UNIVERSITI PUTRA MALAYSIA

EXPLORING PATIENT SAFETY CULTURE ASSESSMENT AMONG HEALTHCARE PROFESSIONALS IN HOSPITALS OF RIYADH, SAUDI ARABIA

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FPSK(p) 2022 11

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By

ALHARBI MOHAMMED FAYEZ J

Thesis Submitted to the School of Graduate Studies, Universiti Putra Malaysia, in Fulfilment of the Requirements for the Degree of Doctor of Philosophy

November 2021

Abstract of thesis presented to the Senate of Universiti Putra Malaysia in fulfilment of the requirement for the degree of Doctor of Philosophy

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Chairman : Professor Soh Kim Lam, PhD
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Patient safety is an essential and vital component of healthcare quality. Despite constant vigilance, healthcare providers face many challenges in today's healthcare environment in trying to keep patients safe. More people have died from medical errors than from automobile accidents, breast cancer, or acquired immunodeficiency syndrome (AIDS). Therefore, patient safety problems have become a major concern for healthcare organizations around the world in both rich and poor countries. Medical errors are becoming one of the leading causes of death as a result of the lack of validated tools that are suitable for assessing patient safety culture in Saudi hospitals. This is an importantissue to investigate because doctors and nurses have been shown to have discrepant safety attitudes. It is on the basis of these concerns that this study intends to explore the extent to which patient safety culture practices are followed in Saudi Arabia hospitals. The study also probes the possible causes of the medical errors. The study goes further to assess- based on the medical staff standpoint and the international healthcare standards if the current measures are valid and reliable for use with the workforce in Saudi Arabian hospitals. Methodologically, the study employed qualitative method based on case study approach. The participants of the study that consisted of eight doctors and eight nurses from emergency departments of four selected hospitals in Riyadh, Saudi Arabia were selected through purposive sampling. Datawere collected from face-to-face interviews which lasted for 60 minutes at the respectivehospitals in doctor's rooms and staff lounges during break time of each participant. Theywere interviewed about their involvements in the patient safety culture by their respective hospitals. The interview was conducted using the interview guide set by the researcher. Secondary sources (document analysis) were also used as a data source. NVIVO version12 was used to manage, shape, and analyze the interview data. The study reveals that the major issues regarding patient safety are compliance based on awareness among medical personnel and work culture in the hospital. The issues also include validity and reliability of tool documentation and traceability, adequacy of patient safety measures, number of patients' complaints, and the adaptation of safety measure by medical personnel. The study further reveals that the

causes of medical errors are negligence and lack of discipline by medical staff, and lack of communication/ miscommunication between medical staff and patient. The study further elucidates that element that can help eliminate and mitigate errors are clear hospital policy and awareness training to medical staff. Based on the results, it is recommended that skilled health personnel should be given priority in being taken in as part of the medical staff. Furthermore, communication between the patients and medical staff should be enhanced. Finally, awareness among the medical staff should be enhanced to improve patient safety.

Keywords; patient safety, healthcare, medical malpractice, organization, hospital

Abstrak tesis yang dikemukakan kepada Senat Universiti Putra Malaysia sebagai memenuhi keperluan untuk ijazah Doktor Falsafah

MENGAJAR PENILAIAN BUDAYA KESELAMATAN PESAKIT DI ATAS PROFESIONAL PENJAGAAN KESIHATAN DI HOSPITAL RIYADH, SAUDI ARABIA

Oleh

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Keselamatan pesakit adalah komponen penting dan utama dalam kualiti penjagaan kesihatan. Walaupun selalu berwaspada, penyedia penjagaan kesihatan menghadapi banyak cabaran berhubung dengan aspek perawatan kesihatan dalam berusaha memastikan keselamatan pesakit. Lebih banyak kematian akibat kesilapan perubatan daripada kemalangan kenderaan, barah payudara, atau penyakit Acquired Immuno-Deficiency Syndrome (AIDS). Oleh itu, masalah keselamatan pesakit mulai menjadi perhatian utama di kalangan organisasi kesihatan di seluruh dunia iaitu di kedua-dua negara kaya dan miskin. Justeru, kesilapan perubatan menjadi salah satu penyebab utama kematian disebabkan kekurangan peralatan yang disahkan sesuai untuk menilai aspek keselamatan pesakit di hospital Saudi. Ini adalah masalah penting untuk diselidiki berikutan penyelidikan sebelum ini mendapati doktor dan jururawat mempunyai sikap yang berbeza mengenai aspek keselamatan. Berdasarkan keprihatinan ini, kajian ini telah meneroka sejauh mana ukuran aspek keselamatan pesakit di hospital di Arab Saudi.

Kajian ini juga turut menyiasat kemungkinan penyebab kepada kesilapan perubatan. Kajian ini juga mengkaji lebih mendalam dari sudut pandangan kakitangan perubatan dan standard kesihatan antarabangsa – sekiranya ukuran pada masakini ialah peralatan yang disahkan sesuai dan boleh dipercayai untuk kegunaan tenaga kerja hospital di Arab Saudi. Secara metodologi, penyelidikan lepas menggunakan kaedah kualitatif berdasarkan pendekatan kajian kes. Peserta penyelidikan dipilih melalui persampelan bertujuan. Peserta dalam kajian ini adalah doktor dan jururawat di Hospital Arab Saudi yang terpilih. Saiz sampel 8 doktor dan 8 jururawat di jabatan kecemasan di empat hospital di Riyadh digunakan untuk kajian ini. Data dikumpulkan dari temu bual secara bersemuka yang berlangsung selama 60 minit di hospital masing-masing di bilik doktor dan ruang rehat kakitangan pada waktu rehat setiap peserta; mereka ditemu bual mengenai penglibatan mereka dalam budaya keselamatan pesakit oleh hospital masing-masing. Temu bual dibimbing menggunakan panduan temu bual yang telah ditetapkan

oleh pengkaji. Sumber sekunder (analisis dokumen) juga digunakan sebagai sumber data. NVIVO versi 12 digunakan untuk mengurus, membentuk, dan menganalisis data temu bual. Ia juga digunakan untuk pengekodan. Kajian ini mendedahkan isu utama berkenaan dengan keselamatan pesakit adalah terhadap aspek pematuhan yang berasaskan kepada kesedaran di kalangan pegawai perubatan dan budaya kerja di hospital. Kesahan dan kebolehpercayaan mengenai dokumentasi peralatan dan kebolehkesanan. Kecukupan pengukur keselamatan pesakit iaitu tiada aduan pesakit, adaptasi kepada pengukur keselamatan oleh pegawai perubatan. Kajian ini mendedahkan bahawa penyebab kesilapan perubatan adalah disebabkan kecuaian dan kurangnya disiplin oleh kakitangan perubatan, kurangnya komunikasi / salahfaham antara kakitangan perubatan dan pesakit. Kajian ini memberi lebih pemahaman bahawa unsur-unsur yang dapat membantu menghilangkan dan mengurangkan kesilapan adalah polisi hospital dan latihan kesedaran yang jelas kepada kakitangan perubatan. Kajian ini mengesyorkan agar kemahiran kesihatan diri harus diberi keutamaan. Komunikasi antara pesakit dan kakitangan perubatan harus ditingkatkan. Akhirnya, kesedaran peribadi di kalangan pegawai perubatan juga harus ditingkatkan untuk meningkatkan keselamatan pesakit.

Kata kunci; keselamatan pesakit, rawatan kesihatan, kesalahan perubatan, organisasi, hospital

ACKNOWLEDGEMENTS

All praise and glory be to the Almighty Allah who has given me the opportunity to pursue my professional career to the highest academic level. I would like to express my sincerest gratitude and appreciation to my lovely wife, Manal, for her patience, support, and encouragement towards the successful completion of this program. I am greatly indebted to my supervisor, Prof. Madya Dr. Soh Kim Lam and the committee members, Prof. Dr. Ismi Arif Ismail and Dr Mohd Murshid Arshad for their insightful and constructive guidance and criticism to the completion of this study.

This thesis was submitted to the Senate of the Universiti Putra Malaysia and has been accepted as fulfilment of the requirement for the degree of Doctor of Philosophy. The members of the Supervisory Committee were as follows:

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This is to confirm that:

- the research conducted and the writing of this thesis was under our supervision;
- supervision responsibilities as stated in the Universiti Putra Malaysia (Graduate Studies) Rules 2003 (Revision 2012-2013) are adhered to.

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TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF APPENDICES

LIST OF ABBREVIATIONS

AHRQ	Agency for Healthcare Research and Quality
AIDS	Acquired immunodeficiency syndrome
BMA	British Medical Association
CoP	Community of practice
CRM	Crew resource management
EWRs	Executive Walk Rounds
HSOPSC	Hospital Survey on Patient Safety Culture
ICU	Intensive Care Units
IOM	Institute of Medicine
IPA	Interpretative Phenomenological Analysis
MRSA	Methicillin-Resistant
NPSA	National Patient Safety Agency
NQF	National Quality Forum
OR	Operating Room
PRISMA	Systematic Reviews and Meta-Analyses
R&D	Research and development
WHO	World Health Organization

CHAPTER 1

INTRODUCTION

1.1 Introduction

Patient safety is a critical and important part of quality healthcare. Even through close monitoring, healthcare providers encounter numerous obstacles when trying to keep patients safe in today's healthcare environment. The problem of patient safety is now one of the healthcare system's most important problems. Newspaper articles, TV and radio interviews, and scientific literature papers keep patient safety issues at the center of attention almost every week. One of the main causes for loss of life in Saudi Arabian hospitals is medical errors (Alkhenizan & Shafiq, 2018; Alhabshan, 2018).

According to the Institute of Medicine, more individuals have lost their lives as a result of medical errors than from car accidents, breast cancer, or acquired immunodeficiency syndrome (AIDS) (Sohn, 2013). Approximately 98,000 Americans are killed from medical errors each year. Medical errors have been predicted to cause an excess of $29 billion in healthcare expenditure and a loss of productivity each year (IOM, 1999). Patient safety incidents have resulted in 238,337 potentially preventable deaths, according to Health Grades Inc., and cost $8.8 billion to the federal Medicare system from 2004 to 2006. Furthermore, as per clinical excellence, if the quality of care in all hospitals correlates to that of the highest-rated hospitals, 152,666 people would be alive, and 11,772 top issues could have been prevented during 2005–2007. Medical personnel embody the early warning mechanism for complications and treatment issues and are in the right place to undertake measures that mitigate adverse outcomes for patients (Ye et al., 2019; Aiken, Clarke, Sloane, Sochalski, & Silber, 2002).

The concept of error is classified as commissioning measure (performing any wrongdoings) or neglect (failure to do the right thing) that causes unexpected results (Ukrainski, 2016; Wachter, 2009). The Institute of Medicine describes medical errors as the failure to carry out a medical procedure as preconceived or the utilization of an incorrect plan to accomplish a medical objective (Oyebode, 2013). Many people seem to believe medical errors typically include medications; for example, a patient receiving incorrect prescription or medication, or poorly handled operations, such as amputation of the wrong leg. Nonetheless, there are many forms of medical errors, such as diagnosis error, medication error, product error, equipment failure, and preventive error (Sohn, 2013).

Patient safety is characterized in several manners. The IOM report, To Err is Human (1999), presented the most commonly recognized concept of patient safety, stipulating accidental injury protection. Maintaining patient safety includes the implementation of operating systems and procedures that reduce the risk of errors and increase the

probability of intercepting it when it occurs. The conceptualization of patient safety is avoidance, protection, and enhancement of adverse effects or accidents arising from healthcare processes (WHO, 2019; Cooper, Gaba, Liang, Wood, & Blum, 2000). In addition, patient safety is characterized as the prevention and avoidance of patient harm or adverse outcomes arising from the provision of healthcare services (Rodziewicz & Hipskind, 2020; Batcheller, Burkman, Armstrong, Chappell, & Carelock, 2004).

Patient safety and the effort to build safety cultures to ensure patients are free from injury have become the key in enhancing the degree of the healthcare system. Creating and managing safety cultures are major desires of the new movement for patient safety (IOM, 2001), and maintaining a solid security culture is important for providing safe, cost-effective, and high-quality patient care (Farokhzadian, 2018; Weingart, Farbstein, Davis & Phillips, 2004).

The cardinal shift in culture required in organizations to promote patient safety requires an understanding of the recent institutional cultures. The Nuclear Installations Security Advisory Committee (1993) established the most generally accepted concept of a culture of health. The culture of safety is the outcome of person and community values, attitudes, expectations, skills, and patterns of behavior that decide an organization's cooperation to health and safety administration and its style and skills.

Any company with a secure safety culture has a communication orientation that is focused on mutual trust with a common understanding of the value of safety and faith in the effectiveness of preventative measures. The atmosphere of health, while sometimes used synonymously with culture, is more of a reflection of the society and focuses on member attitudes. The safety environment could be an indicator of the safety culture arising from the views and behaviors of the institution members at one time (Hedayat & Shahniani, 2017; Flin, Mearns, O'Connor & Bryden, 2000). To foster and maintain a safety culture in a healthcare institution, analysts emphasizethe necessity to recognize both people and system contributions to error situations (Rosen et al., 2018; Weingart et al., 2004). The ability to preserve patient and suppliersafety in healthcare systems is related to the actions of healthcare professionals in the implementation of patient care activities and to environments of the healthcare system that provide the framework for the provision of patient care (Kieft et al., 2014; Jones & Mark, 2005; Leape & Berwick, 2005).

1.1.1 Patient Safety and Patient Safety Culture

Healthcare institutions are associations that depend on a culture established on values, frames of mind, aptitudes, and benchmarks of individual and gathering conduct, which characterize quality in healthcare. Patient safety culture is a piece of the hierarchical propensities for clinical institutions, and an appraisal of patient safety culture makes it conceivable to get information on the variables that are related to the experts' everyday practice and their discernments, alongside the qualities and shortcomings of patients' safety. Such appraisals additionally make it conceivable to recognize the areas and

procedures that produce risks. Knowledge of the shortcomings of patient safety culture makes it possible to set up mediations and upgrades for patient care, in this way changing the experts' conduct (Alhabshan, 2018).

According to Alahmadi (2010), patient safety is a major concern globally and one of the most essential healthcare quality domains. Medical error is a significant concern for patient safety and triggers a rise in healthcare costs due to death, morbidity, or extended hospital stay. Patient safety stresses revealing, Examination, and aversion of therapeutic mistakes that regularly lead to adverse health events (Rodziewicz & Hipskind, 2020).

Patient safety is defined as "the aversion of mischief brought about by blunders of commission, also oversight", while safety culture is defined as the product of human and collective esteems, mentalities, experiences, skills, and examples of behavior that decide the contribution to, and the style and ability of, the health and safety of the association's executives. To guarantee patient safety, healthcare frameworks ought to foster a situation that is free from unplanned damage through setting up operational frameworks. Furthermore, systems that limit the opportunity for mistakes also increase the probability of capturing them before they happen (Desouky et al., 2019).

Fluctuating rates of therapeutic mix-ups have been detailed in the literature. For instance, an examination directed by Sorensen et al. (2013) in Australia detailed that 10%–18% of hospitalized patients were harmed by medicinal mistakes. Another investigation led by Adams and Boscarino (2011) uncovered that one-fifth of the individuals of New York in the United States have experienced medicinal mix-ups, while another report from the United States demonstrated that 35%–42% of patients have experienced restorative blunders. By and large, one out of ten patients are harmedin developed nations, which have adequate assets and current innovation. Interestingly, it stays hazy what number of patients comes to hurt in the healthcare frameworks of low salary nations which have less innovation, inadequately prepared staff, and unseemly framework. In Palestine, an overview utilizing a worldwide triggerapparatus found that one out of seven patients experience the ill effects of damage and59.3% of these had been preventable (Abu-El-Noor et al., 2019).

The mentality of healthcare experts to unfriendly occasions is one of the most significant parts of safety culture. It is all around perceived that adequate preparation and instruction can improve patient safety and eventually, patient outcome. A few practices, conditions, or circumstances can increase patient damage. Tending to these variables by altering conduct, as well as frameworks, can make the healthcare condition more secure for patients (Alzahrani et al., 2018).

In this critical field, WHO (2017) has recently developed a multi-professional program for use in healthcare education. Patient health education has been incorporated in many postgraduate curricula around the world. To establish successful safety culture training programs, it is important that healthcare organizations examine the existing culture of

patient safety and the attitudes of their workers to define priority areas.

As indicated by Mitchell (2008), patient safety is the anticipation of antagonistic occasions to patients with weight on the arrangement of care conveyance that keeps mistakes and gaining from blunders that happen inside the structure and of a safety culture including patients, healthcare laborers, and associations. In patient consideration, it is pivotal to survey patient safety advisers to distinguish chances for development and to make a beginning stage for assessing future improvement endeavors. To accomplish this, healthcare suppliers ought to coordinate quality and safety into their association to ensure legitimate clinical and managerial practices (European commission, 2019).

Patient safety is a significant segment in the way of life of any healthcare association, and appraisal of the healthcare association's patient safety culture will be the initial step for building up a solid safety culture (Ali et al., 2018; Hellings, Schrooten, Klazinga, & Vleugels, 2007). This evaluation will improve the nature of healthcare by recognizing zones influencing patient safety, and without this appraisal, healthcare costs and sudden consideration for new types of dangers faced by the patients will increase.

To accomplish a fruitful culture of patient safety in any healthcare association, the qualities and convictions about what is significant in an association ought to be determined. In addition, official responsibility, efficient correspondence, motivated staff, and shared trust by every authoritative part ought to be available in making a positive patient safety atmosphere in the association (Farokhzadian et al., 2018; Hellings, Schrooten, Klazinga, & Vleugels, 2007).

Efficient clinical worker correspondence is indispensable to accomplish patient safety, as correspondence helps in basic leadership, treatment arrangement, and taking care of issues identified with consideration regarding patient safety (Kieft et al., 2014; Walston, Al-Omar, & Al-Mutari, 2010). The same study also indicated that patient safety will be accomplished when all strategies for correspondence are appropriately used to make a patient safety atmosphere for staff and patients.

Measurements of safety culture are identified with several healthcare outcomes, for instance, medicinal blunders, fostering the healing of wounds, urinary tract infections, patient fulfillment, patients' view of attendant's responsiveness, and medical attendant fulfillment. Currently, some global accreditation associations require deciding the patient safety culture to assess the healthcare suppliers' impression of cooperation, moves made by the board and administration to help and embrace patient safety, and recurrence of occasion detailing (Halaj, 2017).

Better recognition about patient safety has been related with higher scores on cooperation inside clinical units, hierarchical learning and consistent improvement, supervisors'desires and activities committed to the advancement of safety, non-

reformatory reaction to mistake, the support of emergency clinics' executives for patient safety, and medical clinic handoffs and advances. To date, the Hospital Survey on Patient Safety Culture (HSOPSC) is a broadly utilized apparatus for evaluation of patient safety culture. Various examinations utilizing the HSOPSC instrument have been done to survey patient safety culture in healthcare associations in Saudi Arabia and other countries (Alshammari, 2019; Waterson et al., 2019).

Equally relevant for determining their role in medical errors are other aspects of processes such as coordination, personnel, organizational learning, and oversight. A longitudinal analysis of patient safety performed in several developed countries in the Near East and Africa examined the extent of health mistake occurrence in hospitalized patients. Contrary to the average percentage seen in previous research, the analysis found a very high percentage of protectorate error. The researchers proposed that former research may have misunderstood the cause and effect, and have therefore misidentified such errors (Wilson et al., 2012). It is clear that patient safety in developed countries is much more fragile and prone to misinterpretation, and therefore, an investigation on healthcare professionals' understanding and knowledge of different dimensions of patient safety is necessary. Patient safety practices are defined as practices that minimize the risk of exposure to medical care-related adverse events across an extent of diagnoses or conditions (Mitchell, 2008). There are a multitude of reasons to encourage explicit knowledge about patient safety, most importantly the prevention of errors and improved quality of care for the patient. This description is clear but somewhat incomplete, since too many methods have not been well researched in terms of their efficacy in preventing or alleviating harm. Measures found to have adequate evidence to include health practices in the class of patient are as follows:

1. Proper utilization of prophylaxis to avoid venous thromboembolism in at-riskpatients.
2. Use of perioperative beta-blockers in appropriate patients to prevent perioperative morbidity and mortality.
3. Use of maximum sterile barriers when central intravenous catheters are placed to avoid infections.
4. Usage of sufficient antibiotic prophylaxis in surgical patients to avoidpostoperative infections.
5. Requesting that patients remember and reaffirm what they were told tovalidate their understanding during the informed-consent process.
6. Continuous suction of subglottic secretions to avoid pneumonia associated with a ventilator.
7. Utilization of bedding fabrics to relieve pressure and avoid ulcers.
8. Utilization of actual time ultrasonic guidance during installation of the central line to avoid complications.
9. Patient warfarin self-management (Coumadin ®) to achieve adequate outpatient anticoagulation and to avoid complications.
10. Reasonable dietary supply, with special focus on early enteral feeding

incritically ill patients and surgical patients to avoid complications.

11. Utilization of central venous catheters impregnated with antibiotics to avoidcatheter-related infections.

Several patient safety activities, including simulator usage, barcoding, electronic physician appointment scheduling and crew management, have been described as possible ways to avoid patient safety accidents and enhance health care processes; research has been done in these areas but there are still countless opportunities for further analysis. The later chapters of this handbook summarize the relevant facts for nursing practice up to now. The National Quality Forum, in its study to standardize a Patient Safety Taxonomy, has attempted to add clarity and concreteness to the different definitions. This model and categorization describe injury as the effect and extent of a failed treatment procedure: temporary or permanent loss of functions or structure of the physical or psychological body. This classification applies to the negative consequences of lack of patient protection; it does not provide a positive classification of what promotes health and prevents harm. The roots of the patient safety issue are categorized in terms of sort (error), communication (failures between patient or patient proxy and practitioners, practitioners and non-medical personnel, or among practitioners), patient management (improper delegation, failure to monitor, misrepresentation or misuse of resources), and clinical performance (before, during, and after intervention).

Domain-related errors and harm forms are further listed, including where it happened within the range of healthcare services and system. The fundamental causes of injury are described as follows:

1. Residual failure: Distant from the physician and involves decisions that impact institutional policies, procedures, and resource allocation decisions that affect the organizational policies, procedures, and allocation of resources;
2. Active failure: Direct contact with the patient;
3. Organizational system failure: Indirect failures involving management, organizational culture, protocols/processes, transfer of knowledge, and external factors;
4. Technical failure: Indirect failure of facilities or external resources.

In conclusion, a limited portion of categorization is dedicated to practices of protection or solution. Such intervention practices can be general (executed across the institution or healthcare providers), limited (within those high-risk areas), or suggested (specific to a clinical or organizational method that has failed or has a high potential for failure). Interventions identified to decrease medical errors and enhance patient safety within the healthcare delivery setting focus less on “active” errors that occur (i.e., the specific mistake that immediately precedes the adverse event) and more on the “latent” errors that derive from failures or flaws existing at various points in an overall system of care.

According to WHO, patient safety is the absence of preventable harm to a patient during the process of healthcare and reduction of risk of unnecessary harm associated with healthcare to an acceptable minimum. Meanwhile, patient safety culture has been defined as the values shared among organization members about what is important, their beliefs about how things operate in the organization, and the interaction of these within work unit and organizational structures and systems, which together produce behavioral norms in the organization that promote safety (Kumbi et al., 2019). Thus, the purpose of all safety measures is to improve care and prevent safety events; this can be achieved by different means (Borzecki et al., 2019). Therefore, this study is about patient safety culture using the patient safety measures to understand the culture. Medical errors could be caused by a number of factors such as physician culture, physician–nurse collaboration, and organizational working conditions and their effects on error and safety.

1.1.2 The Saudi healthcare system

Healthcare facilities are offered through Saudi Arabia's various government and individual entities. Saudi Arabia's healthcare facilities constitute of a variety of construction plans. The Government of Saudi Arabia has worked to strengthen the healthcare system by offering healthcare facilities and establishing policies and strategies to expand such services in the country (Rahman, 2018; Alsharqi, 2018). Saudi Arabia's healthcare system could be defined as a centralized and integrated network operating across many independent public and private health agencies providing primary, secondary, and tertiary health services (Alharbi et al., 2018). It is known as the lead government department that is accountable for all facets of the healthcare scheme. Such roles include procurement, effective administration, management, preparation, and control of the entire healthcare system, which also manages the healthcare services rendered by the private sector (Al Asmri, 2019; Drösler, Romano, & Wei, 2009). A hospital culture that promotes and ensures patient safety is a critical aspect for the effective delivery of hospital services and patient care. Yet there are significant patient health and safety issues in hospitals worldwide. It is claimed there are approximately 40,000 medical errors complaints filed annually in Saudi Arabia, with 3,455 medical malpractice cases referred to medical legal committee. Therefore, this study specifically explores patient safety culture in Saudi Arabian healthcare institutions.

1.2 Problem Statement

Problems with patient safety are a major concern among healthcare organizations worldwide in both rich and poor countries (Danielsson et al., 2019; Flott et al., 2019; Bodur & Filiz, 2010). Healthcare institutions seek to provide quality protection to patients and their healthcare systems have made patient safety a primary concern. The culture of patient safety is an essential domain in patient safety. The Institute of Medicine (IOM) in 1991 proposed that healthcare institutions shall concentrate closely on strengthening the health culture for patients. However, one of the major problems of patient safety, particularly in Saudi Arabia, is the issue of medical error, which has accounted for many deaths and injuries. This occurred as a result of attitudes of medical

personnel (doctors and nurses) towards patient safety culture (Danielsson, 2018; Sohn, 2013; Oyebode, 2013).

Past studies have indicated that medical error is a continuing global phenomenon. It represents an important public health problem that poses a serious threat to patient safety (Gaffar et al., 2015). The problem of medical errors is not limited to Saudi Arabia or the GCC region. In fact, it is a problem in every country in the world. Previous studies have shown that medical errors in Saudi Arabian healthcare institution have caused enough death and disability, and this issue has become a major concern to healthcare professionals and policy makers. Gone is the time when doctors are blindly trusted for their clinical acumen; recently, most of them have been frequently questioned on all aspects of patient safety because of the increase in the number of death due to medical errors (Gaffar et al., 2015). Many medical errors are never reported by healthcare professionals due to fear of punishment; they could also be concealed by patients and their families, perhaps feeling that reporting would be pointless. As long as there is no system established to report and address medical errors, these circumstances will not improve (CBAHI, 2018).

Moreover, positive attitudes towards patient safety are generally lower amongst nurses and physicians as shown in previous studies. Despite these findings, there are several gaps in knowledge about the safety attitudes of health professionals in Saudi hospitals. To date, there is no reported investigation of safety attitudes in hospitals in Saudi Arabia. This would appear to be an important issue to clarify, given the risk profile of medical errors. To investigate the issue of patient safety culture, a range of instruments to assess the safety culture of patients in healthcare has been developed, which includes questionnaires on environmental protection. The Central Board for Accreditation of Healthcare Institutions is now instituting a system by which they will receive and study cases of serious medical errors at accredited institutions and other serious medical errors and serious incidents that must be reported. Despite the efforts made and the growing awareness of patient safety in Saudi Arabia, however, the current issue is the lack of appropriate and reliable resources for analyzing patient safety culture in most Saudi Arabian hospitals. Moreover, current safety measurements (procedures) are conducted through quantitative studies (Alshammari, 2019; Rahman & Alsharqi, 2018; Halaj, 2012).

As indicated by Al-Lawati et al. (2018), patient safety is the counteractive action of unfriendly occasions to patients with weight on the arrangement of care conveyance that prevents errors and mistakes from happening in the structure, and of a safety culture that includes the patients, social insurance laborers, and associations. In patient consideration, it is vital to survey patient safety advisers to distinguish chances for development and to make a beginning stage for assessing future improvement endeavors. To accomplish this, medical service suppliers ought to coordinate quality and safety into their association to ensure appropriate clinical and regulatory practices.

Patient safety is a significant part in the culture of any human service association. Patient safety culture is one of the major aspects of health services and is one of the main priorities of health studies (Khoshakhlagh et al., 2019). A study on patient safety practices will improve the social insurance institution's patient safety culture. The appraisal will improve the nature of medical services by recognizing zones influencing patient's safety, and without this evaluation the cost of human services and consideration for sudden new dangers faced by patients will increase (Alkhenizan & Shafiq, 2018; Alhabshan,2018).

To establish a beneficial culture regarding the safety in virtually any medical service association, it is essential to understand what is significant in such associations (Desouky et al., 2019). In addition, to make a positive patient safety atmosphere, there is need for official responsibility to be carried out effectively, successful correspondence between various parts of organization, energetic assets and shared trust by all hierarchical parts. It is indeed crucial to have powerful hospital worker correspondence, which is fundamental in achieving patient safety. The correspondence helps in basic leadership and tackling issues that are identified with patient consideration (Elmonstri et al., 2018; Desouky et al., 2019).

Measurements of safety culture are identified with a few social insurance outcomes, for instance, prescription blunders, nurture back wounds, urinary tract diseases, patient fulfillment, patients' impression of medical attendant's responsiveness, and attendant fulfillment. As of now, some universal accreditation associations require deciding the patient safety culture to assess the social insurance suppliers' view of collaboration, moves made by the executives and administration to help and support patient safety, and the recurrence of occasions (Alshammari, 2019; Halaj, 2017).

Better recognition about patient safety is related with higher scores on cooperation inside hospital units, authoritative learning and constant transformation, supervisors' desires and activities committed towards the advancement of safety, non-reformatory reaction to mistake, the hospital executives' support for patient safety, and hospital handoffs and changes. The Hospital Survey on Patient Safety Culture (HSOPSC) is a generally utilized device for appraisal for culture of patient safety. Various examinations utilizing the HSOPSCapparatus have been done to evaluate patient safety culture in medical service associations, for example, to evaluate patient safety culture in medical service associations both in and out of Saudi Arabia, such as Ethiopia, Palestine, and Kuwait (Alshammari, 2019; Waterson et al., 2019).

Previous researches on patient safety culture in Saudi Arabian hospitals are strongly related to doctors' and nurses' attitude (Alzahrani et al., 2018; Gaffar et al., 2015). The studies show a lack of standards among doctors and nurses in terms of patient safety practice. Therefore, this is a crucial issue to be investigated because doctors and nurses have been indicated in past studies to have discrepant safety attitudes. However, previous studies were not comparative in nature, thereby creating a data gap on the attitudes of Saudi and non-Saudi doctors and nurses. In the light of the literature gap, it is imperative

for this study to evaluate and compare the safety attitudes of both Saudi and non-Saudi doctors and nurses employed in Saudi Arabia's emergency departments and to examine whether their safety attitudes may be reflected in hospital error rates. It should also be noted that previous studies were done by using quantitative method (Alshammari, 2019; Rahman & Alsharqi, 2018; Halaj, 2012) and some are review studies (Gaffar et al., 2015), in which the data collected were unable to determine in-depth areas such as reasons of medical error, awareness of negligence, factors that influence medical personnel's perception towards patient safety culture, as well as suggestions and recommendations to improve current situations in Saudi Arabian hospitals. This study therefore intends to evaluate medical personnel's mindfulness and attitudes in regard to patient safety culture in Saudi Arabian hospitals in order to fill the gap of the previous studies. Four hospitals in Saudi Arabia were selected based on their poor patient safety culture.

1.3 Purpose of the Study

Poor safety and quality culture of patient treatments in hospitals leads to the occurrence of adverse patient events. Healthcare organizations in Saudi Arabia are striving to improve patient safety and quality of care through implementation of safety systems and creating a culture of safety. The purpose of this study is to evaluate the patient safety culture among healthcare professionals in Saudi Arabia. Based on the problem statement stated previously and the research gap that has been highlighted, this study aims to investigate in depth the medical staff involvement regarding patient safety culture in a qualitative setting.

1.4 Research Objectives

To obtain the aim of the study, the research objectives are set as follows;

1. To identify the patient safety culture practice of hospitals in Saudi Arabia.
2. To explore the possible causes of medical errors based on the opinions and experiences of the medical staff (i.e., surgeons, physicians, pharmacists, and doctors).
3. To identify if the current measures are valid and reliable for use with the workforce in Saudi Arabian hospitals based on medical staff standpoint and the international healthcare standards.
4. To explore whether there are any recommendations or amendments for the safety policy in hospitals that can facilitate the implementation of adequate safety measures and lead to the mitigation of such medical errors.

1.5 General Research Question

The general research question of this study is what are the involvement of medical staff (doctors and nurses) in Saudi Arabian hospitals in patient safety culture?

1.6 Research Questions

Based on the research objectives stated previously, this study derives research questions as follows:

1 What are the current patient safety culture practice followed in hospitals in Saudi Arabia?

2 What are the possible causes of medical errors based on the opinions and experiences of the medical staff (i.e. surgeons, physicians, pharmacists, and doctors)?

3 How valid and reliable are the current measures based on the opinions of themedical staff and international standard?

4 Are there any recommendations or amendments for the safety policy in hospitals that can facilitate the implementation of adequate safety measures and lead to the mitigation of such medical errors?

1.7 Significance of the Study

This study aims to achieve in-depth information on Saudi Arabian hospitals' practice of patient safety culture to help improve the situation. Like all hospitals worldwide, Saudi hospitals are expected to make patient safety a priority and to improve it (Halaj, 2016; Alshammari, 2019). Nonetheless, there is inadequate investigation on patient safety culture in a qualitative setting in Saudi hospitals. It is hoped that the findings made from this study contribute to the academic literature on patient safety culture measurement, especially in Saudi Arabia, thereby promoting the development of a more secure atmosphere for patients in hospitals.

Theoretically, this research uses Wenger (1998) community of practice theory and, to the best of the researcher's knowledge, the theory has not been applied in studying patient safety culture in the context of hospitals generally and the Saudi hospitals in particular. Therefore, this study is expected to theoretically contribute to the existing body of knowledge by employing the theory of community of practice in studying doctors' and nurses' involvement in patient safety culture, focusing on Saudi Arabian hospitals.

Moreover, this research also intends to encourage a deeper understanding of the use of various environmental problems for patient safety in various contexts, which is a

qualitative approach, bearing in mind that certain patient safety culture resources, such as HSOPSC, are used in many countries beyond their original context in which they were created (Smits et al., 2008).

In terms of significance of the study for policy, this study's findings are hoped to provide empirical evidence to the authority in order to promote and emphasize the importance of patient safety culture in Saudi hospitals. Alharbi et al. (2018) in their research also urged the relevant authority to help improve the healthcare standards pertaining to patient safety culture.

Other than that, the findings of this research are also hoped to help the Saudi Ministry of Health in developing better healthcare services and practices in Saudi Arabian hospitals to help enhance the level of patient safety culture. As evidenced by previous researches, medical malpractice in Saudi Arabian hospitals is becoming a huge concern among patients and medical service organizations (Alkhenizan &Shafiq, 2018; Alhabshan, 2018). Hence, it is important for this study to be conducted in order to contribute to the betterment of medical and healthcare service in hospitals in Saudi Arabia.

1.8 Scope and Limitation of the Study

This study covers four hospitals situated in Riyadh, Saudi Arabia. Due to various levels of awareness and practices in terms of safety culture in different hospitals, this study was conducted at both public and private hospitals in Riyadh from 2018 to 2020. As highlighted in the problem statement and research gaps from previous studies, there are limited studies conducted on the medical staff experiences and opinions towards patient safety culture in Saudi Arabian hospitals. Hence, this study focuses on interviewing six doctors and six nurses in each hospital to gain related data to achieve the research goals.

However, due to limited timeframe of this study, there are several limitations in the case of sample number for hospital as well as medical staff. Nevertheless, it must also be noted that a qualitative study is not meant to generalize the situation faced by certain communities but rather to gain specific information on the subjects under study (Sutton & Austin, 2015). Hence, it is essential to mention that the number of selected participants are limited due to the nature of qualitative study, which only focuses to gain information on specific hospitals that were selected for this study. This research followed a qualitative research design and explored the medical staff's perceptions of patient safety culture in their respective hospitals in Riyadh, Saudi Arabia. As it is inherent in qualitative research designs, this research is characterized by limited sample, which this sort of study decides in favor of in-depth investigation. Thus, on this basis, this study consisted of sixteen (16) participants (eight medical doctors and eight nurses). The selection of this number was based on the suggestion given by Braun et al. (2019), which is a number between 16 and 24. This number is enough since the purpose of a qualitative study is not to make generalizations, which is true in the case of this research as well.

Another limitation of this study lies in the use of unstructured in-depth qualitative interviews as the primary data source to explore medical staff's perceptions of patient safety culture. It is therefore important to note that the opinions and experiences of the medical staff are likely to be biased based on their circumstances and how they observe patient safety culture in their respective hospitals. Nonetheless, the findings of this study are expected to be helpful for various stakeholders in understanding patient safety culture in the selected hospitals and may shed some light into patient safety culture in other hospitals that were not included in the study.

1.9 Definition of Terms

In this section, the terms used in this research are defined as follows;

Patient: the definition of patient adopted in this study is that of the World Health Organization (WHO), which defined patient as a person receiving a healthcare (WHO, 2011).

Patient safety: Patient safety is a field that focuses on ensuring patient safety in hospital by preventing, reducing, reporting, and analyzing errors and other sorts of avoidable damage that frequently result in negative patient outcomes (Fadahunsi, et al, 2019).

Patient safety culture: The situation of safe care of patients in healthcare services provided by medical staff, usage of facilities, medications, and others (Farokhzadian et al., 2018). In this study, patient safety culture was assessed in four selected hospitals in Saudi Arabia.

Patient safety measures: A method of assessing the efficacy of safety treatments, detecting new or emerging safety risks, comparing patient safety across hospitals and clinics, or determining if patient safety is increasing over time is referred to as patient safety measurement.

Code of practice: A code of practice is a set of principles that outline the professional behaviour and practice those professionals must follow in their everyday work. Workers' obligations in health regulation are outlined in the code of practice. The rules are meant to represent current best practices, and it is expected that employees and managers would identify shared criteria in the codes that they currently strive for (GSCC, 2010).

Medical error: A medical error is an avoidable unfavorable impact of care ("iatrogenesis"), regardless of whether it is visible or detrimental to the patient. An incorrect or incomplete diagnosis or treatment of a sickness, accident, syndrome, behaviour, infection, or other affliction is one example (Peer & Shabir, 2018).

Medical staff: Medical personnel who are in charge of providing medical care to patients in required situation of medical assistance (Kim & Weng, 2018). Medical personnel consist of various job scopes in a hospital such as doctors, nurses, technicians, surgeons, dentists, pharmacists, and others. However, this study focuses on the involvement of doctors and nurses, considering these two professions are the main personnel that are involved in patients' treatment.

Hospital: Medical facility that provides medical screening, care, and services to patients who require medical treatment (Parand et al., 2014). There are various types of hospitals, but in general, they are divided into two categories: public hospitals and private hospitals. Hospitals are also categorized into size and advancement in technological services as well as area of expertise offered by the hospital (Giancotti et al., 2017). In this research, two different categories of hospital were selected, which are two public hospitals and two private hospitals.

REFERENCES

Abdalla, S., Spenser S. Apramian, Linda F. Cantley, and Mark R. Cullen (2017). Occupation and Risk for Injuries. Chapter in; injury prevention and environment health. 3rd edition

Aboshaiqah, A. E., & Baker, O. G. (2013). Assessment of nurses' perceptions of patient safety culture in a Saudi Arabia hospital. *Journal of nursing care quality*, *28*(3), 272-280.

Abraham, R.J., and Twerski, J. (2020). Medical Errors: Focusing More on What and Why, Less on Who. *Journal of oncology practice* 3(2) 66-70

Abu Al-Rub, Z., Hussaini, M., & Gerrand, C. H. (2014). What do patients know about their joint replacement implants?. *Scottish medical journal*, *59*(3), 158–161.

Abu-El-Noor, N.I., Abu-El-Noor, M.K., Abuowda, Y.Z. (2019). Patient safety culture among nurses working in Palestinian governmental hospital: a pathway to a new policy. *BMC Health Serv Res* 19, 550

Agency for healthcare research and quality (AHRQ)

Ahmed, M. (2020). Healthcare opportunities and challenges in Saudi Arabia. Omnia Health.

Aiken, L. H., Clarke, S. P., Sloane, D. M., Sochalski, J., & Silber, J. H. (2002). Hospital nurse staffing and patient mortality, nurse burnout, and job dissatisfaction.*JAMA*, *288*(16), 1987–1993.

Ajaj, W., Goyen, M., Herrmann, B., Massing, S., Goehde, S., Lauenstein, T., & Ruehm, S. G. (2005). Measuring tongue volumes and visualizing the chewingand swallowing process using real-time TrueFISP imaging--initial clinical experience in healthy volunteers and patients with acromegaly. *European radiology*, *15*(5), 913–918.

Alkhenizan & Shafiq, (2018). The process of litigation for medical errors in Saudi Arabia and the United Kingdom. *Saudi Medical Journal 39(11):1075-1081.*

Alahmadi, H. A. (2010). Assessment of patient safety culture in Saudi Arabian hospitals. *Quality and Safety in Health Care*, *19* (5), e17-e17.

Al-Ahmadi, T. A. (2009). Measuring Patient Safety Culture in Riyadh's Hospitals: A Comparison between Public and Private Hospitals. *The Journal of the Egyptian Public Health Association*, *84*(5-6), 479-500.

Al Asmri, M., Almalki, M.J., Fitzgerald, G. and Clark, M., 2019. The public health care system and primary care services in Saudi Arabia: a system in transition.*East Mediterr Health J*, *25*.

Alahmadi, H. A. (2010). Assessment of patient safety culture in Saudi Arabian hospitals. *Quality and Safety in Health Care*, *19* (5), e17-e17.

Alahmadi HA. (2010). Assessment of patient safety culture in Saudi Arabian hospitals. *Qual Saf Health Care*.;19(5): e17.

Alert, S.E. (2017). The essential role of leadership in developing a safety culture. A complimentary publication of The Joint Commission Issue 57, March 1, 2017

Alhabshan, R. N., & Mansour, T. N. (2018). Association between oral fluoroquinolone use and lateral canthal tendon rupture: case report. *Orbit (Amsterdam, Netherlands)*,*37*(5),358–360.

Alharbi, W., Cleland, J., & Morrison, Z. (2018). Assessment of Patient Safety Culture in an Adult Oncology Department in Saudi Arabia. *Oman medical journal*, *33*(3), 200–208.

Al-Harbi F. A. (2018). Mandibular Implant-supported Overdentures: Prosthetic Overview. *Saudi journal of medicine & medical sciences*, *6*(1), 2–7.

Alhawassi, T. M., Abuelizz, H. A., Almetwazi, M., Mahmoud, M. A., Alghamdi, A., Alruthia, Y. S., ... & Pitts, P. J. (2018). Advancing pharmaceuticals and patient safety in Saudi Arabia: A 2030 vision initiative. *Saudi Pharmaceutical Journal*, *26*(1), 71-74.

Aljadhey H. (2013). Challenges facing advanced pharmacy practice experience in Saudi Arabia. *American journal of pharmaceutical education*, *77*(1), 19.

Al-Kandari, F., & Thomas, D. (2009). Perceived adverse patient outcomes correlated to nurses' workload in medical and surgical wards of selected hospitals in Kuwait. *Journal of clinical nursing*, *18*(4), 581–590.

Al-Khaldi, Y.M., Al-Ghamdi, E.A., Al-Mogbil, T.I. and Al-Khashan, H.I., 2017. Family medicine practice in Saudi Arabia: The current situation and proposed strategic directions plan 2020. *Journal of Family & Community Medicine*, *24*(3), p.156.

Al-Lawati, H., Al-Baimani, K., Al-Zadjali, M., Al-Obaidani, N., Al-Kiyumi, Z., & Al-Khabori, M. K. (2018). Knowledge and Attitudes Towards Clinical Trial Participation in Oman: A cross-sectional study. *Sultan Qaboos University medical journal*, *18* (1), e54–e60.

Al Malki, A., Endacott, R., & Innes, K. (2018). Health professional perspectives of patient safety issues in intensive care units in Saudi Arabia. *Journal of nursingmanagement*, *26*(2), 209-218.

Al Salem, G., Bowie, P., Morrison, J. (2019). Hospital Survey on Patient Safety Culture: psychometric evaluation in Kuwaiti public healthcare settings. *BMJ* 9(5) 1-10.

Alrowely, Z., & Ghazi Baker, O. (2019). Assessing Building Blocks for Patient Safety Culture-a Quantitative Assessment of Saudi Arabia. *Risk management and healthcare policy*, *12*, 275–285.

Alshammari, F., Alzoghbieh, E., Abu Kabar, M., & Hawamdeh, M. (2019). A novel approach to improve hamstring flexibility: A single-blinded randomised clinical trial. *The South African journal of physiotherapy*, *75*(1), 465.

Al Asmri, M., Almalki, M.J., Fitzgerald, G. & Clark, M. (2018). The public healthcare system and primary care services in Saudi Arabia: a system in transition. *East Mediaterr Health Journal.* 25(10) 1-18.

Al Hamid, A., Malik, A., & Alyatama, S. (2020). An exploration of patient safety culture in Kuwait hospitals: a qualitative study of healthcare professionals' perspectives. *International Journal of Pharmacy Practice*, *28*(6), 617-625.

Ali, H., Ibrahem, S. Z., Al Mudaf, B., Al Fadalah, T., Jamal, D., & El-Jardali, F. (2018). Baseline assessment of patient safety culture in public hospitals in Kuwait. *BMC health services research*, *18*(1), 158.

Almashrafi, A., Elmontsri, M., & Aylin, P. (2016). Systematic review of factors influencing length of stay in ICU after adult cardiac surgery. *BMC health services research*, *16*, 318.

Allan, R. and Eatough, V., 2016. The use of interpretive phenomenological analysis in couple and family therapy research. *The Family Journal*, *24*(4), pp.406- 414.

Alonazi, K. A., Lovell, N. H., & Dokos, S. (2016). Simulation of motor current waveforms in monitoring aortic valve state during ventricular assist device support. *Conference proceedings Annual International Conference of the IEEE Engineering in Medicine and Biology Society. IEEE Engineering in Medicine and Biology Society. Annual Conference*, *2016*, 1451–1454.

Alrowely, Z., & Baker, O. G. (2019). Assessing Building Blocks for Patient Safety Culture—a Quantitative Assessment of Saudi Arabia. *Risk Management and Healthcare Policy*, *12*, 275.

Alshammari, F., Alzoghbieh, E., Abu Kabar, M., & Hawamdeh, M. (2019). A novel approach to improve hamstring flexibility: A single-blinded randomised clinical trial. *The South African journal of physiotherapy*, *75*(1), 465.

Alswat, K., Abdalla, R. A. M., Titi, M. A., Bakash, M., Mehmood, F., Zubairi, B., & El-Jardali, F. (2017). Improving patient safety culture in Saudi Arabia (2012–2015): trending, improvement and benchmarking. *BMC health services research*, *17*(1), 516.

Alswat K. A. (2017). Gender Disparities in Osteoporosis. *Journal of clinical medicine research*, *9*(5), 382–387.

Alzahrani, N., Jones, R., & Abdel-Latif, M. E. (2018). Attitudes of doctors and nurses toward patient safety within emergency departments of two Saudi Arabian hospitals. *BMC health services research*, *18*(1), 736.

Alzahrani, N., Jones, R., & Abdel-Latif, M. E. (2019, March). Attitudes of doctors and nurses toward patient safety within emergency departments of a Saudi Arabian hospital: a qualitative study. In *Healthcare* (Vol. 7, No. 1, p. 44). Multidisciplinary Digital Publishing Institute.

Alzahrani, T., Pena, I., Temesgen, N., & Glantz, S. A. (2018). Association Between Electronic Cigarette Use and Myocardial Infarction. *American journal of preventive medicine*, *55*(4), 455–461.

Anderson, C. (2010). Presenting and evaluating qualitative research. *Am J Pharm Educ* 2010; 74 (8)6: Article 141.

Anderson, N. M., & Simon, M. C. (2019). BACH1 Orchestrates Lung Cancer Metastasis.*Cell*, *178*(2), 265–267.

Angrosino, M. V. (2007). *Doing ethnographic and observational research.* Thousand Oaks, CA: Sage.

Aveyard, P., Brown, K., Saunders, C., Alexander, A., Johnstone, E., Munafò, M. R., & Murphy, M. (2007). Weekly versus basic smoking cessation support in primary care: a randomised controlled trial. *Thorax*, *62*(10), 898–903.

Baggs J. G. (1999). Women in the intensive care unit. *American journal of critical care: an official publication, American Association of Critical-Care Nurses*, *8*(4), 207–209.

Baker, G.R., Norton, P.G., Flintoft, V., Blais, R., Brown, A., Cox, J., Etchells, E., Ghali, W.A., Hébert, P., Majumdar, S.R. and O'Beirne, M., 2004. The Canadian Adverse Events Study: the incidence of adverse events amonghospital patients in Canada. *Cmaj*, *170*(11), pp.1678-1686.

Balogh EP, Miller BT, Ball JR, (2015). Committee on Diagnostic Error in Health Care; Board on Health Care Services; Institute of Medicine; The National Academies of Sciences, Engineering, and Medicine;Improving Diagnosis in Health Care. Washington (DC): National Academies Press (US); 2015 Dec 3, Overview of Diagnostic Error in Health Care.

Bani, M., Andorn, A., & Heidbreder, C. (2014). Pharmacologically, are smokers the same as non-smokers?. *Current opinion in pharmacology*, *14*, 42–49.

Basten, D. and Haamann, T. (2018) Approaches for Organizational Learning: A Literature Review. SAGE OPEN ACCESS

Bassuni, E. M., & Bayoumi, M. M. (2015). Improvement critical care patient safety: using nursing staff development strategies, at Saudi Arabia. *Global Journal ofHealth Science*, *7*(2), 335.

Barrett, R. J., Caul, W. F., Stadler, J. R., & Smith, R. L. (2001). Long-lasting rebound cue effects following single doses of nicotine and amphetamine: implications for understanding tolerance. *Psychopharmacology*, *157*(4), 349–357.

Barach, P., & Small, S. D. (2000). Reporting and preventing medical mishaps: lessons from non-medical near miss reporting systems. *BMJ (Clinical research ed.)*, *320*(7237), 759–763.

Barker P. A. (2009). Whither pro BDNF. *Nature neuroscience*, *12*(2), 105–106.

Batcheller, J., Burkman, K., Armstrong, D., Chappell, C., & Carelock, J. L. (2004). A practice model for patient safety: the value of the experienced registered nurse. *The Journal of nursing administration*, *34*(4), 200–205.

Baxter, L. A., Babbie, E. R. (2004). The Basics of Communication Research. Belmont, CA: Wadsworth; 2004.

Bayomi, E. A., Barakat, A. B., El-Bassuoni, M. A., Talaat, R. M., El-Deftar, M. M., Abdel Wahab, S. A., & Metwally, A. M. (2015). Cyclooxygenase-2 expressionis associated with elevated aspartate aminotransferase level in hepatocellular carcinoma. *Journal of Cancer Research and Therapeutics*, *11*(4), 786–792.

Behzadifar, M., Saki, M., Behzadifar, M., Mardani, M., Yari, F., Ebrahimzadeh, F., Majidi Mehr, H., Abdi Bastami, S., & Bragazzi, N. L. (2019). Prevalence of exclusive breastfeeding practice in the first six months of life and its determinants in Iran: a systematic review and meta-analysis. *BMC Pediatrics*, *19*(1), 384.

Benn J., Burnett S., Parand A., Pinto A., Iskander C., Vincent C. Studying large-scale programmes to improve patient safety in whole care systems: challenges for research. *Soc. Sci. Med*. 2009; 69:1767–1776

Benn, C. S., Lund, S., Fisker, A., Jørgensen, M. J., & Aaby, P. (2009). Should infant girls receive micronutrient supplements. *International Journal of Epidemiology*, *38*(2), 586–590.

Biggerstaff, D. L. and Thompson, A. R. (2008). Interpretative Phenomenological Analysis (IPA): A Qualitative Methodology of Choice in Healthcare Research.*Qualitative Research in Psychology* 5: 173 – 183.

Bird, C. (2016). Interview Guide: Perspectives on Data Science for Software Engineering. *Sciencedirect*.

Birt, L., Scott, S., Cavers, D., Campbell, C. and Walter, F. (2016). Member Checking: A Tool to Enhance Trustworthiness or Merely a Nod to Validation? *Qualitative Health Research*, 26(13):1802-1811.

Blake, et al (2006). Strength of early visual adaptation depends on visual awareness. Vanderbilt Vision Research Center and Department of Psychology, Vanderbilt University, 111 21st Avenue South, Nashville, TN 37203

Blegen, M. A., Gearhart, S., O'Brien, R., Sehgal, N. L., & All dredge, B. K. (2009). AHRQ's hospital survey on patient safety culture: psychometric analyses. *Journal of Patient Safety*, *5*(3),139–144.

Borji, A., Feng, M., & Lu, H. (2016). Vanishing point attracts gaze in free-viewing and visual search tasks. *Journal of Vision*, *16*(14), 18.

Boscarino JA, Kirchner HL, Hoffman SN, Sartorius J, Adams RE. (2011). PTSD and alcohol use after the World Trade Center attacks: a longitudinal study. *Journal of Trauma Stress*. 24(5):515-525.

Bost, N., Crilly, J., Wallis, M., Patterson, E., & Chaboyer, W. (2010). Clinical handover of patients arriving by ambulance to the emergency department - a literature review. *International Emergency Nursing*, *18*(4), 210–220.

Bowen, G. A. (2009). 'Document Analysis as a Qualitative Research Method', *Qualitative Research Journal*, vol. 9, no. 2, pp. 27-40.

Braaf, S., Manias, E., & Riley, R. (2013). The 'time-out' procedure: an institutional ethnography of how it is conducted in actual clinical practice. *BMJ quality & safety*, *22*(8), 647–655.

Brazier, Y. (2017). *What is medical malpractice*? Medical news today, April 5, 2017 Braun, V. & Clarke, V. (2019). Reflecting on reflexive thematic analysis. *Journal of Qualitative Research in Sport, Exercise and Health. 11(4) 589- 597*

Bristowe, K., Siassakos, D., Hambly, H., Angouri, J., Yelland, A., Draycott, T. J., & Fox, R. (2012). Teamwork for clinical emergencies: interprofessional focus group analysis and triangulation with simulation. *Qualitative Health Research*, *22*(10), 1383–1394.

British Medical Association. Assessment of Mental Capacity: Guidance for doctors and lawyers. A report of the British Medical Association and The Law Society.London: BMA, 1995:56–66.

Bryman, A. & Bell, E. (2007) "Business Research Methods", 2nd edition. Oxford University Press.

Buargub M. A. (2005). The general application of standard health precautions in tripoli hemodialysis units. *Saudi journal of kidney diseases and transplantation: an official publication of the Saudi Center for Organ Transplantation, Saudi Arabia*, *16*(2), 201–205.

Buljac-Samardzic, M., Doekhie, K.D. & van Wijngaarden, J.D.H. (2020). Interventions to improve team effectiveness within health care: a systematic review of the past decade. *Hum Resource Health* (18)2.

Busse, R., Dimitra, N.K., and Quentin, P.W. (2019.) Improving healthcare quality in Europe: Characteristics, effectiveness and implementation of different strategies. European observatory on health systems and policies a partnership hosted by WHO. OECD 2019.

Bodur, S., & Filiz, E. (2010). Validity and reliability of Turkish version of "Hospital Survey on Patient Safety Culture" and perception of patient safety in public hospitals in Turkey. *BMC*

Carlson, J. A. (2010). Avoiding Traps in Member Checking. *The Qualitative Report* Volume 15 Number 5 September 2010 1102-1113.

Carmeli and Sheaffer, (2008). How Learning Leadership and Organizational Learning from Failures Enhance Perceived Organizational Capacity to Adapt to the Task Environment. *The Journal of Applied Behavioural Science*

Carroll, J. S., & Edmondson, A. C. (2002). Leading organisational learning in health care. *Quality & Safety in Health Care*, *11*(1), 51–56.

Catherine, D., Daugherty, K., Derieg, M.K. and Persing, R. (2008). Improving Patient Safety Through Provider Communication Strategy Enhancements. Advances in Patient Safety: New Directions and Alternative Approaches (Vol. 3: Performance and Tools)

Cassell, C. (2005). Creating the interviewer: identity work in the management research process. Qualitative Research. 2005; 5(2):167–179.

Cekit, E., Olak, A.J., Murata, A., Karwowski, W., Alrehaili, O & Marek, T., (2019). Assessment of the perceived safety culture in the petrochemical industry in Japan: A cross-sectional study. *Plos one Journals.*

Chang, M. J., Wu, H., Achille, N. J., Reisenauer, M. R., Chou, C. W., Zeleznik-Le, N. J., Hemenway, C. S., & Zhang, W. (2010). Histone H3 lysine 79 methyltransferase Dot1 is required for immortalization by MLL oncogenes. *Cancer research*, *70*(24), 10234–10242.

Cho, E., Lee, N.J., Kim, E.Y., Kim, S., Lee, K., Park, K.O., Sung, Y.H. (2016). Nurse staffing level and overtime associated with patient safety, quality of care, and care left undone in hospitals: A cross-sectional study. International Journal of Nursing Studies. Vol 60. Pages 263-271

Christian, C. K., Gustafson, M. L., Roth, E. M., Sheridan, T. B., Gandhi, T. K., Dwyer, K., Zinner, M. J., & Dierks, M. M. (2006). A prospective study of patient safety in the operating room. *Surgery*, *139*(2),159–173.

Cimiotti, J. P., Aiken, L. H., Sloane, D. M., & Wu, E. S. (2012). Nurse staffing, burnout, and health care-associated infection. *American journal of infection control*, *40*(6), 486–490.

Clarke J. (1999). Burns. *British medical bulletin*, *55*(4), 885–894.

Clark, P.R., 2009. Teamwork: building healthier workplaces and providing safer patient care. *Critical care nursing quarterly*, *32*(3), pp.221-231.

Clements, C. J., Streefland, P. H., & Malau, C. (2007). Supervision in primary health care--can it be carried out effectively in developing countries? *Current drug safety*, *2*(1), 19–23.

Coffey, P. J., Perry, V. H., & Rawlins, J. N. (1990). An investigation into the early stages of the inflammatory response following ibotenic acid-induced neuronal degeneration. *Neuroscience*, *35*(1), 121–132.

Colla, J. B., Bracken, A. C., Kinney, L. M., & Weeks, W. B. (2005). Measuring patient safety climate: a review of surveys. *Quality & safety in health care*, *14*(5), 364–366.

Consalvo, A. L., Schallert, D. L., & Elias, E. M. (2015). An examination of the construct of legitimate peripheral participation as a theoretical framework in literacy research. *Educational Research Review, 16,* 1-18.

Cook, T. M., Nolan, J. P., Magee, P. T., & Cranshaw, J. H. (2007). Needle cricothyroidotomy. *Anaesthesia*, *62*(3),289–291.

Cooke, et al (2007). Team Cognition in Experienced Command-and-Control Teams Journal of Experimental Psychology Applied 13(3):146-57

Cooper, J. B., Gaba, D. M., Liang, B., Woods, D., & Blum, L. N. (2000). The National Patient Safety Foundation agenda for research and development in patient safety. *MedGenMed: Medscape general medicine*, *2*(3), E38.

Cooper G., 4th (2000). Cardiocyte cytoskeleton in hypertrophied myocardium. *Heart failure reviews*, *5*(3), 187–201.

Corbin, J. & Strauss, A. (2008). Basics of qualitative research: Techniques and procedures for developing grounded theory (3rd ed.). Thousand Oaks, CA: Sage.

Creswell, J. (2002). Educational research: Planning, conducting, and evaluating quantitative and qualitative research. Upper Saddle River, NJ: Merrill Prentice Hall.

Creswell, J. W. (2006). Qualitative inquiry and research design: choosing among five approaches. 2nd Edition Sage Publications. Thousand Oaks, CA. 2006.

Creswell, J. W. (2012). *Research Design: Qualitative, Quantitative and Mixed Methods Approaches.* Third Edition, page 30.

Creswell, J. W. (2013). *Qualitative Inquiry & Research Design: Choosing Among the Five Approaches.* Thousand Oaks, CA: SAGE Publications, Inc. (pp. 77- 83).

Creswell, J.W. (1998) *Qualitative inquiry and research design: Choosing among five traditions.* London: Sage.

Creswell, J. W. (2009). *Research design: Qualitative, quantitative, and mixed methods approaches* (3rd ed.). Los Angeles, CA: Sage.

Creswell, J.W. (2014). *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches,* Sage.

Crua-correia, R., Luis, L., Rodrigues, P.P. (2011). *Traceability of Patient Records Usage: Barriers and Opportunities for Improving User Interface Design and Data Management*. User Centred Networked Health, IOS Press, European Federation for Medical Informatics.

Dauwed, M. and Meri, A. (ND). IOT services utilization in healthcare. *Open access peer-reviewed chapter*.

Danielsson, M. (2018). Patient safety-Cultural perspective. Thesis submitted to the Department of medical and health sciences, Linkoping University, Sweden.

Danielsson, K. C., Gilhus, N. E., Borthen, I., Lie, R. T., & Morken, N. H. (2019). Maternal complications in pregnancy and childbirth for women with epilepsy: Time trends in a nationwide cohort. *PloS one*, *14*(11), e0225334.

Denzin, N. K., & Lincoln, Y. S. (2005). *Introduction: The Discipline and Practice of Qualitative Research.* In N. K. Denzin & Y. S. Lincoln (Eds.), *The Sage handbook of qualitative research* (p. 1–32). Sage Publications Ltd.

Department of Health. An Organization with a Memory. London: The Stationery Office, 2000

De Vries, J., de Jonge, H. and van der Voordt, D.J.M. (2008), "Impact of real estate interventions on organisational performance", Journal of Corporate Real Estate, Vol. 10 No. 3, pp. 208-23

Dingley, C., Daugherty, K., Derieg, M.K, Persing, R. (2008). *Improving Patient Safety Through Provider Communication Strategy Enhancements.* In book: *Advances in Patient Safety: New Directions and Alternative Approaches* (Vol. 3: Performance and Tools). Agency for Healthcare Research and Quality (US)

Dixon-Woods, M., Agarwal, S., Jones, D., Young, B. and Sutton, A., 2005. Synthesizing qualitative and quantitative evidence: a review of possible methods. *Journal of health services research & policy*, *10*(1), pp.45-53.

Dowling, M. (2006). Approaches to reflexivity in qualitative research. *Nurse Researcher, 13*(3), 7-21.

Doyle, S. (2007). Member checking with older women: A framework for negotiating meaning. *Health Care for Women International*, *8*, 888–908.

Drösler, S., Romano, P. and Wei, L., 2009. Health care quality indicators project: patient safety indicators report 2009.

Edmondson K. M. (2004). Outcomes assessment as a component of good educational practice. *Journal of veterinary medical education*, *31*(2), 126–127.

El-Bouri K. (2009). Clinical Microbiology Services are Essential for Diagnosis, Treatment and Prevention of MRSA and other Nosocomial Pathogens in Libyan Healthcare Facilities. *The Libyan journal of medicine*, *4*(3), 91–92.

El-Desouky S, Taalab YM, El-Gamal M, Mohamed W, Salama M. Animal Model for Leigh Syndrome. *Methods Mol Biol*. 2019; 2011:451-464.

El-Jardali, F., Sheikh, F., Garcia, N. A., Jamal, D., & Abdo, A. (2014). Patient safety culture in a large teaching hospital in Riyadh: baseline assessment, comparative analysis and opportunities for improvement. *BMC health services research*, *14*(1), 122.

El-Jardali, F., Makhoul, J., Jamal, D., Ranson, M. K., Kronfol, N. M., & Tchaghchagian, V. (2010). Eliciting policymakers' and stakeholders' opinions to help shape health system research priorities in the Middle East and North Africa region. *Health policy and planning*, *25*(1), 15–27.

El-Jardali, F., Dimassi, H., Jamal, D., Jaafar, M., & Hemadeh, N. (2011). Predictors and outcomes of patient safety culture in hospitals. *BMC health services research*, *11*, 45.

Elkhammas and Emsallem (2007). The National Day for the Libyan. *Libyan Journal of Medicine 2(2)*

Elmontsri M, Banarsee R, Majeed A. (2018). Improving patient safety in developing countries - moving towards an integrated approach. *J R Soc Med.* 2018; 9(11):1-5.

El-Sayed Desouky, D., Alraqi, A., Alsofyani, R., & Alghamdi, N. (2019). Assessment of patient safety culture in tertiary health care settings in Taif City, Saudi Arabia. *Middle East Journal of Family Medicine*, *17*(9).

European commission (2019). Expert panel on effective ways of investing in health (EXPH) Opinion on Defining value in "value-based healthcare" The EXPH adopted this opinion at its 16th plenary on 26 June 2019 after a public hearing on 4 June 2019. Luxembourg: Publications Office of the European Union, 2019

Etim, J.J, Okoi, N.O., and Ndep, A. (2017). Work-Overload and Work-place Stress on Hospital Staff in Ugep-Urban of Yakurr Local Government Area, Cross River State, Nigeria. *Journal of Health, Medicine and Nursing*. Vol.42, 196 [accessed Aug 19 2020].

Farokhzadian, J., Khajouei, R. and Ahmadian, L., 2015. Information seeking and retrieval skills of nurses: Nurses readiness for evidence based practice in hospitals of a medical university in Iran. *International Journal of medical informatics*, *84*(8), pp.570-577.

Farokhzadian, J., Nayeri, N. D., & Borhani, F. (2018). The long way ahead to achieve an effective patient safety culture: challenges perceived by nurses. *BMC healthservices research*, *18*(1), 1-13.

Farokhzadian, J., Sabzi, A., & Mangolian Shahrbabaki, P. (2018). Improving the self-efficacy of teachers in schools: results of health promotion program. *International journal of adolescent medicine and health*, /j/ijamh.ahead-of-print/ijamh-2017-0170/ijamh-2017-0170.xml. Advance online publication.

Flin, Mearns, O'Connor & Bryden, 2000 A hierarchical factor analysis of a safety culture survey. Journal of Safety Research 45:15-28.

Flott, K., Fontana, G., & Darzi, A. (2019). The global state of patient safety. Imperial College London, London.

Fossey, E., Harvey, C., McDermott, F., and Davidson, L. (2002). Understanding and evaluating qualitative research. *Australian & New Zealand Journal of Psychiatry*, *36*, 717–732.

Frank Guldenmund 2000 The Nature of Safety Culture: A Review of Theory and Research. Safety Science 34(1):215-257. DOI: 10.1016/S0925-7535(00)00014-X

Frazier, C. B., Ludwig, T. D., Whitaker, B., & Roberts, D. S. (2013). A hierarchical factor analysis of a safety culture survey. *Journal of safety research*, *45*, 15–28.

Fusch, P. I. and Ness, L. R. (2015). Are We There Yet? Data Saturation in Qualitative Research. The Qualitative Report 2015 20(9):1408-1416.

Gauld, R., and Horsburgh, S. (2014). Measuring progress with clinical governance development in New Zealand: perceptions of senior doctors in 2010 and2012. *BMC Health Serv Res*14, 547.

Gaupp, R., Körner, M. & Fabry, G. (2016). Effects of a case-based interactive e- learning course on knowledge and attitudes about patient safety: a quasi- experimental study with third-year medical students. *BMC Med Educ* 16, 172.

Ghaffar, U. B., Ahmed, S. M., & Faraz, A. (2015). A review of the frequency of medical error in Saudi Arabia: An emerging concern. *Journal of Evidence Based Medicine and Healthcare*, *2*(52), 8692-5.

Ghasemzadeh, A., Jaafar, H. Z., & Rahmat, A. (2010). Antioxidant activities, total phenolics and flavonoids content in two varieties of Malaysia young ginger (Zingiber officinale Roscoe). *Molecules (Basel, Switzerland)*, *15*(6), 4324–4333.

Guldenmund, F.W., 2000. The nature of safety culture: a review of theory and research. *Safety science*, *34*(1-3), pp.215-257.

Giancotti, A., D'Ambrosio, V., Marchionni, E., Squarcella, A., Aliberti, C., La Torre, R., Manganaro, L., Pizzuti, A., & PECRAM Study Group* (2017). Pfeiffer syndrome: literature review of prenatal sonographic findings and genetic diagnosis. *The journal of maternal-fetal & neonatal medicine: the official journal of the European Association of Perinatal Medicine, the Federation of Asia and Oceania Perinatal Societies, the International Society of Perinatal Obstetricians*, *30* (18), 2225–2231.

Gillham, B. (2000). *Case study research methods* (second edt). London: Bloomsbury Academic

Ginsburg, I., Kohen, R., & Koren, E. (2011). Microbial and host cells acquire enhanced oxidant-scavenging abilities by binding polyphenols. *Archives of biochemistryand biophysics*, *506*(1), 12–23.

Gorelick P. B. (2008). Lipoprotein-associated phospholipase A2 and risk of stroke. *The American journal of cardiology*, *101*(12A), 34F–40F.

Grogan, P. M., & Katz, J. S. (2004). Inflammatory Myopathies. *Current treatment options in neurology*, *6* (2), 155–161.

Hadi, M. A. and Closs, S. J. (2016). Ensuring rig our and trustworthiness of qualitative research in clinical pharmacy. *International Journal of Clinical Pharmacy*, 38(3):641-646.

Halaj, M. (2016). Safety culture as an aspect of organization security. *Present and future development of security research* (s. 35-44). Kraków: EDIS - publishing Centre ŽU.

Halaj, M., 2017, September. How to measure the safety culture of organizations. In *CBU International Conference Proceedings* (Vol. 5, pp. 622-626).

Halligan, M., & Zecevic, A. (2011). Safety culture in healthcare: a review of concepts, dimensions, measures and progress. *BMJ quality & safety*, *20*(4), 338–343.

Hammarberg, K., Kirkman, M. and de Lacey, S. (2016). Qualitative research methods: when to use them and how to judge them. *Human Reproduction*, 31(3):498–501.

Hammersley, M., Atkinson, P. (1995). Ethnography: Principles in Practice. 2. New York: Routledge; 1995.

Hampl, M., Hrabálek, L., Vaverka, M., Krahulík, D., Novák, V., Halaj, M., & Stejskal, P. (2017). Autologní kranioplastika deponovanou kostní ploténkou v podkožímezogastria [Autologous cranioplasty with a bone flap preserved subcutaneously in the mesogastrium]. *Rozhledy v chirurgii: mesicnik*

Hancock, D. R. and Algozzine, B. (2006). Doing case study research: A practical guide for beginning researchers. New York: Teachers College Press.

Health Foundation, 2011. Spotlight on dementia care: A Health Foundation improvement report.

Health and Safety Commission (HSC). (1993). ACSNI Study Group on Human Factors. 3rd Report: *Organizing for Safety*. London: HMSO.

Hedayat, A.A. & Shahniani, M. (2017). Investigating the Safety Culture and Costs Arising from Safety Non-Compliance on Building Sites. *Journal of History Culture and Art Research* 6(1):315.

Hellings, J., Schrooten, W., Klazinga, N. S., & Vleugels, A. (2010). Improving patient safety culture. *International journal of health care quality assurance*, *23*(5), 489–506.

Hersch, E.C. & Merriam, G.R. (2008) Growth hormone (GH)-releasing hormone and GH secretagogues in normal aging: fountain of youth or pool of Tantalus? *Clinical Interventions in Aging*, 3, 121–129.

Hellings, J., Schrooten, W., Klazinga, N. and Vleugels, A., 2007. Challenging patient safety culture: survey results. *International journal of health care quality assurance*.

Hesse-Biber, S. N. (2007). Handbook of feminist research: Theory and praxis. Thousand Oaks, CA: Sage Publications Inc.

Hoadley, C. (2012). 12 What is a Community of Practice and How Can We Support It?. *Theoretical foundations of learning environments*, 286.

Holland, D., Lachicotte, W.J., Skinner, D. & Cain, C. (1998). Identity and agency in cultural worlds. Harvard University Press, Cambridge, England

Honorene, J. (2016). Understanding the Role of Triangulation in Research. *Scholarly research Journal for Interdisciplinary Studies (SRJIS)*, page 91-95.

Hudson L. D. (2001). Pemphigus. *Southern medical journal*, *94* (7), 658–659.

Institute of Medicine. To err is human: building a safer health system [Internet]. Washington, DC: The National Academies Press; 1999 Nov [cited 2018 Nov 29]. 312 p.

Institute of Medicine. Crossing the Quality Chasm: A New Health System for the 21st Century. Washington, DC, National Academies Press, 2001

Israel, M., & Hay, I. (2006). *Research ethics for social scientists: Between ethical conduct and regulatory compliance.* Sage Publications Ltd.

Jamal AlJarallah and Norah AlRowaiss (2018) The pattern of medical errors and litigation against doctors in Saudi Arabia. Journal of Family and Community Medicine (Vol. 20, Issue 2)

Jamili, S., Ebrahimipour, H., Hooshmand, E., Esmaeli, H. and Vafaee Najar, A., 2016. Assessment of Patient Safety Culture in a Selected Number of Pharmacies Affiliated to Mashhad University of Medical Sciences Using the Pharmacy Survey on Patient Safety Culture (SOPS). *Journal of Patient Safety & Quality Improvement*, *4*(3), pp.388-393.

Janus, S.S. (2016). Becoming a knowledge-sharing organization; a handbook for scaling up solutions through knowledge capturing and sharing. World Bank Group, Washington.

Jarrar, D., & Song, G. Y. (2018). Thoracic Surgery in Patients with AIDS. *Thoracic surgeryclinics*,*28*(1),105–108.

Jarrar, M. T., Minai, M. S., Al-Bsheish, M., Meri, A., & Jaber, M. (2019). Hospital nurse shift length, patient-centered care, and the perceived quality and patient safety. *The International journal of health planning and management*, *34*(1), e387-e396.

Jeffe, D. B., Dunagan, W. C., Garbutt, J., Burroughs, T. E., Gallagher, T. H., Hill, P. R., Harris, C. B., Bommarito, K., & Fraser, V. J. (2004). Using focus groups to understand physicians' and nurses' perspectives on error reporting in hospitals. *Joint Commission journal on quality and safety*, *30*(9), 471–479.

Jha, S., Toozs-Hobson, P., Parsons, M., & Gull, F. (2008). Does preoperative urodynamics change the management of prolapse. *Journal of obstetrics and gynaecology: the journal of the Institute of Obstetrics and Gynaecology*, *28*(3), 320–322

Joint Commission, 2007. Improving America's hospitals: the Joint Commission's annual report on quality and safety. 2007. *Washington, DC: The Joint Commission.*

Jones CB, Mark BA. The intersection of nursing and health services research: an agenda to guide future research. *Nurs Outlook.* 2005;53(6):324-332.

Kagan, I., & Barnoy, S. (2013). Organizational safety culture and medical error reporting by Israeli nurses. *Journal of nursing scholarship: an official publication of Sigma Theta Tau International Honor Society of Nursing*, *45*(3),273–280.

Katz-Navon, T.A.L., Naveh, E. and Stern, Z., 2005. Safety climate in health care organizations: A multidimensional approach. *Academy of Management Journal*, *48*(6), pp.1075-1089.

Kennedy, S., Bennett, S., & Weeks, D. E. (2001). Affected sib-pair analysis in endometriosis. *Human reproduction update*, *7*(4), 411–418.

Khoshakhlagh, A.H., Khatooni, E., Akbarzadeh, I. *(2019).* Analysis of affecting factors on patient safety culture in public and private hospitals in Iran. *BMC Health Serv Res* 19, 1009

Kicinski, M., Vrijens, J., Vermier, G., Hond, E. D., Schoeters, G., Nelen, V., Bruckers, L., Sioen, I., Baeyens, W., Van Larebeke, N., Viaene, M. K., & Nawrot, T. S. (2015). Neurobehavioral function and low-level metal exposure in adolescents. *International journal of hygiene and environmental health*, *218*(1), 139–146.

Kieft, R.A., de Brouwer, B.B., Francke, A.L. *et al.* (2014). How nurses and their work environment affect patient experiences of the quality of care: a qualitative study. *BMC Health Services Research* 14, 249.

Kim, S. H., & Weng, S. J. (2018). Incorporating work experience of medical staff into patient safety climate management: a multi-group analysis. *BMC health services research*, *18*(1), 919.

Kingdom of Saudi Arabia (2018). Kingdom of Saudi Arabia Healthcare Overview 2018. The Pulse: 8th Edition.

Kirch, W. (2008). Validity. In W.Kirch (Ed.), Encyclopedia of public health (pp.1440), New York, NY: Springer.

Kirk, K., & Saliba, K. J. (2007). Targeting nutrient uptake mechanisms in Plasmodium. *Current drug targets*, *8*(1), 75–88

Kohn LT, Corrigan JM, Donaldson MS, (Eds): To Err is Human. Building a Safer Health System. 1999, Washington DC: National Academy Press

Kohn, T. P., Kohn, J. R., & Ramasamy, R. (2018). Effect of Sperm Morphology on Pregnancy Success via Intrauterine Insemination: A Systematic Review and Meta-Analysis. *The Journal of urology*, *199*(3), 812–822.

Kroening, D., Lewis, M., & Weissenbacher, G. (2015). Under-approximating loops in C programs for fast counterexample detection. *Formal methods in system design*, *47*, 75–92.

Kumbi, M., Hussen, A., Abate Lette, S. N., & Morka, G. (2020). Patient safety culture and associated factors among health care providers in bale zone hospitals, southeast ethiopia: An institutional based cross-sectional study. *Drug, healthcare and patient safety*, *12*, 1.

Kuo, T.H. 2011. How to improve organizational performance through learning and knowledge. International Journal of Manpower 32:581-603.

Kuper A, Lingard L, Levinson W. (2008). Critically appraising qualitative research. BMJ. 2008;337: a1035.

Labuschagne, A. (2003). Qualitative research: Airy fairy or fundamental? The Qualitative Report, 8(1), Article 7.

Lardner, B., & Loman, J. (2003). Growth or reproduction? Resource allocation by female frogs Rana temporaria. *Oecologia*, *137*(4), 541–546.

Lawati, M., Dennis, S., Short, S. D., & Abdulhadi, N. N. (2018). Patient safety and safety culture in primary health care: a systematic review. *BMC family practice*, *19*(1), 104.

Lave, J.& Wenger, E. (1991). Situated learning: Legitimate peripheral participation. Google books

Leape, L. L., & Fromson, J. A. (2006). Problem doctors: is there a system-level solution. *Annals of internal medicine*, *144*(2), 107–115.

Leape LL, Berwick DM. Five years after To Err Is Human: what have we learned. *JAMA*. 2005;293(19):2384-2390.

Lee, K. H., Chin, N. K., Tan, W. C., & Lim, T. K. (1999). Hospitalised low-risk community-acquired pneumonia: outcome and potential for cost- savings. *Annals of the Academy of Medicine, Singapore*, *28*(3), 389–391.

Lee, S. E., & Quinn, B. L. (2020). Safety culture and patient safety outcomes in East Asia: a literature review. *Western journal of nursing research*, *42*(3), 220- 230.

Leininger, M. (1994). Evaluation criteria and critique of qualitative research studies. In: Morse J (ed). Critical Issues in Qualitative Research Methods. Thousand Oaks: Sage, 1994,95–115.

Leonard, W. R., Snodgrass, J. J., & Robertson, M. L. (2010). Evolutionary Perspectives on Fat Ingestion and Metabolism in Humans. In J. P. Montmayeur (Eds.) et. al., *Fat Detection: Taste, Texture, and Post Ingestive Effects*. CRC Press/Taylor & Francis.

Lincoln, Y. S. and Guba, E. G. (1985). Naturalistic inquiry. Beverly Hills, CA: Sage, 1985.

Lingard, E. A., Katz, J. N., Wright, E. A., Sledge, C. B., & Kinemax Outcomes Group (2004). Predicting the outcome of total knee arthroplasty. *The Journal of bone and joint surgery. American volume*, *86*(10), 2179–2186.

Long, T. and Johnson, M. (2000). Rigour, reliability and validity in qualitative research. Clinical Effect Nurs 2000; 4:30-37.

Luck, L., Jackson, D. and Usher, K. (2006). Case study: a bridge across paradigms. *Nursing Inquiry* 13(3): 103-109.

Luna, D. and Forquer Gupta, S. (2001). An integrative framework for cross-cultural consumer behavior. *International Marketing Review*, Vol. 18 No. 1, pp. 45- 69. https://doi.org/10.1108/02651330110381998

Lundstrom K. (2002). Semliki forest virus-based expression for versatile use in receptor research. *Journal of receptor and signal transduction research*, *22*(1-4), 229–240.

Mannion, R., and Davies, H. (2018). Understanding organisational culture for healthcare quality improvement *BMJ pp 1-4*; 363: k4907

Manser T. (2009). Teamwork and patient safety in dynamic domains of healthcare: a review of the literature. *Acta anaesthesiologica Scandinavica*, *53*(2), 143– 151.

Mardon, J., Saunders, S. M., & Bonadonna, F. (2011). Comments on recent work by Zhang and colleagues: "Uropygial gland-secreted alkanols contribute to olfactory sex signals in budgerigars". *Chemical senses*, *36*(1), 3–7.

Mazen I. A. (2017). Clinical Management of Gender in Egypt: Intersexuality and Transsexualism. *Archives of sexual behavior*, *46*(2), 369–372.

Mazzocco, K., Petitti, D. B., Fong, K. T., Bonacum, D., Brookey, J., Graham, S., Lasky, R. E., Sexton, J. B., & Thomas, E. J. (2009). Surgical team behaviors and patient outcomes. *American journal of surgery*, *197*(5), 678–685.

Mearns, K.J., Flin, R. Assessing the state of organizational safety—culture or climate. *Curr Psychol* 18, 5–17 (1999).

Merriam, S.B., 1998. *Qualitative Research and Case Study Applications in Education. Revised and Expanded from" Case Study Research in Education."*. Jossey- Bass Publishers, 350 Sansome St, San Francisco, CA 94104.

McCulloch, P., Altman, D. G., Campbell, W. B., Flum, D. R., Glasziou, P., Marshall, J. C., Nicholl, J., Balliol Collaboration, Aronson, J. K., Barkun, J. S., Blazeby, J.

M., Boutron, I. C., Campbell, W. B., Clavien, P. A., Cook, J. A., Ergina, P.L., Feldman, L. S., Flum, D. R., Maddern, G. J., Nicholl, J., … Vandenbroucke, (2009). No surgical innovation without evaluation: the IDEAL recommendations. *Lancet (London, England)*, *374*(9695), 1105–1112. (2009). State of the science: Extending the benefits of addiction treatment. *Journal of substance abuse treatment*, *36*(2), 172–173.

McSherry A. (2013). Jacques Lacan's theory of the subject as real, symbolic and imaginary: how can Lacanian theory be of help to mental health nursing practice. *Journal of psychiatric and mental health nursing*, *20*(9), 776–781.

McSherry R. (2004). Practice development and health care governance: a recipe for modernization. *Journal of nursing management*, *12*(2), 137–146.

McSherry, R., & Haddock, J. (1999). Evidence-based health care: its place within clinical governance. *British journal of nursing (Mark Allen Publishing)*, *8*(2),113–117.

Merriam, S. B. (1998). *Qualitative research and case study applications in education. revised and expand from casestudy research in education* (second). San Francisco, USA: Jossey-Bass Publishers.

Merriam, S. B. (2008). *Qualitative research: A guide to design and implementation. revised and expand from qualitative research and case study application in education* (T. Edition, Ed.). San Francisco, USA: Jossey-Bass Publishers.

Mills, A. J., Durepos, G., and Wiebe, E. (2010). Introduction. In A. J. Mills, G. Durepos, & E. Wiebe (Eds.), Encyclopedia of case study research, xxxi- xxxiv,London: SAGE Publications.

Miller, R. and Minton, C. A. (2016). Interpretative Phenomenological Analysis: A Contemporary Phenomenological Approach. Boise State University Scholar Works, Counselor Education Faculty Publications and Presentations, page 1-12.

Mingmalairak, C., Ungbhakorn, P. and Paocharoen, V., 2009. Efficacy of antimicrobial coating suture coated polyglactin 910 with tricosan (Vicryl plus) compared with polyglactin 910 (Vicryl) in reduced surgical site infection of appendicitis, double blind randomized control trial, preliminary safety report. *Medical journal of the Medical Association of Thailand*, *92*(6), p.770.

Miles M.B., Huberman A.M. & Saldana J. (2014) ~ Qualitative Data Analysis: A Methods Sourcebook. Sage, Californinia. National Institute for Health and Care Excellence (2012) Quality Standard for Patient Experience in Adult NHS Services. Retrieved from http://publications.nice.org.uk/quality- standard-for-patientexperience-in-adult-nhs-services-qs15 on 09 May 2014.

Mitchell P. H. (2008). Transitions. *Nursing outlook*, *56*(1), 3.

Mitchell, A.J., Yadegarfar, M., Gill, J. and Stubbs, B., 2016. Case finding and screening clinical utility of the Patient Health Questionnaire (PHQ-9 and PHQ-2) for depression in primary care: a diagnostic meta-analysis of 40 studies. *BJPsych open*, *2*(2), pp.127-13

Morley, D. (2016). Applying Wenger's communities of practice theory to placement learning. *Nurse Education Today*, *39*(April), 161-162.

Moustakas, C. (1994). Phenomenological research methods. Thousand Oaks, CA: Sage.

Mrayyan M. T. (2007). Nursing practice problems in private hospitals in Jordan: students' perspectives. *Nurse education in practice*, *7*(2), 82–87.

Munhall, P. L. (2006). Nursing research: A qualitative perspective. 4th edition. Jones and Bartlett Publishers, Canada

Mwachofi, A., Walston, S. L., & Al-Omar, B. A. (2011). Factors affecting nurses' perceptions of patient safety. *International journal of health care quality assurance*.

Nagpal, K., & Bennett, N. (2013). Colorectal surgery and its impact on male sexual function. *Current urology reports*, *14*(4), 279–284.

National Quality Forum. (2006). *A national framework and preferred practices for palliative and hospice care quality*. Washington DC: National Quality Forum. [Google Scholar]

Naveh, E., & Katz-Navon, T. (2014). Antecedents of willingness to report medical treatment errors in health care organizations: a multilevel theoretical framework. *Health care management review*, *39*(1), 21–30.

Nieva and Sorra (2004). Safety culture assessment: A tool for improving patient safety in healthcare organizations. Quality and Safety in Health Care 12 Suppl 2(suppl 2): ii17-23

Noble, H. and Smith, J. (2015). Issues of validity and reliability in qualitative research. *Evid Based Nurs* 18(2):34-35.

NPSA, 2007 Improving America's Hospitals. *The Joint Commission's Annual Report on Quality and Safety*

Oyebode F. (2013). Clinical errors and medical negligence. *Medical principles and practice: international journal of the Kuwait University, Health Science Centre*, *22*(4), 323–333.

Palaganas, E. C., Sanchez, M. C., Molintas, M. P. and Caricativo, R. D. (2017). Reflexivity in Qualitative Research: A Journey of Learning. *The Quality Report* (TQR), 22(2):426-438.

Parahoo, K. (2006). Nursing research principles, processes and issues (2nd ed.). Hampshire, UK: Palgrave Macmillan.

Parand, A., Dopson, S., Renz, A., & Vincent, C. (2014). The role of hospital managers in quality and patient safety: a systematic review. *BMJ open*, *4*(9), e005055.

Parker, D., Lawrie, M., Hudson, P. (2006). A framework for understanding the development of organisational safety culture. Safety Science 44, 551–562.

Parker G. C. (2009). Retraction: "Derivation of human sperm from embryonic stem cells". *Stem cells and development*, *18*(7), 1111.

Patterson, R., Tripp, L., Rogers, J. A., Boydstun, A. S., & Stefik, A. (2009). Modeling the simulated real-world optic flow motion aftereffect. *Journal of the Optical Society of America. A, Optics, image science, and vision*, *26*(5), 1202–1211.

Patton, M. Q. (2012). Qualitative Research and Evaluation Methods. 3rd ed. Thousand Oaks, CA: Sage; 2002.

Pérez, M.M., Dafonte, C., & Gómez, A. (2018). Traceability in Patient Healthcare through the Integration of RFID Technology in an ICU in a Hospital. *Sensors Basel* vol 18, iss5 1627

Pezalla, A. E., Pettigrew, J. and Miller-Day, M. (2012). Researching the researcher- as-instrument: an exercise in interviewer self-reflexivity. *Qual Res.* 2012 April1; 12(2): 165–185.

Pezzolesi, C., Ghaleb, M., Kostrzewski, A., & Dhillon, S. (2013). Is Mindful Reflective Practice the way forward to reduce medication errors. *The International journal of pharmacy practice*, *21*(6), 413–416.

Piper, D., Lea, J., Woods, C. *et al.* (2018). The impact of patient safety culture on handover in rural health facilities. *BMC Health Serv Res* 18, 889.

Price, S. M., Stanhope, R., Garrett, C., Preece, M. A., & Trembath, R. C. (1999). The spectrum of Silver-Russell syndrome: a clinical and molecular genetic study and new diagnostic criteria. *Journal of medical genetics*, *36*(11), 837–842.

Pronovost, P., Holzmueller, C. G., Needham, D. M., Sexton, J. B., Miller, M., Berenholtz, S., Wu, A. W., Perl, T. M., Davis, R., Baker, D., Winner, L., & Morlock, L. (2006). How will we know patients are safer? An organization-wide approach to measuring and improving safety. *Critical care medicine*, *34*(7), 1988–1995.

Queensland government (2013). Understanding safety culture. Department of justice and attorney general. Workplace health and safety Queensland.

Rahman, R., & Alsharqi, O. Z. (2018). What drove the health system reforms in the Kingdom of Saudi Arabia? An analysis. *International Journal of Health Plan Manage*. 34(1):100-110.

Reader, A. J., & Zaidi, H. (2007). Advances in PET Image Reconstruction. *PET clinics*, *2*(2), 173–190.

Reis, J. P., Auer, R., Bancks, M. P., Goff, D. C., Jr, Lewis, C. E., Pletcher, M. J., Rana, J. S., Shikany, J. M., & Sidney, S. (2018). Reis et al. Respond. *American journal of public health*, *108*(4), e12.

Rodziewicz TL, Hipskind JE. (2020). Medical Error Prevention. [Updated 2020 May 5]. In: Stat Pearls [Internet]. Treasure Island (FL): Stat Pearls Publishing; 2020 Jan-.

Rogers, S. N., Ahad, S. A., & Murphy, A. P. (2007). A structured review and theme analysis of papers published on 'quality of life' in head and neck cancer: 2000-2005. *Oral oncology*, *43*(9), 843–868.

Rogers, E., Griffin, E., Carnie, W., Melucci, J., & Weber, R. J. (2017). A Just Culture Approach to Managing Medication Errors. *Hospital pharmacy*, *52*(4), 308–315.

Rolfe, G. (2006). Validity, trustworthiness and rigour: quality and the idea of qualitative research. *J Adv Nurs* 2006; 53:03–10.

Rosen, M. A., Diaz Granados, D., Dietz, A. S., Benishek, L. E., Thompson, D., Pronovost, P. J., & Weaver, S. J. (2018). Teamwork in healthcare: Key discoveries enabling safer, high-quality care. *The American psychologist*, *73*(4), 433–450.

Rubin, H. J., Rubin, I. S. (2005). Qualitative Interviewing: The Art of Hearing Data. Thousand Oaks, CA: Sage; 2005.

Sammer, C. E., Lykens, K., Singh, K. P., Mains, D. A., & Lackan, N. A. (2010). What is patient safety culture? A review of the literature. *Journal of nursing scholarship*

Sampson, H. (2004). Navigating the waves: The usefulness of a pilot in qualitative research. *Qualitative Research*, *4*, 383–402.

Sandelowski, M. (1986). The problem of rigor in qualitative research. *Adv Nurs Sci* 1986; 8:27–37.

Sandelowski, M. (1993). Rigor or rigor mortis: the problem of rigor in qualitative research revisited. *Adv Nurs Sci* 1993; 16:1–8.

Sargeant, J. (2012). Qualitative Research Part II: Participants, Analysis, and Quality Assurance. Journal of Graduate Medical Education, pp. 1-3.

Sawalem, M., Selic, E., & Herbell, J. D. (2009). Hospital waste management in Libya: a case study. *Waste management (New York, N.Y.)*, *29*(4), 1370–1375.

Sexton D. J. (2006). Carbapenems for surgical prophylaxis. *The New England journal of medicine*, *355*(25), 2693–2695.

Shipton, H., Armstrong, C., West, M., & Dawson, J. (2008). The impact of leadership and quality climate on hospital performance. *International journal for qualityin health care: journal of the International Society for Quality in Health Care*, *20*(6), 439–445.

Shostek K. (2007). Developing a culture of safety in ambulatory care settings. *The Journal of ambulatory care management*, *30*(2), 105–113.

Siassakos, D., Crofts, J. F., Winter, C., Weiner, C. P., & Draycott, T. J. (2009). The active components of effective training in obstetric emergencies. *BJOG: an international journal of obstetrics and gynaecology*, *116*(8), 1028–1032.

Siemsen, I. M., Madsen, M. D., Pedersen, L. F., Michaelsen, L., Pedersen, A. V., Andersen, H. B., & Østergaard, D. (2012). Factors that impact on the safety of patient handovers: an interview study. *Scandinavian journal of public health*, *40*(5), 439–448.

Simsekler, M. C. E., Qazi, A., Alalami, M. A., Ellahham, S., & Ozonoff, A. (2020). Evaluation of patient safety culture using a random forest algorithm. *Reliability Engineering & System Safety*, *204*, 107186.

Singer, M., de Waaij, D. J., Morré, S. A., & Ouburg, S. (2015). CpG DNA analysis of bacterial STDs. *BMC infectious diseases*, *15*, 273.

Singer, S., Meterko, M., Baker, L., Gaba, D., Falwell, A. and Rosen, A., 2007. Workforce perceptions of hospital safety culture: development and validation of the patient safety climate in healthcare organizations survey. *Health services research*, *42*(5), pp.1999-2021.

Sloan, A. and Bowe, B. (2014). Phenomenology and Hermeneutic Phenomenology: The Philosophy, the Methodologies and Using Hermeneutic Phenomenology to Investigate Lecturers' Experiences of Curriculum Design. *Quality & Quantity*, Vol.48, no.3, pp.1291-1303.

Smith, J. A., and Osborn, M. (2008). Interpretative phenomenological analysis. In J. A. Smith (Ed.), *Qualitative psychology: A practical guide to research methods (2nd ed.)* (pp. 53-80). Thousand Oaks, CA: SAGE.

Smith, J. A., Flowers, P., and Larkin, M. (2009). *Interpretative phenomenological analysis: Theory, method, and research.* Thousand Oaks, CA: SAGE.

Smith, S. U., Hayes, S., & Shea, P. (2017). A Critical Review of the Use of Wenger's Community of Practice (CoP) Theoretical Framework in Online and Blended Learning Research, 2000-2014. *Online Learning, 21*(1), 209-237.

Snyder, W., Wenger, E., & de Sousa Briggs, X. (2004). Communities of practice in government: Leveraging knowledge for performance. *Public Manager, 32*(4),17-22.

Sohn, D.H. (2013). Negligence, genuine error, and litigation. *International journal ofgeneral medicine.* Vol 6. Pp 49-56.

Sorra, J. and Nieva, V.F., 2004. *Hospital survey on patient safety culture*. Agency for Healthcare Research and Quality.

Sørensen, A.L., Lisby, M., Nielsen, L.P., Poulsen, B.K. and Mainz, J., 2013. The medication process in a psychiatric hospital: are errors a potential threat to patient safety. *Risk management and healthcare policy*, *6*, p.23.

Stavrianopoulos, T. (2012). The development of patient safety culture. *Health Science Journal* Volume 6, Issue 2 pp201.

Stelfox, H. T., & Goverman, J. (2008). The number, content, and quality of randomized controlled trials in the prevention and care of injuries. *The Journal of trauma*, *65*(6), 1488–1493.

Stoyanova, R., & Dimova, R. (2020). A national study of patient safety culture in hospitals in Bulgaria.

Strauss, A. & Corbin, J. (1990). *Basics of qualitative research: Grounded theory procedures and techniques.* Newbury Park, CA: Sage.

Sullivan, D., & von Wachter, T. (2009). Average Earnings and Long-Term Mortality: Evidence from Administrative Data. *The American economic review*, *99*(2), 133–138.

Sutton, J., & Austin, Z. (2015). Qualitative Research: Data Collection, Analysis, and Management. *The Canadian journal of hospital pharmacy*, *68*(3), 226–231.

Tereanu, C., Sampietro, G., Sarnataro, F., Mazzoleni, G., Pesenti, B., Sala, L. C., Cecchetti, R., Arvati, M., Brioschi, D., Viscardi, M., Prati, C., Sala, G., & Barbaglio, G. G. (2017). Exploring patient safety culture in preventive medicine settings: an experience from Northern Italy. *Journal of preventive medicine and hygiene*, *58*(2), E121–E129.

Thomas, R., Christopher, D. J., & Balamugesh, T. (2005). We read with great interest the case report 'Eosinophilic pericardial effusion in Churg-Strauss syndrome' by Stoll Berger et al. *Respiratory medicine*, *99*(12), 1618–1619.

The National Patient Safety Agency Annual Report and Accounts (NPSA) 2007/08 HC 721

The Ministry of Economy& planning 2018.

The Safety of Nuclear Installations 1993.

Todd C., Reid N. & Robinson G. (1989) The quality of nursing care on wards working eight and twelve hour shifts: a repeated measures study using the MONITOR index of quality of care. International Journal of Nursing Studies. 26 (4): 359-68

Tranter, S., Irvine, F., & Collins, E. (2012). Innovations aimed at improving the physical health of the seriously mentally ill: an integrative review. *Journal of clinical nursing, 21*(9-10), 1199–1214.

Truitt, E., Thompson, R., Blazey-Martin, D., NiSai, D., & Salem, D. (2016). Effect of the Implementation of Barcode Technology and an Electronic Medication Administration Record on Adverse Drug Events. *Hospital pharmacy*, *51*(6), 474–483.

Turato, E. R. (2005). Qualitative and quantitative methods in health: definitions, differences and research subjects. Revista de Saude Publica. 2005; 39(3):507–514.

Turner, P. and Turner, S. (2012). Triangulation in practice. Centre for Interaction Design, School of Computing. Edinburgh Napier University, Edinburgh, EH10 5DT.

Ukrainski, P. (2016). Classification accuracy assessment. Confusion matrix method. SCGIS, remote sensing. Envi. 50 NORTH GEOSPATIAL BLOG.

Ulrich, B., & Kear, T. (2014). Patient Safety and Patient Safety Culture: Foundations of Excellent Health Care Delivery. *Nephrology nursing journal: journal of theAmerican Nephrology Nurses' Association, 41*(5), 447–456.

Ulrich, B. and Kear, T., 2014. Patient Safety and Patient Safety Culture: Foundations of Excellent Health Care Delivery. *Nephrology Nursing Journal*, *41*(5).

Vats, A., Vincent, C.A., Nagpal, K., Davies, R.W., Darzi, A. and Moorthy, K., 2010. Practical challenges of introducing WHO surgical checklist: UK pilot experience. *Bmj*, *340*.

Van der Riet, P. (2012). Reflexivity: A mainstay in promoting rigor and trustworthiness in qualitative research. *Philippine Journal of Nursing, 82, 28-32.*

Varallo, F. R., Passos, A. C., Nadai, T. R., & Mastroianni, P. C. (2018). Incidents reporting: barriers and strategies to promote safety culture. *Revista da Escola de Enfermagem da U S P*, *52*, e03346.

Vermeir, P., Vandijck, D., Degroote, S., Peleman, R., Verhaeghe, R., Mortier, E., Hallaert, G., Van Daele, S., Buylaert, W. and Vogelaers, D., (2015). Communication in healthcare: a narrative review of the literature and practical recommendations. *International journal of clinical practice*, *69*(11), pp.1257-1267.

Vincent, M. B., & Luna, R. A. (1999). Cervicogenic headache: a comparison with migraine and tension-type headache. *Cephalalgia: an international journal of headache*, *19 Suppl 25*, 11–16.

Vincent, C., Stanhope, N. and Crowley-Murphy, M., 1999. Reasons for not reporting adverse incidents: an empirical study. *Journal of evaluation in clinical practice*, *5*(1), pp.13-21.

Wachter, R.M. and Pronovost, P.J., 2009. Balancing "no blame" with accountability in patient safety. *N Engl J Med*, *361*(14), pp.1401-1406.

Wachter, J.K., Yorio, L.P. (2014). A system of safety management practices and worker engagement for reducing and preventing accidents: An empirical and theoretical investigation. *Accident Analysis & Prevention* Volume 68. Pages117-130

Wagner A. J. (2013). Sarcoma. *Hematology/oncology clinics of North America*, *27*(5), xi–xii.

Walston, Al-Omar and Al-Mutari (2008). The Changing Face of Healthcare in Saudi Arabi. Annals of Saudi medicine 28(4):243-250.

Walston, S. L., Al-Omar, B. A., & Al-Mutari, F. A. (2010). Factors affecting the climate of hospital patient safety: a study of hospitals in Saudi Arabia. *International journal of health care quality assurance*, *23*(1), 35– 50.

Wami, W. M., Nausch, N., Midzi, N., Gwisai, R., Mduluza, T., Woolhouse, M. E., & Mutapi, F. (2016). Comparative Assessment of Health Benefits of PraziquantelTreatment of Urogenital Schistosomiasis in Preschool and Primary School-Aged Children. *BioMedresearchinternational*, *2016*, 9162631.

Waring P. (2005). Redox active calcium ion channels and cell death. *Archives of biochemistry and biophysics*, *434*(1), 33–42. .

Waters, N.F., Hall, W.A., Brown, H., Espezel, H. and Palmer, L., 2012. Perceptions of Canadian labour and delivery nurses about incident reporting: a qualitativedescriptive focus group study. *International journal of nursing studies*, *49*(7), pp.811-821.

Waterson, P., Carman, E. M., Manser, T., & Hammer, A. (2019). Hospital Survey on Patient Safety Culture (HSPSC): a systematic review of the psychometric properties of 62 international studies. *BMJ open*, *9*(9), e026896.

Weaver, S. J., Lubomksi, L. H., Wilson, R. F., Pfoh, E. R., Martinez, K. A., & Dy, S.M. (2013). Promoting a culture of safety as a patient safety strategy: a systematic review. *Annals of internal medicine*, *158*(5 Pt 2), 369–374.

Weingart SN, Cleary A, Stuver SO, et al. Assessing the quality of pain care in ambulatory patients with advanced stage cancer. *J Pain Symptom Manage*. 2012;43(6):1072-1081.

Weingart, S. N., Farbstein, K., Davis, R. B., & Phillips, R. S. (2004). Using a multihospital survey to examine the safety culture. *Joint Commission journal on quality and safety*, *30*(3), 125–132.

Wenger E. (1998). *Communities of practice: Learning, meaning and identity*. New York, NY: Cambridge University Press.

Wenger, E. (2000). Communities of practice and social learning systems. Organization, 7(2), 225–246.

Wenger, E., McDermott, R., & Snyder, W. (2002). *Cultivating communities of practice: A guide to managing knowledge.* Cambridge, MA: Harvard University Press.

Wenger, E. (2004). Knowledge management as a doughnut. Ivey Business Journal.

Wenger, E., White, N., Smith, J.D., Rowe, K. (2005). Technology for communities. In L. Langelier (Ed.), Working, learning and collaborating in a network: Guide to the implementation and leadership of intentional communities of practice (pp.71–94).Quebec City: CEFIRO.

Wenger, E., White, N., & Smith, J. D. (2009). Digital habitats: Stewarding technology for communities. Portland, OR: CP Square.

Wenger, E. (2010). Communities of practice and social learning systems: The career of a concept. In C. Blackmore (Ed.), Social Learning Systems and Communities of Practice (pp. 179–198). London: Springer

Wenger, E., Trayner, B. and De Laat, M., 2011. Promoting and assessing value creation in communities and networks: A conceptual framework. *The Netherlands: Ruud de Moor Centrum*, *20*, pp.2010-2011.

Westrum R. (2004). A typology of organisational cultures. *Quality & safety in health care*, *13 Suppl 2* (Suppl2), ii22–ii27.

Whittemore, R., & Knafl, K. (2005). The integrative review: updated methodology. *Journal of advanced nursing*, *52*(5), 546–553.

WHO (2019)? Patient safety. World health organization.

WHO (2016)? Medication errors. Technical series on safer primary care. World health organization

Wiig, S., Aase, K., Bourrier, M., and Røise, O. (2018) Transparency in Health Care: Disclosing Adverse Events to the Public. Risk communication for the future. Pp 111-125 springer

William, M. K. (2006). Qualitative Validity. Web centre for Social Research Methods. Wilson, R.M., RUNCIMAN, W.B., GIBBERD, R.W., HARRISON, B.T., NEWBY,

L. and HAMILTON, J.D., 1995, The quality of Australian health care study. The Medical Journal of Australia, 163, pp. 458-471.

Wilson, J. I., Evans, M., Harji, D., & Sagar, P. M. (2012). Reply to Newman et al. *Colorectal disease: the official journal of the Association of Coloproctology of Great Britain and Ireland*, *14*(9), 1152.

Wolf Z.R. and Hughes R.G. (2008). Error Reporting and Disclosure. In: Hughes RG, editor. Patient Safety and Quality: An Evidence-Based Handbook for Nurses.Rockville (MD): Agency for Healthcare Research and Quality (US); 2008 Apr. Chapter 35.

Wong, G. K., & Poon, W. S. (2008). Re: Magnesium sulfate in the management of patients with aneurysmal subarachnoid hemorrhage: a randomized, placebo-controlled, dose-adapted trial (Muroi et al. Surg Neurol 2008;69:33- 39). *Surgical neurology*, *70*(1), 109–110.

Wong, F. K., Nath, A. R., Chen, R. H., Gardezi, S. R., Li, Q., & Stanley, E. F. (2014). Synaptic vesicle tethering and the CaV2.2 distal C-terminal. *Frontiers in cellular neuroscience*, *8*, 71.

World Health Organization. Patient safety: making health care safer [Internet]. Geneva: WHO; 2017 [Accessed 2018 Nov 29]. 20 p. Available from:

World Health Organisation (2011). Definitions of key concepts from the WHO patient safety curriculum guideline 2011. Retrieved March 10, 2020

World Health Professional Alliance (2004). World alliance for patient safety: Forward program. WHO, Geneva, Switzerland.

World Health Organization. Conceptual framework for the international classification for patient safety: version 1.1 [Final technical report]. Geneva: WHO; 2009January. [Accessed 2020 February 28].

Yates V. (2005). Acne: current treatment. *Clinical medicine (London, England)*, *5*(6), 569–572.

Ye, c. (2019). A Real-Time Early Warning System for Monitoring Inpatient Mortality Risk: Prospective Study Using Electronic Medical Record Data. *Journal of medical internet research*. Vol 21, no 7.

Yin, R. K. (1994). Case study research: Design and methods (2nd ed.). Thousand Oaks, CA: Sage.

Yin, R. K. (1998). *The abridged version of case study research: Design and method.* In L. Bickman & D. J. Rog (Eds.), *Handbook of applied social research methods* (p. 229–259). Sage Publications, Inc.

Yin, R. K. (2009). *Case study research: Design and method* (4th ed.). Thousand Oaks, CA: Sage.

Zachary, W., Maulitz, R. C., & Zachary, D. A. (2016). What Causes Care Coordination Problems? A Case for Microanalysis. *EGEMS (Washington, DC)*, *4*(3), 1230.

Zakari, N. M. (2011). Attitude of academic ambulatory nurses toward patient safety culture in Saudi Arabia. *Life Science Journal*, *8*(3), 230-7. Zhang H, Wiegmann DA, von Thaden TL, Sharma G, Mitchell AA. Safety culture: a concept in chaos? Proceedings of the Human Factors and Ergonomics Society Annual Meeting. 2002; 46:1404–1408.

Zhang, Y., Wang, H., Li, Y., & Peng, Y. (2018). A review of interventions against fetal alcohol spectrum disorder targeting oxidative stress. *International journal of developmental neuroscience: the official journal of the International Society for Developmental Neuroscience*, *71*, 140–145.

Zucker, D. M. (2001). Using case study methodoly in nursing research. *The Qualitative Report*, *6*(2), 1-13.