

Patient Safety Implications and Outcomes Within Organisation Where a Strong or
Weak Patient Safety Culture Exist. A Scoping Review of Literature
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Chapter One: Introduction

Background Information

Enhancing patient safety and other healthcare quality dimensions often requires implementation of changes at all the four levels of healthcare system such as patient experience when interacting with the healthcare practitioners, functionality of care delivery units including nursing units, practices of organisations which house the microsystems, and environment of payment, policy, authorisation among other factors which are external to the actual care delivery process involved in the shaping of the context within which healthcare organisations can deliver care. According to WHO (2021), the patient safety often emerges as a result of the evolving complexity within the healthcare system leading to the rise of patient harm within the healthcare facilities, and it aims at preventing or reducing the risks, errors and harm which occur to the patients during the care delivery process. Similarly, NHS England (2020) reported that patient safety is fundamental in the delivery of quality vital care services and that there is a clear consensus that the quality of care from a global perspective should be safe, effective and patient-centred.

In addition to the realisation of key benefits of quality healthcare, Bukoh and Siah (2020), Cheng et al. (2020) and Zenati, Kennedy-Metz and Dias (2020) noted that quality healthcare services must be equitable, timely, efficient and integrated.

Therefore, there is need for formulating clear policies, enhancing leadership capacity and collection of appropriate data for driving safety improvement plans, skilled and competent healthcare teams as well as effective involvement of patients in the care delivery process as key strategies for successfully implementing patient safety programme. As reported in the previous studies by Cheng et al. (2020), Di Pietro et al. (2021) and Danzer et al. (2020), an effective healthcare system should consistently account for the increasing complexity within the healthcare settings which make healthcare practitioners and other people within the healthcare system prone to mistakes which may compromise the quality of care delivered to the patients. AHRQ (2020) noted that a patient might be prescribed with wrong medications as a result of a mix-up that took place due to similar packaging. In such case, prescription often passes through varying levels of care starting with the practitioner, doctor, in the ward section, pharmacist involving in the dispensing of drugs and finally the nurses who administer wrong medication to the patient.

Specifically, lack of standard procedures for medication storage, ineffective communication system among the healthcare team, lack of verification standards prior to the medication administration as well as lack of involvement of patient in the care delivery process could be associated with the occurrence of patient safety problem registered in the case described by AHRQ (2020).

Adverse events are injuries or harm resulting from medical care errors and they probably represent a significant source of infections and death universally (NHS England, 2020). Even though there is still imprecise estimate about the side of this problem, there are higher chances that millions of people are often experiencing disabling injuries or deaths which are directly attributed to the medical care (Di Pietro et al., 2021). According to Bukoh and Siah (2020) and Zenati, Kennedy-Metz and Dias (2020), injuries within the healthcare setting can take place in association with many medical interventions ranging from the tainted blood supplies, healthcare-related infections to administration of substandard drugs. Even though most of these adverse events are often preventable, successful realisation of a totally safe health care is often compromised by the longstanding healthcare principle of “first, do no harm” which limit the ability of most of the care practitioners in making appropriate decision during the patient management process. Comprehensive understanding of the types of adverse events which take place in the hospital setting, their precise scopes, frequency and preventability are key in the formulation of effective policies for reducing incidences of harm from the medical care (Danzer et al., 2020). Nonetheless, most of the health care facilities are still unable to meet all the patient safety standards because of the varying patient needs and complexities of the healthcare conditions to be managed.

The World Health Organisation (WHO) has in the recent years launched series of activities focused on defining the precise topics for research into patient safety in a global perspective as a strategy for facilitating the identification of interventions for reducing incidences of harm and enhancing the quality of care offered to billions of people worldwide who come into contact with the healthcare system (WHO, 2021). The relationship between nurse staffing and the incidences of adverse outcomes among patients has been extensively researched, with previous studies providing varying results among this correlation. For example, Cheng et al. (2020) and Di Pietro et al. (2021) noted that nurse competency helps in reducing the occurrence of adverse events on patients, while Bukoh and Siah (2020) and Zenati,

Kennedy-Metz and Dias (2020) on the contrary established that healthcare practitioner competency alone cannot ensure reduced or completely eliminate adverse events as other stakeholders in the healthcare system, including patients and pharmaceutical companies should also actively play their role. With reference to the evidence provided in these studies, it is important to note that realisation of an effective patient safety culture does not only depend on the management philosophies of the healthcare organisation but competency levels of all stakeholders within the general healthcare system, such as the pharmaceutical companies, legislative agencies, healthcare practitioners, patients and their families.

Problem Statement

Unsafe and care services of poor quality are key influencers of injuries and deaths among large number of patients globally (Danzer et al., 2020; Bukoh & Siah, 2020). According to Zenati, Kennedy-Metz and Dias (2020), most of the therapeutic practices and risks linked with healthcare are increasingly emerging as important challenge for patient safety and meaningfully contributing to the burden of harm. Existing evidence outlined factors such as medical errors, hospital-acquired infections, diagnostic errors, radiation errors to be directly involved in compromising the quality of patient safety and should be appropriately addressed (Cheng et al., 2020; NHS England, 2020; Zenati, Kennedy-Metz & Dias, 2020). Specifically, Zenati, Kennedy-Metz and Dias (2020) reported that the adverse events caused by risky care are among the top ten influencers of disability and death globally and should be addressed. Among the high-income countries such as the US, UK, Germany and France, the WHO (2021) reported that at least 10% of the total patient population are often vulnerable to receive unsafe care, with 50% of the adverse events leading to such harms are preventable.

From a global perspective, at least 40% of the patients are often harmed in primary healthcare setting, with up to 85% of the adverse events leading to such harms are preventable. Specifically, most of the detrimental errors reported in the primary and outpatient care settings are resulting from misdiagnosis, prescription errors and inappropriate use of medications. Despite the growing efforts for enhancing patient safety, there is still limited knowledge regarding the most appropriate strategies for ensuring positive patient culture (Bukoh & Siah, 2020; Di Pietro et al., 2021). According to Cheng et al. (2020), healthcare organisations with

positive patient safety culture are often characterised with open communication among the team members, with nurses and other healthcare practitioners directly involved in the magnification of the significance of patient safety, incessant training for patient safety practice. Existing literature, such as Bukoh and Siah (2020) and Zenati, Kennedy-Metz and Dias (2020), has described patient safety culture as an effective approach for reducing medical error incidences in all types of healthcare settings. Nonetheless, the degree of patient safety has not been assessed within hospital settings with either strong or weak patient safety culture. Exploring patient safety culture is a fundamental requirement for realising improved patient safety as well as for reducing the incidences of medical errors which compromise care quality.

Research Aim, Questions and Objectives

Research Aim

The principal aim of this scoping review is to critically evaluate existing evidence about the patient safety implications and outcomes among healthcare organisations with either weak or strong patient safety culture. Therefore, this review would lead to the identification of key gaps in knowledge about patient safety culture which can be addressed by future research.

Research Questions

- What are the effects of organisational leadership on patient safety?
- What are the strategies for enhancing patient safety culture?
- What are the implications of patient safety culture in different healthcare settings?

Research Objectives

- To assess and report the operative leadership approach for enhancing patient safety culture.
- To explore the role of healthcare information technology and communication system in enhancing patient safety culture.
- To assess and report the effects of adverse events on patient safety.

Significance of The Research

Despite the growing number of studies focusing on strategies for enhancing patient safety, most of such studies have focused on healthcare organisations with either strong or weak patient safety culture no studies collecting data from both groups of hospital settings hence the generated outcomes from such studies cannot

be applied within a general hospital setting. Therefore, this scoping review focused on critically appraising evidence from studies involving healthcare organisations with both strong and weak patient safety culture leading to the generation of comprehensive knowledge that can be as a guide for developing an effective patient safety culture across all healthcare settings. Similar to other contemporary organisations, hospital leadership plays an important role in enhancing the quality of care provided to the patients. Therefore, successful completion of this review would lead to the identification the most appropriate leadership style in enhancing patient safety culture and delivery of safe and sustainable care services to the patients. The review would also facilitate the identification of factors influencing the occurrence of high incidences of adverse events which interfere with the quality of care and patient safety as well as the role of healthcare information technology as a key component of patient safety culture. In addition to critically appraising existing evidence about the patient safety culture within different types of hospital settings, this review would also lead to the identification of key gaps in literature which can be addressed by future research. Therefore, the results from this scoping review would be used as a guideline for motivating future research about the patient safety culture.

Research Outline

The present scoping review is organised into four chapters; introduction, methodology, literature review, conclusions and recommendations. After describing the background information, research questions, aim and objectives in the introduction chapter, research methods used in the literature search, identification and selecting for scoping review are outlined and their selection justified in the second chapter, methodology. Thereafter, evidence from the papers included in this scoping review was thematically analysed leading to the development of key themes to be critically appraised in order to facilitate identification of key gaps in knowledge which can be addressed by future research studies. The last chapter is organised into two key sections; conclusion which provide overall summary of the conducted scoping review and recommendations which provide suggestions for both future research and how the newly developed knowledge can be used for enhancing patient safety practice.

Chapter Two: Methodology

Introduction

In this chapter, the employed research methods and methodologies would be stated, explicated and its selection justified. Furthermore, the literature search strategy used during the identification and selection of most appropriate literature for review in this study would also be described in this chapter. Specifically, the inclusion criteria to be met by all the studies selected for the scoping review would be described and their practicality in the context of the research phenomenon explained. Some of the key aspects of the literature search process described in this chapter include identification of the keywords, selection of appropriate databases for literature search and eligibility criteria used for selecting appropriate literature for review.

Methodology Selection

The present study used a secondary research methodology involving collection and analysis of existing literature about the impacts of safety culture on care quality. The selection of a secondary methodology was influenced by the need to assess the nature of evidence presented in the previous studies about the research phenomenon and identify gaps in knowledge to motivate further research in this context. Specifically, a scoping review design of the secondary research methodology was used to critically appraise existing evidence about patient safety implications and outcomes within healthcare organisations with strong or weak patient safety culture. A scoping review is used for giving an extensive impression of the evidence about the research phenomenon, irrespective of the quality of previous studies involved and are useful during the examination of research areas which are emerging for key concept clarification and research gap identification (Munn et al., 2018). Patient safety is an imperative goal for all healthcare organisations and practitioners hence the adoption of a scoping review design allowed for collection and critical appraisal of existing evidence about this phenomenon from a general perspective.

Scoping review design enhanced generation of comprehensive information about the impacts of safety culture on patient outcomes as the synthesised data were collected from studies which adopted a wide variety of methodologies, such as qualitative, quantitative and mixed-methods approach. Such outcomes could not have been achieved if a systematic literature review or meta-analysis methodology

were employed as they involve critical appraisal of only qualitative and quantitative evidence presented in the previous studies respectively. Therefore, the scoping review methodology widened the general scope of the research phenomenon being investigated leading to the identification of a wide variety of knowledge gaps which can be addressed by future research. Consistent with Colquhoun et al. (2017), Pham et al. (2016) and Tricco et al. (2016), scoping reviews can be used for identifying research phenomenon for future systematic review while systematic reviews on the other hand are used for addressing more specific research questions which are based on specific criteria of interest such as population, intervention and outcome. Therefore, adoption of a scoping review methodology allowed for selection and critical appraisal of evidence about patient safety within the general healthcare domain contrary to what could have been achieved using the other literature review methodologies such as systematic reviews and meta-analysis where the generated knowledge could have been specific to a particular healthcare organisation, department or profession.

Literature Search Strategy

Formulation of reporting guidelines is among the essential components of developing a standard methodology for scoping reviews (Eriksen & Frandsen, 2018; Li et al., 2019). Specifically, a reporting guideline is a tool or checklist that is formulated using explicit methods and is used by literature reviewers, including scoping reviewers, to report findings from the research studies they included in their reviews (Li et al., 2019). Therefore, reporting checklist helps in increasing the transparency of methods, enables readers to judge reliability and validity of the selected studies for review as well as to use newly generated knowledge from the scoping review appropriately, including in enhancing realisation of an informed decision-making process (Li et al., 2019). Consistent with Eriksen and Frandsen (2018) and Mendes et al. (2019), literature search strategy includes an organised structure of keywords employed during database search process for identification of syndicating essential concepts of the research phenomenon. Adoption of a well-defined literature search strategy facilitated the determination of extraneous variables impacting the quality of review outcomes and the identification of lacunae or faults which may compromise the quality of evidence to be selected for review if not properly managed. The employed literature search strategy involved defined keywords and search terms, outlining the databases used for literature search

process and eligibility criteria used for determining the suitability each literature to be reviewed.

Keywords and Databases for Literature Search

The initial phase in literature search involves identification of keywords to be used for selecting the most appropriate literature from the databases. According to Pearce and Chang (2017), the quality of evidence selected for review is largely dependent on the types of keywords and search terms used during the literature search process. From this perspective, inability to recognise the most apposite keywords and search terms may compromise the overall quality of evidence selected for synthesis and the ability of the scoping review to generate new knowledge. In line with the clarifications by Ho et al. (2016) and Pearce and Chang (2017), the comprehensiveness of literature search process can be increased by using search methods such as wildcards, truncation and adjacency. Furthermore, the Boolean operators “AND”, “NOT” and “OR” were used for combining different keywords and search terms imputed into the search boxes as a strategy for restricting search results to only those studies containing the specific search terms and keywords hence facilitating improved homogeneity of evidence collected for knowledge synthesis and research gap identification.

The literature search process was performed on three databases which include CINAHL, Medline and ProQuest Health Management databases, which was selected because of their high reputations in indexing up-to-date and high-quality literature on general healthcare and patient welfare practices. Literature search was performed on the separate databases using the defined keywords, interconnected using Boolean operators, so as to facilitate identification of research papers with most appropriate evidence about the phenomenon of interest. With reference to the explanations by Ho et al. (2016) and Pearce and Chang (2017), keywords must define the context of the research phenomenon under investigation and that the literature search process must be evidently and expansively explained so as to allow easy replication by future reviewers. Keywords and search terms such as “patient safety OR patient safety culture” were keyed into the initial search lane of each of the three databases, then “patient safety implications OR patient safety outcomes” were entered into the second search lane while the keywords “healthcare organisation OR hospital setting OR primary care setting OR ambulatory setting OR infirmary OR nursing home OR hospice OR clinics” were inputted into the

third search lane. Successive search lanes were interconnected using the Boolean operator “AND”, a technique which allowed for the inclusion of only research papers with the specified keywords and search terms.

Eligibility Criteria

Inclusion Criteria

Connelly (2020) defined inclusion criteria as key standards that which every literature must meet to be chosen for the knowledge synthesis, and that they mainly involve purpose and primary outcomes of the studies targeted for new knowledge development, and identification of research gaps in the case of a scoping review. Precisely, the patient outcomes of interest for this review were defined as a strategy for ensuring homogeneity and comprehensiveness of knowledge generated from the scoping review and that the findings can be used to enhance patient care culture as well as the identification of key gaps in knowledge which can be addressed by future research. The approach was consistent with the clarifications by Connelly (2020) and Meline (2016) which noted that the reviewers have responsibility of guaranteeing that every literature for review has comparable research aim so as to enhance homogeneousness of the newly developed knowledge. Furthermore, only studies which assessed effects of patient safety culture on patient outcomes were selected for the review. Therefore, the primary patient outcomes that were considered during the review include mortality rates, readmissions, effectiveness safety of care, length of hospital stays and patient experience.

The second inclusion criterion was limited to only studies originally published in English language. Even though Connelly (2020) supported the use of language conversion services for decoding evidence from original language to preferred ones by the reviewer, Patino and Ferreira (2018) conversely criticised the efficiency of this technique by arguing that it can compromise the general quality of evidence as not every content would be successfully translated. Therefore, only originally published research papers in English language were selected for review. From a methodological perspective, the literature search process was limited to only primary studies irrespective of the methodological approach they adopted.

Therefore, qualitative, quantitative and mixed-methods research papers were included in this scoping review. The approach is consistent with the evidence in the study by Meline (2016) which noted that scoping reviews always include research

papers with large variety of methodological approaches hence reviewers must include methodological approaches for primary studies to be selected for review within the search protocol. Specifically, this approach led to the generation of more comprehensive knowledge about the research phenomenon as well as identification of key gaps in knowledge which should be addressed by future research. The last inclusion criterion was based on the publication timeline of literature, with only studies published in 2015-2021 selected for review.

Exclusion Criteria

Exclusion criteria are standards for disregarding studies in terms of quality, research purpose, outcomes and type of methodological approach adopted (Connelly, 2020; Patino & Ferreira, 2018). Therefore, a study which fails to meet any of the inclusion criteria should be excluded during the literature search and selection process. Specific to the present review, studies which explored the strategies for increasing quality of patient outcomes without focusing on patient safety culture were excluded. The approach was necessary for enhancing homogeneity and comprehensiveness of evidence to be collected for new knowledge synthesis. With reference to the explanations by Meline (2016), authenticity and quality of evidence in secondary studies are not certain. Furthermore, a scoping review is mainly focused on identifying key gaps in knowledge that can be used to advise further research within the research context, including execution of meta-analysis or systematic literature review which are important types of secondary research methodologies. The next exclusion criterion was based on the studies' full-text availability where all the research papers without full-text accessible were excluded. The inclusion of only studies with full-text formats allowed for critical assessment of quality of evidence presented in the whole literature rather than only those provided in the abstract section as in the case of studies with no full-text formats. Summary of the eligibility criteria used in this study is presented in the Table 1 below.

Table 1: Eligibility Criteria Used for Selecting Most Appropriate Studies for Scoping Review

Eligibility Criteria	Inclusion Criteria	Exclusion Criteria
Research Aim	Impacts of patient safety culture on patient implications and outcomes	Assessing patient outcomes without focusing on the impacts of patient safety

		culture Exploring safety cultures in healthcare settings such as general manufacturing industries.
Publication Variables	Published in 2015-present (2021) Originally published in English language Research papers with full-texts available.	Published in 2014 and earlier in non-English languages Research papers with only abstracts or no full-text available, mixed-methods research studies, such as systematic review, methodologies
Methodological Choice	Primary qualitative, quantitative or grey literatures, policies, reports	Secondary meta-analysis, narrative reviews or scoping reviews

Results from the Literature Search Process

The preliminary literature search process generated 2729 records which were further assessed using the defined eligibility criteria to facilitate the documentation of most appropriate studies for scoping review. The first step involved assessment and removal of duplicates, with 504 records being excluded. The resulting 2225 records were further taken through eligibility assessment based on their year and language of publication and primary purpose of the study. Specifically, a total of 407 records were eliminated as they were published in non-English language, 797 excluded as they were published in 2014 and earlier while 693 records involved assessment of patient outcomes without focusing on the implications of patient safety culture. The process therefore led to the elimination of 1897 records, with the remaining 328 records being subjected to further eligibility assessment. Thereafter, all studies with no full-text formats (123 records) and secondary research papers (97 records) were eliminated. The resulting 108 full-text studies were then taken through the manual quality assessment process which led to the elimination of 29 studies and inclusion of 79 full-text studies in the present scoping review.

Data Analysis Method

A thematic data analysis approach was used in the present study for analysing collected secondary data from the existing literature. According to Meline (2016) and Patino and Ferreira (2018), thematic analysis is a methodological approach used for recognising, scrutinising and exploring patterns of meaning,

referred to as themes, within the collected data. Contrary to the content analysis which simply focuses on assessing the number of phrases and words in the text, thematic analysis emphasises on the explicit and implicit analysis of meanings within the collected data (Patino & Ferreira, 2018). Precisely, themes reported as final results from the thematic analysis were generated through coding process which involved identification of items of analytical interest within the collected data and tagging them with the coding labels. Therefore, data collected from the selected studies for review were grouped into different categories based on their contents, subthemes, which were later regrouped to develop themes describing the phenomenon of interest. Consistent with the explanations by Meline (2016), thematic analysis is an appropriate approach for exploring data about lived experiences, behaviour, perspectives and practices about the phenomenon of interest. Therefore, thematic analysis method was suitable for this study as the review primarily focused on collecting data about the impacts of patient safety culture on patient outcomes, which are mainly based on the lived experiences, practices and perceptions of healthcare practitioners.

Chapter Summary

The chapter has successfully explained methodological approaches used during the literature search, identification and selection process. At total of 2729 records were identified from the initial literature search process, with 1009 hits, 872 hits and 848 hits being registered from CINHALL, Medline and ProQuest Health Management databases respectively. However, only 94 studies met all the inclusion criteria hence selected for evidence synthesis and knowledge gap identification regarding the impacts of patient safety culture on patient outcomes. Selected studies in this scoping review employed multiple types of primary research methodologies, a criterion which facilitated collection and critical appraisal of detailed evidence about the implications of patient safety culture on patient outcomes within different types of healthcare settings or organisations. In the subsequent chapter, evidence from the studies selected for scoping review would be critically appraised in order to explore the quality of knowledge in the previous literature about the research phenomenon of interest and identification of knowledge gaps to be addressed by future research in this context.

Chapter Three: Literature Review

Introduction

Literature selected from the search process would be critically appraised in this chapter leading to the identification of key gaps in knowledge to be used as a guide for future research in about the impacts of patient safety culture. Collected data were then thematically analysed leading to the generation of themes about the research problem. The themes generated include leadership and its impacts on patient safety implication, patient safety culture improvement practices within health care organization, patient safety in health care setting and the impacts of adverse events on patient safety.

Theme One: Leadership and Its Impacts on Patient Safety Implication

Healthcare organisational leadership is a key factor influencing the overall performance of the hospital, including the quality of care provided to the patients (Lotfi et al., 2018; Kristensen et al., 2016; Sexton et al., 2018). Therefore, this theme focused on assessing the role of healthcare organisational leadership in the enhancement of patient safety and realisation of a positive patient safety culture. The theme is specifically divided into three subthemes such as transformational leadership and its impacts on patient safety, leadership walk-rounds and patient safety, and impacts of communication and teamwork on patient safety.

Transformational Leadership and Patient Safety

Evidence from the existing literature shows that healthcare leaders can improve patient safety culture and that this type of culture is often a performance mediator with potential impacts of impacting the quality of patient outcomes (Lotfi et al., 2018; Kristensen et al., 2016; Sexton et al., 2018). Specifically, Lotfi et al. (2018) reported that healthcare professionals spending more time with their patients and being competent on patient safety are often more critical of the patient safety culture compared to their colleagues with less bedside time. Subsequently, Campione and Famolaro (2018) noted that leaders often have higher perception levels for patient culture than the frontline practitioners, with the existence of more disparities about this perception disparity causing high incidences of medical errors. Consistent with Huang, Wu and Lee (2018), clinical leaders enhance the development and sustainment of patient safety culture by addressing and prioritising safety as well as creating an organisational context where safety care can be reliably delivered. Therefore, there is a need for the

identification of possible solutions that can be used for bridging the existing gaps in perception.

The role of leadership in instilling clear and supportive culture with the ability of nurturing individual efforts has been continually pointed out in the existing literature as key strategies for creating a patient safety culture and reduction in errors (Danielsson et al., 2018; Wagner et al., 2018). According to Ree and Wiig (2020), strong patient safety culture has positive impacts on medical error reduction. Nonetheless, evidence from the studies by Isbell et al. (2020) and Huda, Faden and Goldszmidt (2017) suggest that not all hospital leadership always make safety a top priority or allocate adequate resources to patient safety initiatives. Therefore, existing literature has outlined many incidences of discrepancies among healthcare organisations with respect to the top leadership's commitment to the realisation of patient safety culture. The process of creating a culture which support patient safety often require significant organisational transformation within the hospital resources, including both technology and human resources (Danielsson et al., 2018; Wagner et al., 2018). Top leadership is an essential driver in the successful realisation of organisational change, which is key in the creation of a strong patient safety culture (Huda, Faden & Goldszmidt, 2017; Isbell et al., 2020; Ree & Wiig, 2020). Precisely, Huda, Faden and Goldszmidt, (2017) outlined three leadership tasks which must be executed for successful realisation of strong patient safety culture: establishing direction in the organisation by formulating and implementing a compelling vision which guide activities being executed, aligning human resources to the tasks by outlining to them the most important values and beliefs and then motivating and inspiring employees by assuring them that all the patient safety goals are achievable. Therefore, patient safety initiatives should not only focus on the welfare and care quality but also emphasise on the realisation of a positive work environment for all healthcare practitioners.

The multifactor leadership theory (see Huda, Faden & Goldszmidt, 2017) has been extensively applied in the health management literature to explain the role of leadership in the realisation of organisation goals and development of a positive work culture (Cho & Choi, 2018; Graversen et al., 2019; Ricci-Cabello et al., 2016). The multifactor leadership theory proposes three leadership styles such as transactional leadership based on punishments and rewards, transformational leadership which is based on the charisma inspiration and laissez-faire leadership

which are actively involved in ensuring effective management of human resources in any organisation including the hospital setting (Cho & Choi, 2018; Ricci-Cabello et al., 2016). Precisely, the charisma inspiration perspective of the transformational leadership style emphasises on the development of leadership behaviours with the ability of providing its subjects detailed strategy which is revitalising and act as a role model for ethical conduct (Cho & Choi, 2018), which significantly corresponds the task necessities for effective organisational change (Ricci-Cabello et al., 2016). Furthermore, Graversen et al. (2019) and Kristensen et al. (2015) established that the charisma inspiration of the transformational leadership style is aligned with the theoretical process of typical decision-making approach among high reliability organisations. Precisely, Kristensen et al. (2015) noted that the adoption of transformational heroics has enabled most of the high reliability organisations to realise their objectives. From this perspective, it can be noted that the transformational leadership positively influence the formulation, adoption and implementation of safety culture within the reliability organisational settings.

Leadership Walk-Rounds and Patient Safety

The impacts of healthcare leadership on patient safety culture has been extensively outlined in the existing literature. For example, Kristensen et al. (2016) explored the perceptions of healthcare staff towards patient safety culture prior to and after a leadership involvement. Specifically, this study reported that the frontline staff were more positive on all the proportions of patient safety culture except stress recognition and that the staff who left the frontline department after the first measurement reported a lower job satisfaction rate compared to their colleagues who stayed on. Similarly, Sexton et al. (2018) adopted a survey strategy to examine the relationships between receiving feedback about actions to be taken based on the results from Walk-Rounds, assessment of patient safety by the healthcare workers, employee engagement and work-life balance.

Precisely, Sexton et al. (2018) reported a positive correlation between Walk-Rounds and better assessment of safety culture, lower burnout and higher workforce engagement. The findings in the study by Sexton et al. (2018) are consistent with those reported in researcher works by Campione and Famolaro (2018) and Lotfi et al. (2018) about the impacts of Walk-Rounds on patient safety culture as they all established that novel safety culture spheres for improving willingness and leadership were significantly higher in healthcare organisations

where the Walk-Rounds were conducted with feedback. Even though the studies by Kristensen et al. (2016) and Sexton et al. (2018) identified leadership as an important which influences the level of patient safety improvement, the decision to use a cross-sectional design limited its ability to determine and report the magnitude of leadership impacts on patient safety culture with time as it could have been established if a longitudinal design was adopted.

Seminal contributions made by Gutberg and Berta (2017) suggest that determining specific factors that are linked to ensuring that healthcare organizations provide patient safety measures is difficult. Furthermore, Farokhzadian, Nayeri and Borhani (2018) established that for an organization to establish a strong and successful organizational culture of safety, they must engage top leaders who play a critical role in this process. Administrative leadership is one of the important variables directly associated with the design and development of a patient safety culture in a health care institution, as reported by Gutberg and Berta (2017). Similarly, Farokhzadian, Nayeri and Borhani (2018) indicated that a culture of patient safety in a healthcare organization must start with the top leadership but it must also be seen in each and every level of an organization. Therefore, leadership walk-rounds is essential in the health care setting as it enhances coordination of all health staffs and supervision of the assigned tasks whose successful execution would lead to improved patient safety.

Impacts of Communication and Teamwork on Patient Safety

Outcomes

Effective reduction of medical errors largely depends on the environment of patient safety in both systems-oriented and clinically-based arenas, with formal teamwork being considered as one of the key systems approaches for achieving this goal (Conroy et al., 2017; Ingvarsdottir & Halldorsdottir, 2018; Padgett et al., 2017).

Healthcare organisations are involved in the treatment of patients with progressively complex diseases and that multifaceted treatments and technologies require stronger efforts about the application of collaboration among care practitioners (Brenner et al., 2020; McComb et al., 2017). According to Freytag et al.

(2017) and Ingvarsdottir and Halldorsdottir (2018), patients are knowledgeable, controversial consumers who have high prospects on the quality of care and often expect only competent practitioners to care for them. Every healthcare provider has the responsibility of ensuring patient safety. Evidence from the previous studies by

Conroy et al. (2017), Jin and Yi (2019) and Padgett et al. (2017) shows that a significant percentage of medical errors among other factors jeopardising patient safety are caused by communication and teamwork issues. According to Hwang, Kim and Chin (2019) and McComb et al. (2017), health professionals often work autonomously, despite being team members which have limited the quality of communication and collaboration among the clinical staff hence jeopardising patient safety efforts. Specifically, Freytag et al. (2017) noted that the barriers between diverse groups of health practitioners, such as nurses and physicians, have negatively impacted the quality of communication within the healthcare setting. Nurses and physicians often have varying perceptions regarding their goals, patient care responsibilities and roles. Such evidence is consistent with the outcomes from ethnographic qualitative research conducted by Padgett et al. (2017) which established that healthcare organisations with ethically and culturally diverse staffs often experience communication problems and conflicts among healthcare professionals which limit the quality-of-care services offered to the patients. A systematic review of organisational communication evidence presented in the studies by Brenner et al. (2020), Hwang, Kim and Chin (2019) and McComb et al. (2017) identifies hierarchies as another important group of communication barriers that can compromise the quality of communication and collaboration among care providers and eventually limiting realisation of patient safety. Precisely, Hwang, Kim and Chin (2019) established that communication failures in the healthcare settings often arise from vertical hierarchical disparities, concerns which upward influence, ambiguity, role conflict and the struggles with interpersonal power and conflict. Similarly, McComb et al. (2017) reported that hierarchical differences among the healthcare staff can lead to distortion or withholding of communication specifically in a situation where one group is concerned about appearing incompetent while the opposing group perceives that their colleagues are not open to communication.

Previous studies by Han and Roh (2020), Staines et al. (2020) and Wong et al. (2016) have established that delays inpatient care in addition to the recurring problems from unresolved disputes are often a result of the disagreements between nurses and physicians. Specifically, Han and Roh (2020) reported relationship issues, particularly personality and style of communication, impacting when the nurses either refuse or are reluctant to call other healthcare professionals such as

physicians even in a situation where the patients are reporting deteriorating quality of life because of the possible intimidation, fear of getting into an antagonistic discussion or confrontation, fear of retaliation, possible lack of confidentiality in addition to the fact that nothing often seem to change even after consulting such professionals. Even though poor communication within the healthcare workplace was also identified in the study by Backhouse and Malik (2019) to play a central role in deteriorating the quality of care services provided to the patients, similar to evidence provided in the studies by Jones and Johnstone (2019), Staines et al. (2020), Lee and Doran (2017) and Wong et al. (2016), this study went ahead to identify disruptive behaviours as another important set of factors which comprise patient safety with regard to regularity of their occurrence in addition to the possible negative effect they may have on patient care. However, none of these studies assessed the impacts of communication barriers on care quality within a healthcare workforce comprised of a single group of care providers, such as from the perspective of nurses alone. Therefore, evidence from these studies only shows that communication and teamwork barriers are often experienced in a multicultural or multidisciplinary team, which can be misleading.

According to Wong et al. (2016), teams are likely to make fewer mistakes compared to when individuals are assigned the same duty, especially when all members are aware of their responsibilities together with team members' roles. Although most of the previous studies, such as Backhouse and Malik (2019), Lee et al. (2016) and Richter, McAlearney and Pennell (2016), have primarily focused on the negative impacts of poor communication and teamwork on patient safety, more recent studies such as Han and Roh (2020), Lee and Doran (2017), Staines et al.

(2020) and Wong et al. (2016), have emphasised on assessing and reporting significance and strategies for enhancing communication and collaboration within the healthcare setting. Specifically, Han and Roh (2020) and Staines et al. (2020) stated that healthcare organisations should have standardised tools for enhancing communication and teamwork as well as to create a working environment where care practitioners can easily express their concerns. Similarly, Jones and Johnstone

(2019) and Richter, McAlearney and Pennell (2016) established that structured communication techniques help in ensuring accuracy, take rapid actions and make ethical decisions. As a strategy of building on the evidence presented in Jones and Johnstone (2019), Richter, McAlearney and Pennell (2016) went ahead to suggest

that using the Situational Briefing Model of Communication is a key approach that healthcare organisations can use for bridging communication gaps as well as enhancing the quality of teamwork among care providers in a multidisciplinary setting. Nonetheless, both of these studies adopted a case study approach involving one case hospital each, an approach that reduced the generalisability of the generated outcomes in these studies.

Theme Two: Patient Safety Culture Improvement Practices

In the context of patient safety, people are often encouraged to work towards realisation of change by taking all the necessary actions at the most appropriate time (Cui et al., 2017; Pinheiro & de Sousa Uva, 2016). Furthermore, organisations can improve the quality of their safety culture when the leaders are visibly committed to the realisation of change and provide all members of the staff with the opportunity to openly share their safety information (Li et al., 2017; Pinheiro & de Sousa Uva, 2016). Therefore, this theme describes the strategies that healthcare organisations can use for improving competency levels of their employees to facilitate realisation of a strong patient safety culture. Specifically, there are three subthemes included in this section of the review, they include structured educational programmes, simulation-based training and multicomponent organisational strategies.

Structured Educational Programmes and Impact on Patient Safety

The structured educational programmes for patient safety primarily aim at advancing the shift to patient-centred, system-based education for the healthcare practitioners through the use of a superior train-the-trainer approach (Li et al., 2017; Pinheiro & de Sousa Uva, 2016). Significant portion of researches included in this scoping review reported data about the significant of healthcare staff training in ensuring successful implementation of patient safety culture. Specifically, these studies have presented evidence about the role of competent and training healthcare practitioners in the incident reporting process. For example, Cui et al. (2017) and Patel and Wu (2016) noted that healthcare practitioner training is key as it helps in raising awareness of risks and establishing a culture of safety within the healthcare setting. Structured educational training programmes are often administered to the healthcare practitioners to facilitate realisation of different goals; improving healthcare practitioners' ability to administer drugs (Pinheiro & de Sousa Uva, 2016), safe prescription teaching sessions for the residents (Klemenc-

Ketis et al., 2017), educational training to prevent incompatible blood transfusions (Haerkens et al., 2016), as well as training for improving communication skills among the healthcare practitioners and improving the quality of patient-nurse relationship (Li et al., 2017). Specifically, Haerkens et al. (2016) established that educational sessions on preventing incompatible blood transfusions were not effective as the levels of adverse events compromising patient safety were not changed even after the implementation of the training programme. Similar outcomes were reported in the study by Ribeliene et al. (2019) which reported no evidence that healthcare staff training helped in improving the process of care or the ultimate patient safety outcomes. Therefore, these results suggest the existence of a disconnect between the meso and micro-levels of healthcare organisation during the execution of training programme hence limiting the realisation of the expected results.

Most of the studies still fail to report evidence about the impacts of training on improving the actual quality of care process, which would ultimately lead to the improved patient outcomes, despite the fact that this was one of the quality improvement approaches used in the studies by Ali et al. (2018), Ribeliene et al. (2019), Shu et al. (2015) and Klemenc-Ketis et al. (2017). Indeed, Cui et al. (2017) and Li et al. (2017) are the only two studies included in this scoping review which reported evidence about the direct impacts of structured educational training programmes within the paediatric hospital setting, with the results showing that training this type of training approach helped in reducing the incidences of medical errors during the administration of drugs within a paediatric hospital setting. Based on these results, it can be noted that structured training programmes helped in reducing the incidences of medical errors when the nurses started taking over the role of administering IV drugs from the doctors, with the nurses being increasingly responsible for administering all medications, a trend which has been influenced by adoption of a better error trapping system.

Different tools had also been used in the studies reviewed to assess the efficiency of structured educational programme in enhancing patient safety. Patient safety culture helps in ensuring improved quality of life among patients and general performance of the healthcare organisations (Li et al., 2017; Pinheiro & de Sousa Uva, 2016). According to Cui et al. (2017) and Patel and Wu (2016), a healthcare organisation with effective patient safety culture often registers reduced risks of

patient safety issues. Similarly, Haerkens et al. (2016) established that healthcare organisations with strong safety culture and insightful attitude towards errors often register decreased incidences of medical failures and errors such as misdiagnosis and accidents. Therefore, the management of any healthcare organisation has a responsibility of ensuring consistent evaluation of the safety culture as a tactic for monitoring the changes and trends within their workforce and identify weaknesses that may jeopardise the quality of care.

The safety attitudes questionnaire (SAQ) is among the most common tools widely used by researchers to measure the efficiency of patient safety culture within an organisation (Klemenc-Ketis et al., 2017; Li et al., 2017). Through examination of the cause-effect relationships, decision-makers can initiate improvement programmes through the causal dimensions with positive impacts on the effect-based proportions as reported by the SAQ tool (Cui et al., 2017; Pinheiro & de Sousa Uva, 2016). However, Haerkens et al. (2016), Patel and Wu (2016) and Zhao et al. (2019) reported that such improvements might be limited in a situation where decision-makers emphasise enhancing effect-based dimensions as a result of the complicated causal relationships among dimensions. From this perspective, it is justifiable to note that not all the outcomes from SAQ can provide detailed description of the factors limiting the realisation of patient safety hence the need to incorporate other tools.

Simulation-Based Training Programmes and Impact on Patient Safety

Simulation-based training is one of the key approaches described in some of the reviewed studies. Generally, the simulation-based training involves a method for intensifying experiences of the patients using artificially converted knowledge leading to replication of considerable aspects of the real world (Cui et al., 2017; Deilkås et al., 2019). According to Patel and Wu (2016) and Zhao et al. (2019), the simulation-based training enhances development of learning opportunities which are both immersive and experimental. Furthermore, Cui et al. (2017), Deilkås et al. (2019) and Pinheiro and de Sousa Uva (2016) noted that simulation-based training leads to the redevelopment of scenarios which are rarely experienced and test level of competency of the healthcare professionals under varying challenging situations, as well as to carefully replay or examine their previous actions during the patient management process. Therefore, simulation-based training is considered as an

important and powerful tool for learning which has the ability of helping the modern healthcare practitioners to realise higher competency levels and deliver safer care to their clients.

In addition to the impacts of simulation-based training on the performance of individual healthcare practitioner and the entire team, evidence from the studies by Patel and Wu (2016) and Zhao et al. (2019) shows that this training programme provides opportunity for improving system performance. Specifically, Zhao et al. (2019) identified reduction or complete elimination of system-related errors which are factors influencing increased incidences of medical errors and ultimately compromising the quality of patient safety as an important role of the simulation-based training programme. A key simulation-based tool described in the studies included in this review is the simulation report card. Specifically, Haerkens et al. (2016) and Klemenc-Ketis et al. (2017) established that the report card for simulation has positive impacts on the patient safety outcomes, as it is used for keeping track of the activities executed during the process of caring for the patient, with the data being kept as reference for future patient management and to be used in the policy improvement formulation and implementation processes. Furthermore, Buljac-Samardzic, Van Wijngaarden and Dekker-van Doorn (2016) described system improvement as a key strategy for reducing rates of errors and improving the quality of care services offered to the patients as well as eventually enhancing the patient safety. The key to reducing or completely eliminating incidences of medical errors is to emphasise on improving the systems of providing care rather than to continually blame individual care practitioner for the registered errors.

Similar to the structured educational programmes, different tools have been used within the existing literature to assess the efficiency of simulation-based training in enhancing patient safety. Haerkens et al. (2016) and Klemenc-Ketis et al. (2017) in their studies used decision-making trial and evaluation laboratory (DEMATEL) method to hypothesise causal correlations among the SAQ's factors involved in determining the quality of patient safety in a healthcare organisation. Specifically, Klemenc-Ketis et al. (2017) supported their decision to use DEMATEL by stating that the method has the ability of identifying and reporting interrelationships within crucial fundamentals of the system via a causal diagram.

Despite its wide application in assessing the efficiency of improvement actions for enhancing patient safety culture, Klemenc-Ketis et al. (2017), Patel and Wu (2016) and Zhao et al. (2019) warned that the DEMATEL method has a long-term limitation in that the quality of relative causal relationships might often change with time as a result of varying insights and about patient safety culture.

Furthermore, none of the studies included in this review assessed the circumstantial correlations among the six variables of SAQ then compared the registered results in relation to the resemblances and variances hence their outcomes may not be exclusively used by the healthcare organisations to update contributory associations among the six scopes so as to consistently improve the efficiency of their patient safety cultures.

Buljac-Samardzic, Van Wijngaarden and Dekker-van Doorn (2016) used the SAQ tool to assess the causal relationships among factors influencing the quality of patient safety culture, an analysis which identified teamwork, job satisfaction, working conditions and perceptions of management as net causes while stress recognition and safety climate were identified as the net effects. Even though Cui et al. (2017), Deilkås et al. (2019) and Pinheiro and de Sousa Uva (2016) also identified job satisfaction, teamwork climate and working conditions as net causes, these studies included perceptions of management under net cause category rather than net effect category as indicated in the study by Buljac-Samardzic, Van Wijngaarden and Dekker-van Doorn (2016). Despite the disparities in the types of variables included in the net cause and net effect categories of the SAQ tool, evidence from the reviewed studies shows that teamwork climate and leadership support for patient safety are two of the most essential dimensions which can be used by the management of hospitals to improve the efficiency of patient safety as these factors have positive impacts on the six scopes of SAQ apart from the stress recognition.

Multicomponent Organisational Strategies and Impact on Patient Safety

Significant number of studies included in this review has also identified multicomponent organisational strategies for enhancing patient safety. Specifically, Deilkås et al. (2019) and Güneş, Gürlek and Sönmez (2016) provided evidence regarding the role of multicomponent fall prevention strategy in enhancing patient safety through reduction of falls. The multicomponent component tool for fall

reduction employed in the study by Deilkås et al. (2019) involved assessment of fall rates and comparing the obtained results with three classes of fall such as accidental, anticipated physiologic and unanticipated physiologic. The outcomes from this study showed that the pilot units had achieved significant decrease in the rates of falls leading to harm on patients within the last five months of data collection. Similar outcomes were reported in the study by Güneş, Gürlek and Sönmez (2016) which used the Wald test approach and segmented regression analyses to establish that there were significant improvements within the pooled postintervention rates of falls, outcomes which were stratified by the type of fall involved, and that the implementation of this programme in a hospital-wide perspective led to the reduction of fall rates by 47% in the postintervention period. Based on these results, it is justifiable to note that a fall prevention strategy which targets the spectrum of risk factors leads to the generation of measurable improvements in the rates of falls and rates of patient harm. Therefore, hospitals must continuously develop and rigorous test and share their results and experiences in order to facilitate formulation and implementation of sustainable multicomponent fall prevention strategies within the hospital settings.

The efficiency of multicomponent organisational strategies for enhancing patient safety has been assessed and reported using different tolls within the existing literature, with the key ones include SAQ, DEMATEL and hospital survey on patient safety culture (HSOPSC). Similar to the SAQ, the DEMATEL method has been extensively used in the healthcare management domain to enhance patient safety by facilitating the implementation of the proposed improvement actions. For example, Tourani et al. (2016) identified a trusted and competent medical staff as the most important criterion with significant impacts on patient satisfaction and quality of patient safety culture. On the contrary, Nilsson et al. (2018) identified the prehospital emergency system as a primary factor enhancing performance quality in a healthcare setting. Furthermore, Deilkås et al. (2019) combined the DEMATEL method and fuzzy theory to develop s framework for selecting suppliers within the healthcare industry with the study reporting that the competency levels of suppliers and quality of products they supply to the healthcare organisations play an essential role in determining care quality and general level of patient safety. Even though these studies show that the DEMATEL method can be used in practice for evaluating different forms of causal relationships within the healthcare setting,

there is still limited evidence regarding the use of the DEMATEL method for assessing the quality of patient-healthcare practitioner relationship and how it impacts patient safety.

The HSOPSC is another tool widely used by existing literature for measuring the level of patient safety compliance and determining the factors influencing realisation of patient safety culture within the healthcare organisation setting (Güneş, Gürlek & Sönmez, 2016; Hickner et al., 2016; Kiaei et al., 2016). According to Tereanu et al. (2017), the clinical quality and patient safety outcomes are associated with the dimensions of the organisational culture which can be determined using the HSOPSC. Correspondingly, Güneş, Gürlek and Sönmez (2016) and Raeissi et al. (2017) established that there is a positive correlation between the safety culture measures and employee performance (including safety behaviours), system errors and accident rates within any organisation including the healthcare setting. Contrary to the SAQ tool which primarily focuses on assessing the cause-effect relationship between patient safety and workplace-related variables, the HSOPSC is a validated tool which is primarily used for measuring the effectiveness of work environment and organisational processes which are associated with eliminating, reducing or preventing different types of hospital-based errors which can lead to consequential adverse events in the hospital setting (Hickner et al., 2016; Kiaei et al., 2016; Tereanu et al., 2017). Specifically, Hickner et al. (2016) and Raeissi et al. (2017) used the HSOPSC tool and reported a strong and positive correlation between the safety culture, adverse event frequency and nature of patient outcomes. Therefore, the HSOPSC has simplified the process of measuring the level of patient safety culture within the healthcare organisation, which has in the recent years become an important prerequisite for continuous quality improvement efforts focused on providing healthcare leaders with important feedback which that can use for stimulating organisational improvements.

Theme Three: Patient Safety in Healthcare Setting

An effective health system should account for the increasing complexities within the healthcare settings, especially those that make humans more prone to mistakes (Gomides et al., 2019; Ribeliene et al., 2019; Shu et al., 2015). Patient safety during the provision of healthcare services which are safe for consumption and are of high quality is an important prerequisite for strengthening health care systems as well as enhancing the realisation of an effective universal health

coverall goals. Under this theme, strategies for enhancing patient safety within different healthcare setting with specific focus on the hospital setting and primary care setting. Furthermore, ethical perspectives for safety culture within these healthcare settings are described under this theme.

Patient Safety in the Hospital Setting

Most of the papers included in this scoping review were concerned with the patient safety initiatives within the hospital, but evidence could be further divided into different groups based on the hospital settings involved; they include the general medical units (Ali et al., 2018; Najjar et al., 2015) and surgical units (Gomides et al., 2019; Ribeliene et al., 2019; Shu et al., 2015). Additionally, studies by Ribeliene et al. (2019) and Shu et al. (2015) provided evidence about patient safety within medical and paediatric units while Alswat et al. (2017), Hamaideh (2017) and Reis, Paiva and Sousa (2018) explored patient safety culture in the emergency department units. Among all the papers included in this review, only Šklebar et al. (2016) and Piper et al. (2018) included samples derived from across the entire hospital population. Irrespective of the hospital setting included in every paper selected for the review, the studies specifically focused on the impacts of technological advancements on the patient safety and culture.

Technology and equipment have been identified as one of the major contributors to different forms of adverse events in the healthcare setting. For example, Alswat et al. (2017) and Reis, Paiva and Sousa (2018) identified equipment as a key performance shaping factor as well as a primary source of procedural or situational problem. Similarly, Hamaideh (2017) and Najjar et al. (2015) described healthcare information technology (HIT) as a source of medical errors which influence the occurrence of adverse events which reduce the quality of care general patient safety. Moderately, Alswat et al. (2017), Hamaideh (2017) and Reis, Paiva and Sousa (2018) established that technologies including computerised physician order entry systems and automated drug dispensing systems as both a strategy for reducing the incidences of medical errors through elimination of possible human errors as well as an important mediating factor to the occurrence of adverse events. Specifically, Alswat et al. (2017) established that the equipment failures can always lead to the occurrence of adverse events and influence high incidences of cognitive overload. Therefore, there are mixed reactions regarding the role of HIT on improved quality of care and patient safety. Specifically, there is

evidence which shows that automation holds important promise in ensuring improved patient safety; on the other hand, some scholars in this context have established that all healthcare information technologies often introduce the potential for novel and diverse types of errors which may compromise patient safety.

As a strategy of improving patient safety and quality of care, different healthcare information technologies have been developed and incorporated into the care delivery systems; they include computerised provider order entry (CPOE), electronic health/medical record (EMR), electronic medication administration record (eMAR), barcode medication administration (BCMA), pharmacy informatics, telepharmacy, programmable pumps and robotic mixing (Gomides et al., 2019; Ribeliene et al., 2019; Shu et al., 2015). According to Gomides et al. (2019), the CPOE allows healthcare providers to place their orders electronically contrasted with the traditional approach of writing them on paper. Explicitly, the CPOE systems have inherent decision support which allows it to connect to the medication database serving as a catalogue for all drug movement on and off the market-area and containing published literature about the drug interaction information. Evidence from four studies, Ali et al. (2018), Ribeliene et al. (2019), Shu et al. (2015) and Šklebar et al. (2016), included in this scoping review shows that the CPOE plays a central role in enhancing patient safety by through reduction or elimination of medication errors. Specifically, Ali et al. (2018) reported that the incorporation of CPOE into the primary care system leads to a relative risk reduction from 54% ($p=0.01$) to 95% ($p<0.001$). Therefore, CPOE is key HIT which is useful in enhancing patient safety and should be incorporated into the care delivery system and culture for productive results.

Similar to CPOE systems, the EMR has also received mixed reactions based on its impacts on patient safety. With regard to the level of EMR sophistication, inclusive patient information can be incorporated in a single place hence allowing multiple healthcare practitioners to view and use the recorded data at any specified time (Abdi et al., 2015). Moreover, Han, Kim and Seo (2020) reported that the integrated CPOE and EMR systems enhances pharmacy communication logs or electronic nursing communication orders with healthcare providers such as nurses which allows for the creation of a safe medium for communication regarding non-urgent issues in order to minimise interruptions and destructions in the workflow.

Similar to the studies by Abdi et al. (2015) and Han, Kim and Seo (2020), evidence from the studies by Alquwez et al. (2018) and Top and Tekingündüz (2015) identifies EMR as a key HIT tool for enhancing patient safety by providing healthcare practitioners with comprehensive medical record which they can use for making inclusive assessment about the appropriateness of medication orders as well as any changes which should be made during the course of patient treatment process. On the contrary, Ghahramanian et al. (2017) and Merrill (2015) argued that even though the EMR contains important patient information, the quantity of such information can be overwhelming for some healthcare practitioners, especially those who are at novice level in handling the EMR tool. Specifically, Ghahramanian et al. (2017) stated that navigating through large volumes of patient information stored in the EMR can be more time consuming and tiresome when looking for a precise piece of information especially in a situation where the EMR is not correctly optimised. From a general perspective, there is still limited evidence supporting the use of EMR as a stand-alone technology in enhancing patient safety despite the surplus amount of data backing the use of CPOE, which is a key component of the EMR.

Patient Safety in the Primary Care Setting

Comparative analysis of the healthcare settings for the included literature in this review shows that most of the research studies about patient safety culture have been conducted within the hospital setting despite the fact that majority of patients are often treated and cared for in within the primary care setting. Patient safety is reported as a key challenge against the primary care success; specifically, the incidences of medical errors within this care setting have been reported in the previous studies by Jones and Johnstone (2019), Richter, McAlearney and Pennell (2016) to be very challenging in estimating and addressing as the number largely depends on the recording accuracy and standardisation incidences hence very little is still known about such errors. According to Huda, Faden and Goldszmidt, (2017), Isbell et al. (2020) and Ree and Wiig (2020), significant number of safety incidences within the hospital settings are often originating from the earlier levels of care, with the primary care setting being the most involved. Therefore, the need to formulate and implement strategies for enhancing patient safety within the primary care settings has significantly increased, despite low positive results to evidence such efforts. Incident-reporting systems within the primary care settings have been

extensively used to identify the priority areas as well as to facilitate the generation of most appropriate recommendations for improving care quality and enhancing patient safety (Lotfi et al., 2018; Kristensen et al., 2016; Sexton et al., 2018). The incident reports allow for a retrospective window on the health-care system, leading to the provision of opportunities for directing improvement initiatives through identification of weaknesses within the system that can influence the occurrence of errors and harms on the patients.

Significant number of the previous studies about patient safety culture in the primary care setting have specifically focused on the developed countries (Brenner et al., 2020; Isbell et al., 2020; McComb et al., 2017; Ree & Wiig, 2020). Among the included studies in this review, only two, Jones and Johnstone (2019), Richter, McAlearney and Pennell (2016), explored the primary care patient safety within an Arabic a population. Specifically, Richter, McAlearney and Pennell (2016) explored patient safety culture within the United Arab Emirates and reported that the mean score for positive perception towards patient safety climate was 51.3%, a value which was slightly higher compared to the results reported in the study by Jones and Johnstone (2019) which focused on the Kuwaiti primary care population. The increasing incidences of patient safety threats in the primary care setting have been associated with the multifactorial chain of events taking place within this care setting (Conroy et al., 2017; Ingvarsdottir & Halldorsdottir, 2018; Padgett et al., 2017). Therefore, this assumption implies that if all the healthcare systems, including organisations and healthcare networks, and working conditions can be optimised, then there would be reduced incidences of patient safety threats. Even though most of the included papers in this scoping review, such as Huda, Faden and Goldszmidt, (2017), Isbell et al. (2020) and Ree and Wiig (2020), reported that patient safety incidents are a comparatively frequent occurrence in the primary care setting, Isbell et al. (2020) and Ree and Wiig (2020) went ahead to note that only less than 10% of the incidents are often leading to severe harm. Furthermore, studies by Huda, Faden and Goldszmidt, (2017) and Ree and Wiig (2020) had explored the relationship between cause (medical error) and effect (harm on the patients) in relation to the underlying system failure within the primary care setting. However, none of these studies has been conducted within the primary care setting of the developed countries such as the UK and the USA.

Ethical Perspectives for Safety Climate and Culture

Ethical imperative for patient safety is considered as an important mediating factor for ensuring effective implementation of health care organisations' mission and aim especially from the perspective of patient safety domain (Danielsson et al., 2019; Klemenc-Ketiš et al., 2017; Smits et al., 2018). According to Amiri, Khademian and Nikandish (2018) and Wami et al. (2016), the primary aim of a healthcare system is to ensure protection, maintenance and promotion of safety for care services provided to the public. Even though some healthcare organisations have the ability of delivering high quality care and treatment programmes to their clients, they may fail to successfully achieve their mission if the care is not delivered safely (Farzi et al., 2017; Smits et al., 2018). With reference to the evidence provided in existing research papers by Laal et al. (2016), Leonard and O'Donovan (2018) and Wami et al. (2016), the ethical perspective of patient safety can be measured in two ways. The first perspective involves the practical value of care where outcomes, benefits, efficiency and economic factors of care are directly involved. In this perspective, El-Sherbiny, Ibrahim and Abdel-Wahed (2020) and Klemenc-Ketiš et al. (2017) described patient safety to be a sensible approach for lowering costs and the general problem of healthcare in the society. The second perspective implies that the primary aim of patient safety is supposed to be a moral value for protecting and promoting human dignity (Danielsson et al., 2019). Therefore, ethical and practical perspectives of the patient safety are entwined and may not be easily detached and are involved in the promotion and implementation of patient safety action.

According to Smits et al. (2018), process of implementing ethical perspective of patient safety is often emphasised by both local laws and international pacts. However, different countries often have varying legislations for patient safety, a discrepancy which is mainly caused by different national contexts and legislative support. Comparative analysis of evidence presented in the studies by Amiri, Khademian and Nikandish (2018), Farzi et al. (2017) and Leonard and O'Donovan (2018) shows that the relationship between legislation and ethics in the context of patient safety is comparable to the other ethical facets within the care domain as both viewpoints describe the philosophies for fair actions and share significantly undistinguishable content despite the difference in their bases of consequences and commitment. Specifically, Amiri, Khademian and Nikandish (2018) argued that the legislative perspective outlines the specific punishments for dereliction of patient

safety. Conversely, Farzi et al. (2017) and Laal et al. (2016) noted that the arguments of patient safety ethics primarily evolve from the human dignity, professional and healthcare ethics. Even though El-Sherbiny, Ibrahim and Abdel-Wahed (2020) and Klemenc-Ketiš et al. (2017) described ethical commitment of patient safety to be voluntary by nature, Farzi et al. (2018) on the other hand argued that the principles are always enshrined in the healthcare professional code of conduct and failure to follow such principles may lead to moral and legal consequences. Consequently, devotion to patient safety principles from an ethical stance is both moral and legal requirement for all healthcare practitioners. Hence, the management of healthcare organisations, including nursing managers, have both a moral and legal responsibility of ensuring successful implementation of patient safety.

Previous literature on patient safety has outlined different standards and philosophies of patient safety; they include ensuring self-respect as a strategy for achieving ethical patient safety, role of trustworthiness and justice ensuring transparency, doing no harm while promoting patient safety and promotion of both individual and organisational accountability (Amiri, Khademian & Nikandish, 2018; Danielsson et al., 2019; Wami et al., 2016). Specifically, Amiri, Khademian and Nikandish (2018) described human dignity as an imperative phenomenon within the general healthcare profession with the most important ethical motive of all involving ensuring absolute dignity of all humans. Therefore, the concept of human dignity as an approach for ensuring ethical patient safety is primarily used for describing the quality of being honoured, revered, which based on different definitions of human attributes or right in life hence making the notion of human dignity to be considered as an essential goal of all healthcare disciplines from an international perspective. As stated by Farzi et al. (2017) and Laal et al. (2016), failure to incorporate respect for human dignity into the patient safety action may lead to execution of unethical actions. Therefore, there is need to ensure comprehensive understanding of religious and cultural backgrounds of the patients and incorporate such information into the patient safety action.

Along with ensuring human dignity, evidence from the studies by El-Sherbiny, Ibrahim and Abdel-Wahed (2020), Farzi et al. (2018) and Leonard and O'Donovan (2018) shows that the ethical standards of patient safety should ensure implementation of healthcare values such as justice, trustworthiness, accountability

and non-maleficence. Specifically, El-Sherbiny, Ibrahim and Abdel-Wahed (2020) associated the value of honesty with patient safety culture as it is the primary aim of every healthcare action, and that it is connected to the value of justice which advocate for the promotion of responsibility and transparent processes in error evaluation and separation of capable deeds from blameless actions. Consequently, the principles of trustworthiness and value of justice challenge healthcare organisation managers to formulate patient safety culture which clearly outlines the responsibilities of healthcare practitioners with respect to their actions on value of justice and ensuring trustworthiness within the healthcare delivery system through enhancement of openness and transparency. Danielsson et al. (2019) and Farzi et al. (2017) stated that the ideas of non-maleficence and beneficence primarily constitute the responsibility of healthcare practitioners to “do no harm”, as both are associated with the rights of the patients to safe care and emphasise that healthcare practitioners have both legal and moral responsibility of delivering care services which are free from danger or risk of injury. From this perspective, it is justifiable to note that the healthcare practitioners have a moral duty of avoiding commissions and omissions which may eventually lead to the occurrence of preventable harm to the patients.

Notwithstanding the obvious basis of patient safety values, previous scholars such as Farzi et al. (2018), Laal et al. (2016) and Wami et al. (2016) have raised concerns regarding the efficiency of the available strategies in promoting individual or utilitarian safety. From the perspective of healthcare managers, Wami et al. (2016) noted that the issue of ensuring individual or utilitarian safety may influence the occurrence of confusion in daily practice. On the other hand, Farzi et al. (2018) and Laal et al. (2016) described patient safety as a human right which is based on the patient autonomy, from an individual perspective. Critical assessment of evidence presented in these studies shows that the safety of an individual patient may in many occasions supersedes the common good, as an individual patient always has a right to care through mutual understandings which are based on their autonomous needs while at the same time they are required to understand that additional interventions may be needed to their safety or that of the other patients. Right of the patients can be used by the management of healthcare organisations, including nursing managers, to develop healthcare practitioners' commitment in

limiting the occurrence of therapeutic plan complications, privacy violations and environmental hazards leading to the preservation of patient feelings and safety.

Theme Four: Adverse and Events on Patient Safety and Measures Taken

Incidences of adverse events is a key measure for patient safety and outcomes in the hospital setting (Brenner et al., 2020; McComb et al., 2017). A strong patient safety culture should always focus on reducing the incidences of adverse events which compromise the quality of care provided to the patients as well as the overall patient outcomes such as rates of mortality, safety of care, rate of readmissions, patient experience, timelessness and effectiveness of care among others (Conroy et al., 2017; Ingvarsdottir & Halldorsdottir, 2018; Padgett et al., 2017). Therefore, this theme would focus on assessing the impacts of adverse events such as pressure ulcers, falls, medical errors, hospital acquired infections and long hospital stays on patient outcomes in addition to the role of patient safety culture in reducing the incidences of these adverse events.

Pressure Ulcers as Outcome Measure of Quality and Patient Safety

Existing literature has associated development of pressure ulcers with quality of care hence high incidences of pressure ulcers is an indication of overall poor quality of care provided to the patients and adoption of an ineffective patient safety culture (Brenner et al., 2020; McComb et al., 2017). Specifically, the study by McComb et al. (2017) established that 13 states in the US reported increasing incidences of stage III and IV pressure ulcers within their healthcare sectors despite the implementation of "Never Events" which is a healthcare policy which outlines the financial penalties for healthcare organisations which fail to report individual who develop these groups of pressure ulcers in a timely manner. Furthermore, studies such as Haerkens et al. (2016), Patel and Wu (2016) and Zhao et al. (2019) have identified pressure ulcer development as an important public health problem. However, a key limitation of existing studies on the association between pressure ulcer development and patient safety is small sample size which leads to low generalisability of the generated findings, with most of these studies having a sample size of <200 participants (Conroy et al., 2017; Ingvarsdottir & Halldorsdottir, 2018; Padgett et al., 2017). Therefore, the ability to compare incidences of pressure ulcer events within an individual healthcare organisation setting with data at the national level is still lacking. As reported in the studies by El-Sherbiny, Ibrahim and Abdel-Wahed (2020) and Klemenc-Ketiš et al. (2017), the ability of clinicians and

policymakers to determine the impacts of specific individual clinical characteristics on the development of pressure ulcer incidences and overall quality of patient outcomes, including mortality rates and length of stay in the hospital, has been a challenging process. Therefore, effective management of pressure ulcer incidences can be very challenging without proper determination of the central role played by the adopted patient safety culture by individual and national-level healthcare organisations.

Prevention of pressure ulcers is not only a strategy for ensuring protection of patients from harm but also to reduce the overall cost of care (Danielsson et al., 2019; Klemenc-Ketiš et al., 2017; Smits et al., 2018). Studies included in this scoping review reported that most of the healthcare organisations are continually educating and training their staffs (Alswat et al., 2017; Sexton et al., 2018), developing and implementing up-to-date protocols for assessing and documenting wounds (Farzi et al., 2017; Smits et al., 2018), performing audits and providing timely feedbacks to their staff (Klemenc-Ketis et al., 2017; Li et al., 2017), as well as adopted the Braden Scale for Predicting Pressure Sore Risk (Reis, Paiva and Sousa, 2018). Specifically, Reis, Paiva and Sousa (2018) noted that the healthcare practitioners conducted initial and recurrent risk assessment procedures using the Braden Scale which was then followed by tailored interventions which are specific to the needs of the involved patients. The strategy is contrary to the pressure ulcer prevention approach adopted in the studies by Alswat et al. (2017), Hamaideh (2017) and Reis, Paiva and Sousa (2018) where a uniform intervention was used across all the patient population. Three studies, Amiri, Khademian and Nikandish (2018), Danielsson et al. (2019) and Wami et al. (2016), reported significant improvement in the pressure ulcer rates with two other studies, Hamaideh (2017) and Reis, Paiva and Sousa (2018), reporting that strategies such as use of support surfaces including specialised mattresses, frequently repositioning the patient and getting them out of bed early and adoption of mechanical approaches for reducing friction and shear forces on body are vulnerable to pressure ulcer, had significant improvement on process-of-care quality measures but not on the pressure ulcer rates. Furthermore, Smits et al. (2018) implemented a multicomponent strategy which led to significant reduction on the pressure ulcer incidences by 12.5%, improved focused communication among health practitioners and patient caregivers in addition to enhanced clinician behaviour and clinical processes

following the recognition of the other improvements. Even though these studies have outlined large number of pressure ulcer prevention strategies, they still fail to identify the most effective approach that can be adopted by any healthcare organisation irrespective of the resource availability.

Falls as Outcome Measure of Quality and Patient Safety

Falls in the hospital have been reported in the existing literature as an important patient safety issue, with frail and elderly patients not being the only ones at high risk of falling in the healthcare facilities (Lotfi et al., 2018; Kristensen et al., 2016; Sexton et al., 2018). Therefore, any patient, irrespective of their demographic characteristics are at risk of falling, a problem which is mainly caused by physiological changes resulting from medications, medical conditions, surgery procedures and diagnostic testing. Critical analysis of evidence presented in the studies by Conroy et al. (2017), Jin and Yi (2019) and Padgett et al. (2017) led to the identification different factors contributing to the development of falls with injury; they include inadequate assessment, poor adherence to safety protocols, communication failures, deficiencies in physical environment and poor leadership. Prevention of falls in the hospital setting is a challenging and complex process. Substantial body of literature has explored the fall prevention and reduction strategies. Specifically, Haerkens et al. (2016), Patel and Wu (2016) and Zhao et al. (2019) identified the use of a standardised assessment tool for identifying fall and risk factors for injury and interventions tailored to the identified individual risks for fall as key approaches for addressing this healthcare problem. Nonetheless, all of these studies were conducted in a hospital setting hence limiting generalisability of the reported findings to the other healthcare settings such as outpatient clinic, long-term care facility and hospice.

Even though existing literature shows that falls contribute to 60-75% of inpatient incidents within the acute care hospitals, most of the studies included in this review, such as Laal et al. (2016), Leonard and O'Donovan (2018) and Wami et al. (2016), restricted their assessment to geriatric patient population which led to generation of biased findings that fall incidences are mainly reported among the elderly patient population. Furthermore, studies including general patient populations within the acute care hospitals, such as Conroy et al. (2017), Jin and Yi (2019) and Padgett et al. (2017), have specifically reported the incidents of all types of accidents without separate analysis of fall. Generally, healthcare organisations

have been trying to reduce or completely eliminate incidences of falls but have succeeded at low rate, with sustained reduction proving to be elusive. Irrespective of the tool adopted in the fall management, healthcare practitioners have the responsibility of ensuring that the selected tool should be specific and sensitive to the targeted patient population (Cho & Choi, 2018; Graversen et al., 2019; Ricci-Cabello et al., 2016). Therefore, treating fall risk assessment as an integrated component of the individual patient care plan forms an important part of the proactive fall prevention programme within the healthcare setting.

Medical Errors as Outcome Measure of Quality and Patient Safety

A health organisation has an ultimate responsibility of ensuring safety of all patients to whom treatment and care services are provided (Boamah et al., 2018; Welp, Meier & Manser, 2015). Studies included in this review identified patient safety as the first priority which should be considered by every individual stage of healthcare delivery process (Danielsson et al., 2019; Klemenc-Ketiš et al., 2017; Smits et al., 2018). Even though Haerkens et al. (2016), Patel and Wu (2016) and Zhao et al. (2019) noted that most healthcare organisations are currently registering significant improvements in the efficiency of patient safety practices, Huda, Faden and Goldszmidt, (2017), Isbell et al. (2020) and Ree and Wiig (2020) noted that incidences of medical errors are continuing to grow at unacceptable rates. Specifically, the healthcare organisations included in the study by Ree and Wiig (2020) reported a 4% increase in the incidences of medical errors with 14% of the cases leading to death of the patients. Furthermore, Jin and Yi (2019) noted that 1 in every 55 patients admitted to hospital often die as a result of the adverse effects of medical errors, with two thirds of these cases taking place in the operating room or surgical clinics. Correspondingly, the study by Padgett et al. (2017) reported that 65.1% of the healthcare practitioners witnessed patient safety threatening events within the operating rooms throughout their professional life. Based on these outcomes, it is justifiable to note that medical error is an important factor compromising the efficiency of patient safety culture, with the problem largely evidenced within the primary care settings.

According to Huda, Faden and Goldszmidt, (2017) and Isbell et al. (2020), operating rooms are among the most complex areas within the healthcare setting where adverse events often take place. However, this does not imply that the adverse events associated with medical errors only take place within the operating

rooms but the problem is widely evidenced in this healthcare setting because the healthcare practitioners within this setting are often coming from multiple disciplines with varying educational aims which may influence the occurrence of conflict among staff members, hence resulting to more errors. Similar results were reported in the studies by McElroy (2015) and Lee et al. (2016) which were conducted in ambulatory care settings. Contrary to Haerkens et al. (2016), Patel and Wu (2016) and Zhao et al. (2019) who associated high incidences of medical errors with conflict among multidisciplinary teams in the operating rooms, McElroy (2015) and Lee et al. (2016) linked such incidences with limited time and high level of care urgency within the ambulatory setting which increase the chances of medical errors. Generally, existing literature has indicated that at least 50% of the adverse events associated with medical errors can be addressed through adoption of enhanced teamwork culture, constant reviewing of errors and implementation of corrective feedback approach.

Different technological approaches have been developed to ensure proper management of medical errors which are key in compromising the quality of patient safety. The BCMA together with the eMAR permits electronic documentation of the provided medication during the point of care (Boamah et al., 2018; Welp, Meier & Manser, 2015). Precisely, the BCMA is used to verify the nine rights of medication administration in addition to providing an audit trail used for tracking suitable medication use and medication errors in conjunction with the EMR (Welp, Meier & Manser, 2015). The increasing adoption of BCMA by healthcare organisations, especially hospitals from developed countries such as the US and the UK, has been associated with its ability to reduce or completely eliminate medication errors, providing safety net for preventing and tracking errors in addition to increasing accuracy in medication administration and billing records (Boamah et al., 2018; McComb et al., 2017). However, McElroy (2015) and Lee et al. (2016) argued that successful BCMA implementation often requires creation of a safety culture within which the expectation for error review along with the objective of future prevention are stressed contrary to the culture of censure and blame which exists among most of the healthcare organisations. With reference to the fact that BCMA has been established to increase the visibility of prevented errors, there is need for continual review on all the medication errors and all near-misses should be executed by a

multidisciplinary team in order to identify the root cause, areas of risks as well as to enhance simplification and standardisation of the patient care process.

Hospital Acquired Infections as Outcome Measure of Quality and Patient Safety

Transmission of infections within the hospital has been considered as another important threat to patient safety which is adversely affecting the patients, visitors and healthcare practitioners (Li et al., 2017; Pinheiro & de Sousa Uva, 2016). According to Haerkens et al. (2016) and Klemenc-Ketis et al. (2017), the prevention of hospital acquired infections should not be limited to the hospital epidemiology staff but should be a role to be played by the entire multidisciplinary team, including the nurses. The patient care process is often executed in healthcare facilities which are equipped with advanced technologies and front-line units which only have basic facilities (Gomides et al., 2019; Ribeliene et al., 2019; Shu et al., 2015). Irrespective of the advancement within the public health and hospital care, the incidences of infections among the hospitalised patients are continually increasing and may also affect the hospital staff. Evidence from the reviewed studies in this context shows different types of factors that influence growing incidences of hospital acquired infections: compromised patient immunity, increasing variety of medical procedures, the use of invasive techniques which influence the creation of potential routes of infections as well as the transmission of drug resistant microorganisms such as bacteria within the crowded hospital population (Klemenc-Ketis et al., 2017; Li et al., 2017). Therefore, occurrence of hospital acquired infection is mainly influenced by poor maintenance of hygiene within the hospital setting, making patients vulnerable to other forms of infections; hence compromising the overall quality of care and patient safety.

The factors influencing development of hospital acquired infections can be grouped into four main categories: microbial agents, environmental factors, patient susceptibility and bacterial resistance (Gomides et al., 2019; Ribeliene et al., 2019; Shu et al., 2015). Hospitalised patients are often likely to be exposed to a variety of microorganisms which increases their vulnerability to further infections (Danielsson et al., 2019; Klemenc-Ketiš et al., 2017; Smits et al., 2018). On the contrary, Isbell et al. (2020) and Huda, Faden and Goldszmidt (2017) argued that the contact between patient and microorganisms by itself does not necessarily lead to the development of hospital acquired infections as the nature and frequency of

nosocomial infections must also be considered. Therefore, the probability that exposure to microbial agents would lead to the development of hospital acquired infections partially depends of the characteristics of the microorganisms involved, including their resistance to antimicrobial agents, inoculum infective material as well as their intrinsic virulence. Prior to the adoption of basic hygienic practices including the use of antibiotics within the healthcare setting, most of these infections were resulting from the pathogens of external origin such as the airborne and foodborne diseases and gas gangrene (Alswat et al., 2017; Hamaideh, 2017; Reis, Paiva & Sousa, 2018). Increased adoption of antibiotic treatment of the bacterial infections has significantly led to the reduction in mortality rates associated with the hospital acquired infections. The healthcare settings often include both the infected and those with low immunity to additional infections. The infected patients or the carriers of pathogenic microorganisms who are admitted to the hospital have been considered as an important source of infection for the other patients and healthcare practitioners (Amiri, Khademian & Nikandish, 2018; Danielsson et al., 2019; Wami et al., 2016). On the other hand, Isbell et al. (2020) and Huda, Faden and Goldszmidt (2017) identified negligence among care practitioners as an important source of hospital acquired infections, with poor hygiene plying a centre stage. Therefore, hygiene of hospital environment should be an important component of patient safety culture.

Long Hospital Stays as Outcome Measure of Quality and Patient Safety

Duration of hospital stay has been used as an important indicator for patient safety in most of the studies included in this scoping review. from a gender perspective, studies by Conroy et al. (2017), Jin and Yi (2019) and Padgett et al. (2017) noted that the elderly patients are often staying longer in the hospital compared to the younger patients, and that their families are often expected to bridge the gap between hospital and home. In a situation where the patients acquire alternate level of care during the discharge process, their families are not likely to fully manage all their care needs at home hence leading to the postponement of admission to a nursing home or obviating the need for institutional care following hospitalisation (Lotfi et al., 2018; Kristensen et al., 2016; Sexton et al., 2018). Prolonged stays in the hospital are bad for all patients, but the effects are more adverse among the frail and elderly as it can lead to increased vulnerability to

falling, infections, sleep deprivation and in some cases psychological and physical deconditioning (Conroy et al., 2017; Ingvarsdottir & Halldorsdottir, 2018; Padgett et al., 2017). Despite the known impacts of prolonged hospital stays, Staines et al. (2020) noted that more than 350000 patients often spend more than four weeks in the acute hospitals per year in England. Therefore, this is a clear indication that most of the hospitals still lack the necessary resources and policies for ensuring reduced length of hospital stays among patients.

An exploratory study by Han and Roh (2020) identified unexpectedly long hospital stays as an important risk for unsafe care within the primary care setting. In addition to increasing vulnerability of patients to hospital acquired infections,

Hwang, Kim and Chin (2019) and McComb et al. (2017) established that the prolonged hospital stays have significant financial losses on the involved healthcare organisations, which are mainly linked with reduced admission rates because of low bed count availability and need for intense care for the hospitalised patients. Even though the unexpectedly long length of stay (UL-LOS) used in the study by Wong et al. (2016) was not developed to explore the financial implications for prolonged stays in the hospital, its use may, as a beneficial side effect, help in reducing the total amount of hospital days. Consistent with the evidence from the previous studies by Brenner et al. (2020), Hwang, Kim and Chin (2019) and McComb et al. (2017), poor communication is among the key factors influencing the increased incidences of prolonged hospital stays, which is an indicator for unsafe care. During the unfolding of the patients' case, team of healthcare practitioners should be in constant communication, keeping each other updated about the patient condition and the type of diagnosis to be used on them (Brenner et al., 2020; McComb et al., 2017). Furthermore, all the care practitioners who join the team caring for a patient should be provided with a comprehensive information about what has already been done to the patient in order to reduce chances of misdiagnosis and delayed care delivery process (Gomides et al., 2019; Ribeliene et al., 2019; Shu et al., 2015). Miscommunication increases probability of complications for the patients, delays in care delivery hence a clear indication of system inefficiency. According to Wong et al. (2016), miscommunication accounts for at least 70% of the medical errors during the transition of care, which increase the ultimate length of stay and readmissions as the patients are exposed to additional complications such as hospital acquired infections. However, communication systems within most of the hospitals are often

fragmented hence limiting real-time sharing of patient information, leading to prolonged hospital stays.

Theme Five: Impacts of The Adverse Events on Patient Safety

Irrespective of the significant improvements in the patient safety in the recent years, adverse events are still important threat to the care quality hence among the urgent global problems in the healthcare sector which need to be addressed (Conroy et al., 2017; Ingvarsdottir & Halldorsdottir, 2018; Padgett et al., 2017). The present review established that almost a third of the hospital admissions and readmissions are often associated with the adverse events which largely depend on the reviewers' level of confidence (Gomides et al., 2019; Ribeliene et al., 2019; Shu et al., 2015). Consistent with the explanations by Ree and Wiig (2019), adverse events often harm first the patients and then followed by the caregivers and family members. Evidence from the present review shows that the adverse events can have different types of harms such as psychological distress, physical harm and in some cases death. From the family perspective, Haerkens et al. (2016), Patel and Wu (2016) and Zhao et al. (2019) noted that the patient safety incidences often inflict high financial burdens which most of the families may not be able to afford. In addition to the family, patient safety incidences may also have adverse financial impacts on the healthcare organisation; for example, Haerkens et al. (2016) noted that medical errors which are a key influencing factor for adverse events in the health sector often cost the US healthcare system appropriately \$45 billion annually. Even though patients and their caregivers are often the primary victims of adverse events, healthcare providers may also be emotionally affected hence considered to be the second victims. Results from the research studies by Cui et al. (2017) and Patel and Wu (2016) established that healthcare providers often experience different forms of psychosomatic and psychological symptoms after encountering the adverse events or handling patients experiencing adverse events; such as troubling memories, anxiety and difficulties in sleeping.

Jones and Johnstone (2019) and Ree and Wiig (2019) further stated that the affected healthcare practitioners often employ different coping strategies in order to respond to the stressful events of adverse impacts, with the coping strategies being employed can be less or more adaptive depending on the situation being addressed. Specifically, Jones and Johnstone (2019) noted that some of the healthcare providers often consider career changes or transfer from one healthcare

organisation to the other, trying to distance themselves with the adverse incidences, transform their attitudes towards work, seek social support or in some case consider practicing defensive medicine. Coping is primarily influenced by a group of individual factors such as traits, personality and regulatory control processes, as well as the situational factors such as stressor being perceived to be controllable or uncontrollable, duration of the stressor, severity of the stressor in addition to the healthcare organisational culture (Lotfi et al., 2018; Kristensen et al., 2016; Sexton et al., 2018). From a general perspective, critical appraisal of evidence presented in the studies by Conroy et al. (2017), Jin and Yi (2019) and Padgett et al. (2017) shows that the level of adverse events and most appropriate instrument to be used for the identification of such events largely depend on the quality of rater training as well as the ongoing monitoring. Adverse events are key factors compromising the quality of care provided to the patients and leading to the development of poor patient outcomes such as high rates of mortality and readmissions, long hospital stays, low satisfaction rates among patients (Amiri, Khademian & Nikandish, 2018; Danielsson et al., 2019; Ree & Wiig, 2019). Therefore, an effective patient safety culture should focus on eliminating or reducing the incidences of adverse events as a strategy for enhancing the quality of care and patient outcomes.

Gaps in Literature

Despite the existence of extensive research on patient safety, there are still important gaps in the literature which need to be addressed by future studies. Specifically, most of the previous studies assessing patient safety culture have adopted qualitative research methodologies such as case study, grounded theory and phenomenological designs hence limiting the generalisability of generated outcomes to the wider patient population due to the small sample size included. Furthermore, significant number of the quantitative and mixed-methods research studies in this context have adopted a cross-sectional research design which limits their ability to assess and report factors that influence the quality of patient safety from a long-term perspective as it may be achieved when longitudinal research is employed. Even though the evidence presented in the existing literature shows that healthcare organisation leadership plays a central role in influencing the level of patient satisfaction and patient safety culture, there is still limited knowledge regarding the most appropriate type of leadership style for achieving such goals,

hence an important area which requires further research. As a result of the limited scope of such studies, they could not assess factor structure invariance across a large heterogeneous sample comprising healthcare professionals from different departments or job categories or inclusion of other stratification variables.

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Chapter Four: Conclusions and Recommendations

Conclusions

The primary goal of this scoping review was to critically appraise evidence from the existing literature in order to understand the implications and outcomes of patient safety within organisations with either strong or weak patient safety culture. Based on this goal, generated knowledge from the present scoping review would be of wider scope compared to the original studies which either included healthcare organisation with strong or weak patient safety culture. Specifically, evidence from the previous studies can be used for developing a general definition of patient safety culture as the extent to which the values, beliefs and norms of a healthcare organisation support and promote realisation of patient safety. The beliefs generally extend to all levels of a healthcare organisation, including system, department and units, as well as involved in influencing the behaviours and actions of staff throughout the organisation. The present review has also identified patient safety culture as an important tool for enhancing the quality of care provided to the patients and reducing the incidences of adverse events which compromise the quality of care and increase vulnerability of patients to additional harm such as healthcare acquired infections. Furthermore, this review has reported that positive safety culture helps in directing behaviours of healthcare providers so that they prioritise patient safety; some of the positive behaviours that can be developed through adoption of positive patient safety culture include enhanced organisational learning, open communication, teamwork, feedback and nonpunitive responses to errors in addition to the shared cultural perceptions with respect to the significance of safety. Through positive patient safety culture, healthcare practitioners would be able to report and analyse their errors hence becoming an important tool for addressing safety issues. Furthermore, this review has also outlined the need for the healthcare organisations to develop a patient safety culture among their employees prior to implementing structural interventions; hence the need to emphasise on knowing the culture of patient safety.

In addition to its primary aim, this scoping review focused on answering three research questions; (1) what are the impacts of organisational leadership on patient safety? (2) what are the strategies for enhancing patient safety culture within healthcare organisations? and (3) what are the implications of patient safety culture in different healthcare settings? With reference to the first research question, it is

justifiable to note that this review has established that healthcare organisational leadership plays an important role in formulating and implementing positive patient safety culture. The present review has identified organisational leadership as a key factor that influence the quality of care and patient outcomes. Improved quality of care services, including moderate-severe pain, high-risk residents experiencing pressure ulcers, physical restraint use and catheter in bladder, was reported among healthcare organisations which use consensus manager leadership style.

Furthermore, evidence from the primary care settings revealed that resonant leadership played an important role in influencing improved quality of care and nature of the patient outcomes such as reduced mortality and medication error rates. Leadership walk-rounds which is a key component of task-oriented leadership style was also established to influence improved levels of care quality with reference to the assessments that were made by relatives and staff members. The present review found the transformational leadership to be positively associated with the development of a strong patient safety culture among nurses working in the critical care setting. On the contrary, the transactional leadership style was reported to lead to the realisation of a weak relationship between the nursing unit patient safety culture and patient outcomes in the primary care setting. Therefore, these findings show that higher total structural empowerment score was associated with the realisation of improved safety levels and that the empowered team members contributed to positive impacts on the quality of care provided to the patients at different hospital settings.

The second research question focused on the identification of the most appropriate strategies for enhancing patient safety culture within healthcare organisations, with the analysis leading to the identification of three key strategies; structured educational programmes and impact on patient safety, simulation-based training programmes and impact on patient safety and multicomponent organisational strategies and impact on patient safety. The strategies for enhancing patient safety culture outlined in this review were specifically focused on enhancing communication and improving competency levels of the care providers to handle different patient conditions through advanced training. Specifically, these three training programmes were focused on enhancing communication skills and encouraging the healthcare providers to remain attentive to the needs and preferences of the patients together with their families in order to facilitate the

development of a patient safety culture. The third research question focused on assessing the implications of patient safety culture in different healthcare settings, with the analysis outlining improved patient outcomes as the key indicator for enhanced patient safety. The specific attribute to patient outcomes reported in the present review include maintained and improved patient functional status, unharmed and protected patient safety, as well as the patient satisfaction in relation to the ability of the patients to report comfort and contentment with the care services provided to them. The other implications for patient safety outlined in this review include reduced mortality rates, reduced rates of readmissions, safety of care, positive patient experience, effectiveness of care, timelessness of care as well as the effective use of medical imaging.

Strengths and Weaknesses of Themes

The four themes generated from this review have diverse strengths and weaknesses. For example, the first theme, leadership and its impacts on patient safety implication, provide extensive explanations regarding the impacts of leadership in the realisation of patient safety culture, which its key strength. However, none of the developed subthemes provide the precise leadership strategies that are appropriate for a given healthcare organisation as the reviewed studies were derived from different healthcare settings. Therefore, there is need for additional research in this context in order to identify and report leadership strategies which are appropriate for the specific healthcare organisation in the development of positive patient safety culture. Furthermore, the key strengths of the second theme, patient safety culture improvement practices, include identification of healthcare-based practices such as involving patients and their families in the treatment process. Nonetheless, the reviewed studies in this context still fail to provide comprehensive evidence which are specific to different healthcare organisations with reference to the fact that such organisations often have varying needs and focus in terms of patient management; hence further research is needed to assess the precisely healthcare settings where the identified patient safety culture can be implemented and lead to the development of positive outcomes.

From a general perspective, the reviewed studies revealed that realisation of patient safety culture within primary care setting is more challenging than in other settings. However, they failed to provide precise factors that have led to the

development of such disparities and to propose specific approaches that can be used for enhancing patient safety culture within such settings. Under the fourth theme, the reviewed studies provided detailed explanation of the adverse events associated with poor patient safety culture as well as the strategies that can be used to address such problems, hence an important strength. However, very limited evidence has been provided regarding the cost-benefit analysis perspectives of the strategies to be employed in addressing adverse events associated with poor patient safety. Therefore, adoption and implementation of such strategies may not be cost viable and may not be appropriate for healthcare organisations from underdeveloped or developing countries which often operate under limited resources and budgets. Therefore, extensive research should be conducted in this context in order to determine the cost-benefit relation of each strategy proposed to be used in addressing adverse events of poor patient safety culture.

Recommendations

Future Research

In addition to the present study successfully achieving all of the objectives, it has also identified areas that require focus in future research. The first recommendation for future research results from the methodological design employed during this study. This study specifically adopted scope review methodology in the collection and analysis of the existing research on patient safety implications and outcomes within a healthcare organization concerning strong or weak patient safety culture. However, this methodology is characterised for widening the scope of research allows for the collection and critical appraisal of existing evidence on the research topic from a general perspective. Through this approach, the present study collected data that was not necessarily helpful in achieving the objectives; this can be related to the fact that this approach entails the collection of data irrespective of the quality present in the articles that we reviewed.

Policies

In addition, this research primarily focused on the implication of patient safety culture specifically within healthcare set up, how the leaders of healthcare organizations have an impact on patient health safety, and what are the strategies for ensuring that patient safety culture was ensured in a health care organization. Therefore, the findings of this research could be used in understanding how patients

in a healthcare setup play a major role in ensuring their own safety. Hence, future research in this area should expand its scope in order to include the roles that patients play in ensuring their own safety, what are the impacts of patient's involvement in ensuring their own safety, and lastly what are the factors that limit the patient involvement in ensuring their own safety. A key observation made during this research was that the previous researchers provided limited information on how the leaders of healthcare organizations have an impact on patient health safety. Furthermore, the present study focused on the patient safety culture improvement practices and reported that both structured education and training-based programs on patient safety culture make are highly linked to enhancing patient culture. However, during this study, limited explanation about the circumstance under which the financial status of a healthcare organization aids in the achievement of these programs hence an important area that should be addressed by future research.

Organisation

The present review has identified patient safety culture as an important policy for improving quality of patient outcomes by ensuring general performance of the healthcare organisations. Irrespective of the strong face validity of the different forms of patient safety culture strategies, this review established that there is limited evidence for supporting definitive impacts on patient safety climate outcomes. Therefore, it is recommendable for the healthcare organisations to consider robust evaluation designs during the process of implementing such potentially resource intensive strategies. However, organisations should adopt transformation leadership and leadership walk-rounds as key strategies for motivating and ensuring successful implementation of the patient safety culture policies.

Education and Training

The present review of literature has identified training programmes such as structured educational programmes, simulation-based training and multicomponent organisational strategies as key approaches that can be used by the healthcare organisation to train and enhance competency of healthcare practitioners in the patient safety culture realisation context. Even though all the three education and training programmes were found to be effective in increasing competency of healthcare practitioner towards patient safety culture realisation, the simulation-

based training was found to be the least effective, as it does not involve close relationship between the trainer and trainees as in the case of the other two training programmes. Therefore, it is recommendable for the healthcare organisation to consider using structured educational programmes and multicomponent organisational strategies for training and developing their staffs and ensuring successful realisation of patient safety culture.

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