

Midocean University

College of Management

Department of Risk management



Research Proposal:
**Impact of Risk Management in Healthcare within Emergency Medical Services in the
Kingdom of Saudi Arabia**

Prepared by:

Fayez alanazi

232001892

Abdulaziz alanazi

232001894

Adel alanazi

232001618

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Abstract

Background: Efficient risk management within Emergency Medical Services (EMS) is crucial for ensuring patient safety, enhancing service quality, and aligning with the national healthcare goals of Saudi Arabia.

Objectives: This study aims to evaluate the impact of current risk management practices within the EMS system in KSA, identifying the key risk areas and assessing the effectiveness of these practices in improving operational efficiency and patient care outcomes.

Methods: A quantitative research design will be employed, focusing on healthcare providers within KSA's EMS system. Participants will include paramedics, emergency medical technicians (EMTs), EMS nurses, and administrators with at least two years of experience. Data will be collected via a structured Likert scale questionnaire. Descriptive and inferential statistical analyses will be conducted using SPSS to analyze responses, with emphasis on correlations between risk management and EMS healthcare services.

Expected Results: It is expecting that the study will reveal a positive correlation between effective risk management practices and enhanced quality of healthcare services in EMS.

Conclusion: The findings are likely to underscore the importance of robust risk management in EMS for patient safety and system efficiency. Recommendations will address the identified gaps, potentially influencing policy and practice to elevate the standard of emergency medical care in KSA.

Keywords: Risk Management, Emergency Medical Services, Saudi Arabia, Healthcare.

1.0 INTRODUCTION

Emergency medical services (EMS) are considered high-risk work settings due to the unique working conditions. The intricate factors in a work environment, such as dependency, time pressure, and lack of transparency, hinder quick and thorough cognitive processing of emergency circumstances (Zimmer et al., 2010). This human element contradicts patient safety. Reason's Swiss Cheese model suggests that each dangerous deed or hidden error contributes to the eventual downfall of a labor system. Poor communication can greatly hinder group effectiveness and promote risky behaviors. Both variables must be recognized in risk management to ensure patient safety (Leonard et al., 2004).

Risk management is crucial for the success of industries such as healthcare, and project management since it may help save time, cut costs, and prevent failures before they happen (Hillson & Murray-Webster, 2007). Extensive study has been conducted on the advantages of risk management. It identifies beneficial alternative courses of action, boosts confidence in accomplishing project objectives, improves odds of success, and minimizes uncertainties and duplication of work (Bannerman, 2008). An efficient risk management program in the health sector, or any other field, enhances comprehension of the risks associated with every project and facilitates the making of well-informed decisions. Healthcare professionals have acknowledged the need of risk management due to the rising frequency and seriousness of medical mistakes caused by interactions with medical equipment (Al-Barnawi et al., 2019).

Risk management in Emergency Medical Services (EMS) in the Kingdom of Saudi Arabia (KSA) is crucial due to the significant role EMS plays in the healthcare system. Risk management in this context is identifying, assessing, and prioritizing risks, then efficiently allocating resources to reduce, monitor, and control the likelihood or effect of adverse occurrences in the emergency medical field.

The influence of risk management on healthcare, especially in EMS in the Kingdom of Saudi Arabia, is substantial and has several aspects. It promotes patient safety and well-being while also improving the operational efficiency of emergency medical services. Continual attempts to enhance risk management strategies are crucial for maintaining advancements in emergency care quality and addressing the evolving healthcare requirements of the community.

Background of the problem

Risk management in Emergency Medical Services (EMS) in the Kingdom of Saudi Arabia (KSA) is intricate because of demographic, geographical, technical, and regulatory considerations. The varied geographical area, including urban, rural, and desert locations, presents logistical and operational problems for Emergency Medical Services (EMS), such as accessibility, response times, and providing timely care. For example, the annual Hajj pilgrimage is a major event that raises the need for services, requiring strong risk management measures. Efficient EMS operations rely on technological integration and standards, although issues like as standardization, interoperability, and training can create dangers. Adapting to changing requirements necessitates ongoing training and quality enhancement efforts. The Saudi Vision 2030 aspires to change healthcare by focusing on quality, efficiency, and patient-centered treatment. It is essential to address these difficulties by implementing appropriate risk management strategies to enhance EMS and guarantee the safety and well-being of residents and visitors.

Problem statement

The Emergency Medical Services (EMS) in Saudi Arabia has obstacles hindering their performance. These include slow response times and poor care quality in some areas. Adopting new technology, following international standards, and aligning with Saudi Vision 2030 add to the difficulties. Effective risk management is essential to overcome these challenges and improve EMS service quality, efficiency, and resilience. This will ensure public safety and align with the national healthcare goals. However, there is limited research on this topic in Saudi Arabia.

Objectives of the study

Purpose of the Study

To evaluate the impact of current risk management practices within the EMS system in the KSA.

Objectives of the Study

1. To Assess Current Risk Management Practices in KSA.
2. To Identify the key risk areas specific to Saudi Arabia.

The importance of the study

Studying the influence of risk management in Emergency Medical Services (EMS) in the Kingdom of Saudi Arabia (KSA) is significance for enhancing patient safety, system efficiency, and responsiveness. It can help develop ways to decrease medical mistakes, better

patient outcomes, and improve the quality of emergency treatment. The study may encourage ongoing development and creativity by comparing itself to global standards and adding to the understanding of EMS risk management.

Research Questions

1. What is the impact of current risk management practices within the EMS system in the KSA?
2. What are the current risk management practices within the EMS system in the KSA?
2. What are the key risk areas specific to the EMS system in the KSA?

Research Hypothesis

H0: Risk management have no impact on the operational effectiveness and patient care outcomes within the EMS system in the KSA.

H1: Risk management positively impact the operational effectiveness and patient care outcomes within the EMS system in the KSA.

Theoretical model

Components of the theoretical model:

1. Core Focus: Risk Management in EMS involves methods, policies, and procedures in Emergency Medical Services to identify, analyze, manage, and monitor possible risks affecting healthcare service delivery.
2. Primary Outcome: Quality of healthcare services in Emergency Medical Services (EMS). This outcome assesses the efficacy, efficiency, safety, and patient satisfaction of the healthcare services offered by EMS. The immediate result of using efficient risk management strategies.

Expected Relationship:

The model suggests a clear correlation between improved risk management strategies in EMS and enhancements in healthcare service quality. This encompasses factors including decreased reaction times, enhanced patient results, and increased patient satisfaction.

The theoretical model proposes that Risk Management in EMS serves as the fundamental strategy for enhancing healthcare services in emergency medical settings in the Kingdom of Saudi Arabia. Efficient risk management is believed to immediately result in improved Healthcare Service Quality by accurately identifying, evaluating, and reducing risks. This guarantees that EMS operations are safe, efficient, and in accordance with best standards in patient care.

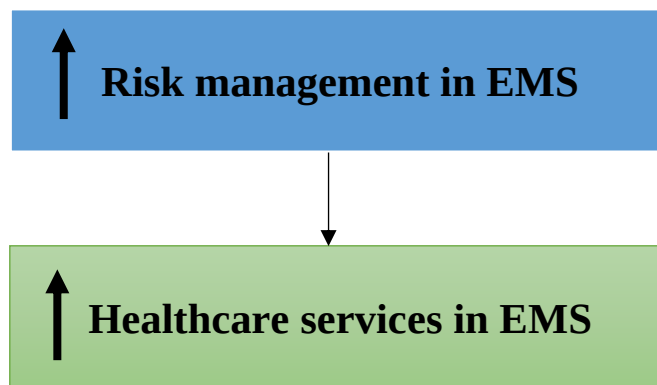


Figure1. Theoretical model diagram

2.0 LITERATURE REVIEW

2.1. Introduction

In the rapid and critical healthcare setting, it is crucial to prioritize the safety and quality of healthcare by implementing effective risk management strategies. In Emergency Medical Services (EMS), quick reaction and handling of unexpected situations significantly affect patient results.

2.2. Literature Review

2.2.1. Importance of Risk Management in Healthcare

Effective risk management is essential for enhancing patient safety and the quality of care in emergency medical services. Implementing successful tactics aids in recognizing, evaluating, and minimizing possible risks, resulting in less medical mistakes and adverse occurrences.

Almaki et al. (2011) highlighted the changes in the health care system in Saudi Arabia, pointing out concerns such as rising demand, prices, shortages, unequal access, quality issues, chronic illnesses, and research requirements. The authors suggested some possible solutions include decentralizing the Ministry of Health, increasing the involvement of the business sector, improving primary health care services, upgrading human resources, adopting the national health information system, and bolstering health research and evidence-based practice.

According to Alahmadi (2010) incorporating risk management practices in EMS can effectively decrease legal and financial risks related to healthcare delivery. This is especially important due to the rising healthcare litigation and the necessity for healthcare providers to comply with national and international safety standards.

2.2.2. Risk Management in Saudi Arabian EMS

Alghamdi (2016) mentioned that the Saudi Arabian healthcare system has experienced significant changes focused on enhancing the quality and safety of healthcare services, particularly Emergency Medical Services (EMS). Policies and guidelines emphasizing risk management in healthcare have been implemented by the Ministry of Health and other regulatory authorities.

According to Almalki et al. (2011) the Emergency Medical Services (EMS) in Saudi Arabia encounter issues such as absence of established procedures, inconsistent service quality, and insufficient research on risk management methods in EMS environments. Nevertheless, these constraints offer possibilities to establish detailed risk management systems customized for the Saudi environment.

2.3. Research Gap Identification

- Lack empirical research exists to measure the effects of certain risk management techniques on patient outcomes and service efficiency in the Saudi Arabian EMS setting.
- lack of studies in explore the impact of cultural and organizational variables in Saudi Arabia on risk management strategies and the implementation of international best practices in EMS.
- The impact of technology and innovation on improving risk management in EMS has not been thoroughly investigated in the Saudi context.

3.0 RESEARCH METHODOLOGY

3.1. Research Design

Quantitative research design.

3.2. Search Strategy

For the theoretical framework, this study will rely on an in-depth literature review to explore the impact of risk management in healthcare within Emergency Medical Services (EMS) in Saudi Arabia. First, break down the study topic into essential terms like risk management, healthcare, EMS, and Saudi Arabia. Key topics encompass risk assessment, risk reduction, safety management, ambulance services, pre-hospital care, and emergency treatment. Secondly, we will select appropriate sources, including databases like PubMed, MEDLINE, Google Scholar, local Saudi Arabian medical and health publications or databases, as well as government and health ministry papers from Saudi Arabia, that are likely to include relevant material. Finally, the literature will be screened and chosen according to certain

criteria, while maintaining thorough documentation of the search process for the sake of repeatability and legitimacy.

3.3. Inclusion Criteria

1. Health care providers: Paramedics, emergency medical technicians (EMTs), EMS nurses, EMS administrators, and other healthcare professionals who play a role in emergency medical services.
2. The participants should be work within the Kingdom of Saudi Arabia.
3. The minimum level of experience is at least two year working in EMS
4. The participants who are willing to provide informed consent and agree with the study's procedures.

3.4. Population of the study

The study population will be the healthcare providers such as paramedics, emergency medical technicians (EMTs), EMS nurses, and EMS administrators, alongside other healthcare professionals directly involved in EMS.

3.5. Sample Characteristic

- **Professional Role:** breakdown of the participants by their specific roles within the EMS system, such as the proportion of paramedics, emergency medical technicians (EMTs), EMS nurses, and EMS administrators.
- **Years of Experience:** the average years of experience in EMS among the participants.
- **Geographical Location:** Distribution of participants across different regions of Saudi Arabia.
- **Gender and Age:** the gender and age range of the participants.
- **Educational level:** Information on the highest level of education achieved by participants and any specific training in EMS or risk management
- **The type of EMS organization:** Government or private

3.6. Data collection tools

The data collecting tool will be a structured questionnaire designed by the researcher based on the literature review. Participants are required to evaluate their degree of agreement with a set of items using a 5-point scale ranging from "Strongly Disagree" to "Strongly Agree," providing detailed insights into their opinions, perspectives, and experiences. The questionnaire will collect demographic and professional background details including age, gender, role in EMS, years of experience, and type of EMS service to aid in thorough data analysis and interpretation. Prior to distribution, the questionnaire will be pilot tested with a small group of

EMS professionals to ensure clarity and relevance. Distribution methods will be customized to effectively reach the target population, while ensuring ethical considerations such as informed consent and confidentiality are carefully followed.

3.7. Data analysis

The data will be analyzed using statistical software (SPSS) by using descriptive statistics, which include frequency distributions, mean, median, and mode scores. Inferential statistics, such correlation analysis, regression analysis, and maybe factor analysis, will investigate the connections between risk management and their impact on EMS healthcare services. T-tests or ANOVA will be employed to compare answers among various demographic and professional categories. Tables or graphs will be used to clearly illustrate the results.

4.0 Expected Results

This study expects to find a positive impact of risk management on improve the healthcare within Emergency Medical Services in the Kingdom of Saudi Arabia, such as response times and patient safety measures. Furthermore, the study is expecting to highlight particular hurdles to successful risk management, such as resource constraints and the need for more extensive training programs. Overall, these findings are expecting to highlight significant areas for improvement as well as opportunities for policy and practice changes to improve the quality and safety of EMS services in Saudi Arabia.

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APPENDIXES

APPENDIX 1: QUESTIONNAIRE QUESTIONS

Statement	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
1. Saudi Arabia has a well-established emergency medical services (EMS) system.					
2. The key challenges and risks faced by the Saudi EMS system are well-recognized.					
3. Existing policies and regulations adequately govern risk management in the Saudi EMS system.					
4. A variety of risk management practices are extensively employed in the Saudi EMS system.					
5. Risk management practices are effectively implemented and monitored in the Saudi EMS system.					
6. The benefits and challenges associated with different risk management practices are widely acknowledged.					
7. Risk management practices significantly impact the key performance indicators (KPIs) of the Saudi EMS system.					
8. There is substantial evidence on the impact of risk management on response times, patient safety, staff well-being, and resource utilization.					
9. Studies have extensively explored the cost-effectiveness of different risk management approaches in the Saudi EMS system.					
10. Different stakeholders perceive the role and effectiveness of risk management in the Saudi EMS positively.					
11. Barriers and facilitators to implementing risk management practices are clearly identified from various stakeholder perspectives.					
12. There is a critical need for additional information and improvement in risk management practices in the Saudi EMS.					