisis through good planning and advance preparation to minimize potential damage and restore activity after the occurrence of the shock in addition to benefiting from crisis experiences and doing continuous improvement (AL-NSOUR ،2022) . The work of crisis management requires components to ensure effective management such as simplifying procedures and dealing with the crisis with a scientific methodology and avoiding randomness and confusion when addressing crises, the method of trial and error and improvisational procedures and the delegation of authority. Add to the delegation of authority because it allows all members of work teams to carry out the tasks assigned to them in a timely manner and accomplish their tasks required of them, develop plans and identify alternatives and are arranged according to priorities, addressing the crisis requires preparation in terms of material and human

resources and a proper understanding of the dimensions of the crisis and the formation of work teams and training human cadres allows them to respond quickly and effectively (Vohra, 2023) .

Crisis management in Saudi hospitals faces many challenges such as lack of material and human resources, and the severity of these challenges increases in times of disasters and crises, which requires a rapid and effective response to face the crisis and deal with it properly and then restore the existing conditions and work on improvement and development, and requires readiness to provide psychological and social support to patients and their families under difficult circumstances, train medical and nursing staff to deal with those circumstances, apply safety and protection procedures, and provide funding, which is one of the most prominent challenges facing risk management in the health sector and affects

The complexity of work systems and the length of decision-making chains negatively affect the speed of crisis response, and this challenge requires intensive training for workers to deal with highly complex procedures professionally and effectively to mitigate their negative consequences on the lives of those affected (Jaziri 2021 & Miralam).

Scoping the context and criteria: Scoping the context and criteria is a critical step in building an effective risk management system. By understanding the internal and external environment and defining clear risk assessment criteria, health organizations can ensure that the risk management process is effective and efficient and contributes effectively to achieving their goals and protecting their values.

Risk assessment: ،2021)It is the process in which data is analyzed and the likelihood of risks that the hospital may be exposed to is determined by studying the environmental, economic and social factors that affect hospitals and then identifying possible scenarios for risks, and the risks to which hospitals may be exposed include natural risks, man-made risks and technical risks. The analysis of potential risks is an essential part of the planning and organization process to build the crisis management system in hospitals, based on which strategic and tactical plans are developed to face crises efficiently and effectively, and includes building the organizational structure of the responsible units.

Risk treatment: Risk treatment is the process of selecting and implementing actions to modify risks. This stage comes after risk assessment, where significant risks are identified that require actions to be taken to deal with them in order to reduce the likelihood of their occurrence and negative impact to an acceptable level determined by the health organization based on its risk appetite criteria**.** (Lauren R. Shapiro, 2021)

Review and audit: ، 2023)Auditing and auditing are important processes in risk management. Auditing refers to a periodic and regular evaluation of the risk management system and its various elements. The audit process is based on assessing the adequacy of the risk management system, determining the effectiveness of implementing processes and the extent of compliance with policies and procedures. Auditing can be done periodically (annually, semi-annually, quarterly) or when significant events or major changes occur in the organization or its environment, the audit methodology depends on its scope and objectives and may include document analysis, interviews with employees, data analysis, meetings, and auditing refers to an independent and objective evaluation process.

Training: It includes training health cadres and workers in governmental and private hospitals on emergency plans, raising their field medical triage skills and increasing their abilities to deal with injuries, emergencies and crises. The training takes place in three stages as follows (Al-Shehhi, 2018) :

The first stage is during the event: Where coordination is done to provide a sufficient number of medical teams to provide appropriate services to those affected. Coordination with the designated authorities, conducting medical triage in the evacuation area and submitting the necessary reports. The second phase after the event: In this phase, the tasks performed are evaluated, the situation is assessed, and preparations are made to restore the normal situation before the event and then develop plans for improvement.

Communication and consultation: Effective communication and consultation are pivotal elements of the risk management framework, as they represent a systematic mechanism for the exchange of relevant

information between different stakeholders. This continuous interaction contributes to building a common understanding of the nature and impacts of potential risks and integrating diverse perspectives into the decision-making process, which enhances the quality of decisions made on risk assessment and management. Transparent and clear communication builds trust and enhances risk management efforts, facilitating the effective implementation of agreed procedures (aeyoung). ،2023)

2.Study Procedures

The study population consisted of employees of Sulaiman Al-Habib Hospital, and a simple random sampling method was used, and all participants in the questionnaire were among the hospital's risk management workers and senior and middle management, and the questionnaire was relied on as the main tool of the study with the aim of reaching facts and testing hypotheses, and the questionnaire consisted of two main sections, the first section included the personal data of the respondents, and the second section included risk management elements with 30 phrases, and 300 questionnaires were distributed to the respondents, and the questionnaire phrases were formulated on a five-point Likert scale.

The statistical tools used in the study:

The data from the questionnaires were analyzed using IBM SPSS v26. for statistical analysis. Cronbach's alpha coefficient (Cronbach's alpha) to test the stability and reliability of the instrument. Pearson correlation coefficient (Pearson correlation coefficient) to measure the internal consistency of the tool and to test the existence of a relationship between the study variables and determine the type of relationship, frequency tables (Frequencies), percentages (Percent) and illustrations to describe the personal data of the respondents.The arithmetic mean (Mean) to know the respondents' attitudes towards the axes paragraphs. The standard deviation (Standard Deviation) to know the extent to which the respondents' responses to each paragraph deviate from its arithmetic mean and determine its relative importance, and multiple regression analysis to determine the effect of the independent variables on the dependent variable.

Scoping the context and criteria	Weighted average	Standard deviation	Weight Relative
Management analyzes the external environment to identify threats	4.25	0.75	89
Management analyzes the internal environment to identify weaknesses	3.72	0.25	93.4
Management is interested in collecting indicators of risk	3.82	0.34	87.2
Management analyzes data to create proactive plans to deal with risks	4.15	0.89	90.4
Management provides a database of risk-related information	4.22	0.85	83.2
Weighted mean and total standard deviation	4.032	0.616	88.64

Analyze the dimensions and axes of the questionnaire:

To achieve the objectives of the study and verify its hypotheses, the relative frequency distribution and descriptive statistics were used for all axes of the study, and to know their attitudes towards the potential risk analysis dimension, they were asked the statements shown in Table (1).

Table (1) Respondents' perspective on Scoping the context and criteria

Source: Prepared by the researcher, based on questionnaire data, 2025

-Table (1) indicates the respondents' tendency to agree with the hospital's interest in defining the scope of the context and standards, the total mean of the axis was (4.032) and the total standard deviation was (0.616), the respondents' agreement with the hospital's interest in defining the scope of the context and standards came with a relative weight of 88.64%, and to know the respondents' view on the hospital's interest in defining the scope of the context and standards, they were asked the statements as shown in

Risk assessment	Weighted average	Standard deviation	Weight Relative
The hospital is interested in using a variety of sources to identify risks (e.g. incident logs, staff reports, patient surveys)	4.75	1.897	77.5
The likelihood and impact of each risk is systematically analyzed	7.78	1.691	77.8
Appropriate tools and methods are used to analyze risks (e.g., risk matrix, root cause analysis)	3.89	1.768	78.9
The hospital is interested in establishing an acceptable level of risk	7.54	2.006	75.4
Hospital risk assessment process helps make informed decisions	8.25	1.982	8.25
Weighted mean and total standard deviation	6.675	1.869	78.4

Table (2).

Table (2) Respondents' views on risk assessment

Source: Prepared by the researcher, based on questionnaire data, 2025

-Table (2) indicates the respondents' tendency to agree with the hospital's interest in risk assessment, the total mean of the axis was equal to (6.675) and the total standard deviation (1.869), the respondents' approval of risk assessment came with a relative weight of 78.4%, and to know the

Risk management	Weighted average	Standard deviation	Weight Relative
Clear and appropriate strategies are developed to address identified risks	4.69	0.486	86.9
Remediation actions are carried out effectively and in a timely manner	4.14	0.527	91.4
The effectiveness of remediation procedures is monitored periodically	3.67	0.817	86.7
Employees are adequately trained to carry out remediation procedures	4.79	0.348	87.9
The results of the remediation procedures are evaluated and determined whether they have achieved the desired goals	4.58	0.484	85.8
Weighted mean and total standard deviation	4.374	0.5324	87.7

respondents' view on the dimension of risk assessment, they were asked the statements as shown in Table (3)

Table (3) Respondents' perception of the risk management dimension

Source: Prepared by the researcher, based on questionnaire data, 2025

-Table (3) indicates the respondents' tendency to agree on the hospital's interest in addressing risks, the total mean of the axis was equal to (4.374) and the total standard deviation **(**0.5324**)**, the respondents' approval came remotely with a relative weight of 87.7%, and to know the respondents' view on the extent of the hospital's interest in **addressing risks,** they were asked the phrases as shown in Table (4).

Table (4) Respondents' perception of the hospital's interest in training

Training	Weighted average	Standard deviation	Weight
The hospital's plan includes crisis management training procedures after any crisis in the hospital	4.62	0.648	87.5
The hospital is interested in training staff to increase their skills to face crises	3.14	0.731	90.4
The hospital provides the necessary trainings for workers to deal with modern technologies to face crises	3.84	0.592	89.4
The hospital is interested in engaging employees in training on the application of the crisis management model	4.46	0.412	92.6
The hospital has the capabilities to provide practical programs that contribute to the implementation of the crisis management model	4.68	0.430	90.8
Weighted mean and total standard deviation	4.148	0.563	90.14

Source: Prepared by the researcher, based on questionnaire data, 2025

Table (4) indicates the tendency of the respondents to agree on the hospital's interest in training staff to face crises, the total mean of the axis

was equal to (4.148) and the total standard deviation (0.563), The respondents' approval of the hospital's interest in training staff came with a relative weight of 81.5. In order to know the respondents' view on the extent of the hospital's interest in the audit dimension, they were asked the statements as shown in Table (5)

Table (5) Respondents' perception of the audit dimension

Review and audit	Weighted average	Standard deviation	Weight Relative
Risk-related data and information is collected on an ongoing basis	3.62	0.448	66.2
Risk-related Key Performance Indicators (KPIs) are regularly monitored	4.14	0.231	91.4
The risk management plan, policies and procedures are reviewed periodically	3.84	0.472	78.4
Changes in the internal and external environment that may affect risk are monitored	3.46	0.622	84.6
Periodic audits are conducted to assess the effectiveness of the risk management system	4.68	0.480	76.8
Weighted mean and total standard deviation	3.948	0.4506	79.48

Source: Prepared by the researcher, based on questionnaire data, 2025

Table (5) shows the respondents' tendency to agree on the audit dimension, the total mean of the axis was equal to (3.948) and the total standard deviation (0.4506), and the table shows the respondents' approval of the availability of the audit dimension, the respondents' approval of the availability of the audit dimension came with a relative weight of 79.48%. In order to know the respondents' view on the extent of the hospital's interest in the dimension of communication and consultation, they were asked the following statements as shown in Table (6)

Table (6) Respondents' views on the communication and consultation dimension

Source: Prepared by the researcher, based on questionnaire data, 2025

-Table (6) shows the respondents' tendency to agree on the dimension of communication and consultation, as the total mean of the axis was equal to (3.868) and the total standard deviation (0.5792), and the table shows the respondents' agreement with the availability of the dimension of communication and consultation.

Testing the main hypothesis: Multiple regression analysis was used as shown in Table (7).

Table (7) Multiple regression analysis of the effect of risk management elements on crisis response

Communication and consultation	**Weighted average**	**Standard deviation**	**Weight Relative**
Risks and strategies to address them are effectively communicated between different departments in the hospital	4.62	0.238	86.1
Employees are provided with adequate information about the risks related to their work	3.74	0.778	77.4
Employees are encouraged to report risks and participate in the risk management process	4.84	0.624	79.3
Risk-related complaints and suggestions are handled effectively	3.46	0.497	74.2
Employees and other stakeholders are consulted when developing risk management plans	3.68	0.759	75.8
Weighted mean and total standard deviation	3.868	0.5792	78.56

sig	t	**Regression coefficient (β)**	**Defining context and criteria**
0.000	2.367	0.685	
		0.868	Correlation coefficient **R**
		0.802	Determination coefficient $\mathbf{R^2}$
		60.948	F
		0.000	Sig F

Source: Prepared by the researcher, based on questionnaire data, 2025

The results indicate that there is a strong and statistically significant positive relationship between the independent variable and the dependent variable, and the correlation coefficient value R: 0.868 indicates a strong positive linear relationship between the independent and dependent variables, the value of the coefficient of determination R2: 0.802, which is close to 1, indicating a strong positive relationship.

Table (8) Multiple regression analysis of the effect of risk assessment on crisis response

sig	t	**Regression coefficient (β)**	**Risk Assessment**
0.000	3.712	0.845	
		0.732	Correlation coefficient **R**
		0.813	Determination coefficient $\mathbf{R^2}$
		72.901	F
		0.000	Sig F

Source: Prepared by the researcher, based on questionnaire data, 2025

- The $R^{(2)}$ value of 3.81 shows that the independent variable Risk Assessment is able to explain 84.5% of the changes in the dependent variable Crisis Response, and 157.% is due to other variables that were not included in the study.
- The value of the marginal slope coefficient β (0.845) shows that increased attention to risk assessment leads to an increase in the hospital's ability to cope with crises by (84.5%).
- The significance of this effect is confirmed by the T value (3.712) and the F value (72.901) at the significance level (0.000), which is less than (0.05).

Table (9) Multiple regression analysis of the effect of risk management on crisis response

sig	t	**Regression coefficient (β)**	**Risk treatment**
0.000	11.743	0.753	
		0.743	Correlation coefficient **R**
		0.723	Determination coefficient $\mathbf{R^2}$
		60.077	F
		0.000	Sig F

Source: Prepared by the researcher, based on questionnaire data, 2025

- The $R^{(2)}$ value of 0.723 shows that the independent variable Risk Management is able to explain 72.3% of the changes in the dependent variable Crisis Response, and 277.% is due to other variables that were not included in the study.
- The value of the marginal slope coefficient β of (0.753) shows that increased attention to risk management leads to an increase in the hospital's ability to cope with crises by (75.3%).
- The significance of this effect is confirmed by the T value (11.743) and the F value (60.077) at the significance level (0.000), which is less than (0.05).

Table (10) Multiple regression analysis of the effect of auditing on crisis response

sig	t	**Regression coefficient (β)**	**Monitoring and auditing**
0.000	2.456	0.795	
		0.841	Correlation coefficient **R**
		0.704	Determination coefficient $\mathbf{R^2}$
		58.948	F
		0.000	Sig F

Source: Prepared by the researcher, based on questionnaire data, 2025

- The $R^{(2)}$ value of 0.704 shows that the independent variable auditing is able to explain 70.4% of the changes in the dependent variable facing crises, and 296.% is due to other variables that were not included in the study.
- The value of the marginal slope coefficient β of (0.795) shows that increased attention to auditing leads to an increase in the hospital's ability to face crises by (79.5%).
- The significance of this effect is confirmed by the T value (2.456) and the F value (58.948) at the significance level (0.000), which is less than (0.05).

Table (11) Multiple regression analysis of the effect of training on crisis response

sig	t	**Regression coefficient (β)**	**Training**
0.000	4.5763	0.804	
		0.819	Correlation coefficient **R**
		0.798	Determination coefficient $\mathbf{R^2}$
		71.231	F
		0.000	Sig F

Source: Prepared by the researcher, based on questionnaire data, 2025

- The R^2value of 0.804 shows that the independent variable Training is able to explain (80.4%) of the changes in the dependent variable Crisis Response, and 20.2% is due to other variables that were not included in the study.
- The value of the marginal slope coefficient β (0.804) shows that increasing the interest in training leads to an increase in the hospital's ability to face crises by (80.4%).
- The significance of this effect is confirmed by the T value (4.5763) and the F value (71.231) with a significance level of (0.000), which is less than (0.05).

Table (12) Multiple regression analysis of the effect of communication and consultation on crisis management

sig	t	**Regression coefficient (β)**	**Communication and consultation**
0.000	3.4875	0.782	
		0.719	Correlation coefficient **R**
		0.746	Determination coefficient $\mathbf{R^2}$
		61.282	F
		0.000	Sig F

Source: Prepared by the researcher, based on questionnaire data, 2024

- The R^2value of 0.782 shows that the independent variable of communication and consultation is able to explain 74.6% of the changes in the dependent variable of crisis management, and 25.4% is due to other variables that were not included in the study.
- The value of the marginal slope coefficient β (0.782) shows that increasing the interest in training leads to an increase in the hospital's ability to face crises by (78.2%).
- The significance of this effect is confirmed by the T value (3.4875) and the F value (61.282) at the significance level (0.000), which is less than (005.).

Results:

The results of the study clearly indicate that there is a positive and statistically significant relationship between the various risk management processes (scoping, context and standards, risk assessment, risk treatment, training, review and audit, communication and consultation) These results can be analyzed and interpreted as follows:

1. The results showed that there is a statistically significant relationship between defining the scope of the context and criteria and the hospital's ability to face crises, and defining the scope of defining the context and criteria positively affects the hospital's ability to face crises by (88.64%).
2. It is clear from the results of the study that a thorough understanding of the hospital's operational environment, its strengths and weaknesses, and potential threats and opportunities increases the hospital's ability to anticipate potential crises.
3. The study also showed that defining clear risk assessment criteria helps prioritize preparedness and effectively allocate resources to address the most dangerous and impactful scenarios and enables the hospital to develop more accurate and effective response plans.
4. The results showed that there is a statistically significant relationship between risk assessment and the hospital's ability to face crises, and risk assessment positively affects the hospital's ability to face crises by (78.4%).
5. Through risk assessment, a hospital can identify potential vulnerabilities in its processes and systems and understand the likelihood and impact of each

risk, enabling management to proactively allocate resources to mitigate these risks and minimize their potential impact when a crisis occurs.

6. The results showed that there is a statistically significant relationship between risk management and the hospital's ability to cope with crises, and risk management positively affects the hospital's ability to cope with crises by (87.7%).
7. The study explains that having clear and implemented risk management strategies in place enhances a hospital's ability to deal with unexpected events effectively.
8. The results showed that there is a statistically significant relationship between audit and review and the hospital's ability to cope with crises, and audit and review positively affects the hospital's ability to cope with crises by (79.48%).
9. Audits help identify potential weaknesses in the risk management system over time and ensure that processes are being implemented correctly and effectively.
10. The results showed that there is a statistically significant relationship between training and the hospital's ability to face crises in the hospital, and training positively affects the hospital's ability to face crises by (81.5%).
11. The study showed that the training enables staff to understand their roles and responsibilities during a crisis, and develop the skills needed to carry out the right actions under pressure. It also increases their awareness of potential risks and how to deal with them, which reduces confusion and improves the hospital's overall coordination and response to the crisis.
12. The study showed that there is a statistically significant relationship between communication and consultation and the hospital's ability to face crises in the hospital, and communication and consultation positively affect the hospital's ability to face crises (78.56%).

Recommendations:

The study highlights the importance of strengthening risk management in the health sector, as it shows the challenges and risks facing the health system. Based on this, the study recommends the following:

1. Strengthening preparedness and planning for potential health crises, and adopting new and advanced methods to develop emergency strategies, including improving communication and coordination between stakeholders.
2. Allocate sufficient time and resources to a deep understanding of the internal and external context and define clear risk assessment criteria as a solid foundation for all risk management efforts.
3. Continue to conduct periodic reviews of the effectiveness of the risk management system and processes, to ensure compliance and identify opportunities for continuous improvement.
4. Build an organizational culture that values the importance of risk management and encourages the reporting of potential risks and active participation in prevention and preparedness efforts.
5. Conducting studies to assess the long-term impact of implementing a risk management system and training on the hospital's ability to cope with different types of crises.
6. Continue to develop training and qualification plans for medical and administrative teams and ensure the provision of modern technology and medical equipment needed to confront health crises.
7. Exploring the mediating and modifying factors that influence the relationship between risk management processes, training, and the hospital's ability to respond to crises

Recommendations for future studies

1. Conduct comparative studies between different hospitals (by size, type and location) to identify best practices in risk management and crisis training.
2. Studying the impact of using new technologies, such as artificial intelligence and big data analysis, in enhancing risk management processes and predicting potential crises in the healthcare sector.

References

Abdullah Abbas AL-KHRABSHEH - Maisoon Abo MURAD - Abdelruhman Abbas AL-KHRABSHEH - Sakher A. I. AL-BAZAIAH - Mahmoud H. ALRABAB'A - Marwan Muhammad AL-NSOUR. (2022). THE IMPACT OF CRISIS SITUATIONS ON THE DEVELOPMENT OF BUSINESS CONTINUITY MANAGEMENT DURING THE COVID-19 PANDEMIC IN JORDANIAN HOSPITALS. *EKONOMIA I ŚRODOWISKO,* pp. 108-84.

Jeehee Min , Ji-Hun Song , Min Young , Hyoungseob Yoo , Ohwi Kwon , Munyoung Yang 1 , Seoyoung Kim 1 , Jongin Lee 1,* and Jun-Pyo Myong aeyoung. (2023). Article The COVID-19 Pandemic Response and Its Impact on Post-Corona Health Emergency and Disaster Risk Management in Republic of Korea. *Sustainability*.

Jokhdar.,Alserehi.,A,Algwizani.,J,Alowais.,A,Alahmari.,Y,Alsofayan.,A,Khan khan el. (2021). COVID19 in Saudi Arabia: the national health response. *Eastern Mediterranean Health Journal*, pages 27(11) 1114 -1124.

Marie-Helen Maras Lauren R. Shapiro. (2021). *Encyclopedia of Security and Emergency Management.* Springer.

N., Lucet, J. C., Bendjelloul, G., Bouadma, L., Gerard, S., Choquet, C., ... & Lescure, F. X Peiffer-Smadja. (2020). Challenges and issues about organizing a hospital to respond to the COVID-19 outbreak: experience from a French reference centre. *Clinical Microbiology and Infection، 26(6)* , pages 669-672.

Q., Luo, D., Haase, J. E., Guo, Q., Wang, X. Q., Liu, S., ... & Yang, B. X Liu. (no date).

Q., Luo, D., Haase, J. E., Guo, Q., Wang, X. Q., Liu, S., ... & Yang, B. X Liu. (no date). The experiences of health-care providers during the COVID-19 crisis in China: a qualitative study. The Lancet Global Health,. *The Lancet Global Health*, 8(6), e790-e798. .

S., Dua, D., Sahoo, S., Mehra, A., Nehra, R., & Chakrabarti, S Grover. (no date).

S., Dua, D., Sahoo, S., Mehra, A., Nehra, R., & Chakrabarti, S. Grover. (2020). Why all COVID-19 hospitals should have mental health professionals: The importance of mental health in a worldwide crisis. Page 51, 102147. nih.gov.

Veena, Sharma, Ashu, Yaduvanshi, Deepak Vohra. (25 7, 2023). Manipal Hospital, Jaipur: building resilience amid healthcare crisis. Pages 22-1.

Crisis management in hospitals. (2022).

Amal Mansour Hassan Shahla Ali Omran Ismail. (September 30, 2022). The impact of strategic leadership on the effectiveness of crisis management. *Crisis and Risk Management*, pp. 01-24.

Bilal Masrhad, Azzedine Boualaka. (December, 2021). The role of official communication in activating the stages of health crisis management: A case study of the public hospital institution in the state of Medea. *Journal of Economic Fields*.

Ramadan Aqila Ali al-Mazoughi. (2017). The role of training in achieving crisis management efficiency in Libyan hospitals. *Scientific Journal of Business and Environmental Studies*, pages 238-265.

Saif Abdullah Al-Shehhi. (2018). *Crisis Management Strategies.* Arab Renaissance House for Publishing and Distribution.

Sadiq, Sheba. (5 2, 2021). The role of strategic emergency planning in managing the COVID-19 crisis in Qatar. *Academic Journal of Research and Publishing*, pp. 202-184.

Salah Ali Jadian and Ibrahim Mohammed Ahmed Al-Bataina Al-Rashidi. (2019). *The role of human competencies in crisis management in Kuwaiti governmental hospitals.* Retrieved from the system: http///search.mandumah.com/Record/948883

Organization for Economic Cooperation and Development. (2020). *Responding to the coronavirus crisis in the Middle East and North Africa.* Retrieved from Organization for Economic Cooperation and Development: df.Arabic-countries-MENA-response-Crisis-19-COVID/competitiveness/mena/org.oecd.www://h

Nisreen Faleh Hassan. (2021 AD). The role of the World Health Organization in dealing with the Corona pandemic - a study in light of international positions. *lark.uowasit.edu.iq*.