

**The barriers to reporting medication administration errors for registered nurses in Kuwait.**

By

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*Thesis  
submitted to Flinders University  
for the degree of*

**Master of Nursing – Coursework and Research**

The College of Nursing and Health Sciences

Date 6/11/2020

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## SUMMARY

**Background:** Medication administration errors (MAEs) represent the most prevalent type of medical error. MAEs can have a major impact on the safety and quality of health care received by patients, and there is evidence to suggest that their occurrence is increasing. Therefore, improving and protecting patient safety can be facilitated by a clearer understanding of MAEs, including the possible elements that may affect health professionals' readiness to report such errors. The purpose of this study is to identify and explore the barriers that prevent nurses from reporting MAEs in Kuwait.

**Aims:** To identify and understand the key barriers that prevent MAEs from being reported by nurses in general hospitals in Kuwait.

**Methods:** Data were collected via an online survey from registered nurses (RNs) in two major public hospitals in Kuwait. The structured survey collected data on demographics and the nurses' backgrounds, the nurses' perceptions of reporting MAEs, and potential barriers to reporting MAEs. A total of 550 completed surveys were collected. The Statistical Package for the Social Sciences (SPSS) version 25.0 was used to analyse the data. The data was examined to ensure it met the distribution, skewness and assumptions for using a Pearson Correlation. Pearson correlation coefficient analyses were used to examine the relationship between variables.

**Results:** The study shows that RNs were willing to report MAEs in hospitals in Kuwait. The study also found that RNs reported a fear of being punished due to MAEs, and that hospital administrators (Head Nurse, Nursing Directors, Hospital Directors) contributed to a negative work culture, which further impacted on the reporting of MAEs in Kuwait.

**Conclusion:** The majority of RNs from the two sample hospitals in Kuwait acknowledged the need to report MAEs. Nevertheless, fear of being punished or blamed, and the negative attitude of nursing administration towards RNs that reported MAE remain the potential barriers to reporting MAEs in Kuwait.

**Key words:** medication administration, medication errors, patient safety, Kuwaiti nurses, report incident, nursing barriers, medication error reporting, nursing medication errors, nursing reporting, nursing errors.

# DECLARATION

I certify that this thesis does not incorporate without acknowledgment any material previously submitted for a degree or diploma in any university; and that to the best of my knowledge and belief it does not contain any material previously published or written by another person except where due reference is made in the text.

Signed.....Eidan Alrasheid.....

Date.....06/11/2020.....

## **ACKNOWLEDGEMENTS**

Firstly, I would like to thank my principal supervisor, Dr Yvonne Parry, for her advice, commitment, support, and guidance which have been helpful and professional. Secondly, I would like to thank Dr Tiffany Conroy, my co-supervisor, for her commitment and support during my study at Flinders University. I express my sincere thanks to the Kuwaiti Ministry of Health for their sponsorship and support during my data collection.

My thanks go to all nurses who participated in this study in Kuwait, and especially to the Nursing Directors and Directors of the hospitals, who facilitated the distribution of the survey. Without their support the data collection would have been impossible to achieve.

Finally, I would like to thank my family and particularly my brother Abdullah for being supportive during my study. Also, I would like to thank my beloved wife, Abrar, for her encouragement, love, and support.

# CHAPTER 1: INTRODUCTION

## 1.1 Introduction

Global healthcare systems are facing numerous challenges, and errors in medication administration are among the most significant of these challenges (Rutledge, Retrosi & Ostrowski, 2018). Medication administration errors (MAEs) are defined as preventable, medication-related events resulting in a failure in the treatment process and subsequent harm to a patient (Lavan, Gallagher & O'Mahony, 2016). The presence of MAEs is associated with an increased risk of patient mortality and morbidity (Almutary & Lewis, 2012; Hammoudi, Ismaile & Abu Yahya, 2018). This increased risk of adverse and potentially life-threatening outcomes for patients who experience MAEs highlights the paramount importance of understanding this issue. In recent years, MAEs have become a serious burden on health systems, particularly in terms of patient rehospitalisation and the related impact on quality of care, along with adverse complications for the patient as a result of longer hospitalisations (Lee, 2017).

There are many factors that contribute to MAEs in the health sector, including administrative factors and personal factors. In Australia, MAEs are the second highest reported incident type in hospitals, representing approximately 20% of total reported incidents (Almutary & Lewis, 2012). Therefore, in health settings reporting MAEs is considered to be a vital factor in promoting patient care. Reporting errors in an efficient and timely manner allows healthcare providers to develop strategies that prevent the errors from reoccurring (Haw, Stubbs & Dickens, 2014). RNs (registered nurses) play an important role in patients' safety during and after medication administration; indeed, RNs are often considered the first line of health professional defence against MAEs (Svitlica, Simin & Milutinović, 2017). Kuwait is a country where healthcare institutions currently lack adequate MAEs reporting strategies and protocols. Consequently, in Kuwait research in this area has previously not been conducted in a systematic manner, representing a significant gap in knowledge that this thesis seeks to address.

This chapter will provide a comprehensive overview of the current research, the study and its significance will be outlined and methodological and ethical considerations discussed.

## 1.2 Statement of the problem

There is a lack of research on the reporting of MAEs by RNs in general hospitals in Kuwait. There is, therefore, a clear need to investigate the rate of reporting of MAEs in this setting, as well as a need to identify and investigate any barriers and enablers related to this issue.

### **1.2.1 Research question**

This study will explore RN reporting of MAE in Kuwait by addressing the following key research questions:

1. How accurately are MAEs reported in Kuwait by RNs?
2. Are RNs in Kuwait aware of the importance of MAE reporting?
3. What are the barriers to reporting MAEs in Kuwait?

A survey measuring the reporting rates of MAEs reported by RNs will address the question in two Kuwaiti general hospitals. The research questions have been developed from those of the Almutary and Lewis's (2012) survey, which aimed to evaluate nurses' understanding of MAEs and identify the reporting of MAEs in Saudi Arabia. This study identified potential barriers to MAE reporting. As Almutary and Lewis's (2012) research took place within a demographic and culturally diverse nursing context similar to that of Kuwait, the survey is useful for the current research.

### **1.2.2 Aim and objectives of this study**

This study aims to identify and understand the key barriers that prevent MAEs from being reported by RNs in two general hospitals in Kuwait. The objectives are to:

- Gain an overview of the rate of MAEs in Kuwaiti general hospitals
- Identify the rate of under-reporting
- Identify barriers to reporting of MAEs by RNs in Kuwaiti general hospitals.

## **1.3 Background**

In recent years there has been growing interest in the increase of MAE reports across the healthcare industry. Rutledge et al. (2018) illustrate that between 11 and 48% of nurses in the United States alone fail to report medication errors owing to impediments such as individual apprehension, culture, and lack of knowledge. Besides, in the United Kingdom, 48% of nurses would account for a medication error by a colleague, and 40% would report themselves (Haw et al., 2014). On a global scale, in Asia, Lee (2017) asserts that 19% of the Korean nurses would never report medication errors that are committed, while 20% would report the incidences only to the physician but not to the nurse manager. Additionally, the study by Lee (2017) asserts that, in general, reporting rates in Korea were inadequate, with scales of less than 29%. Prominently, there is no clear definition of errors, which further lowers the chances of reportage. Hammoudi et al. (2018), underscore that in the case of Saudi Arabia, over 58% of nurses confirmed that less than 20% of medication errors were being reported. Alduais et al. (2014) studied the barriers to medication error reporting and concluded that 58% of nurses reported having a comprehensive system set aside for reporting medication errors, as compared to 28% who highlighted a lack of a favourable system in place. On the other hand, Yung et al. (2016) studied the perceived barriers of medical errors reporting and it is apparent from their research that 65% of nurses had no prior

experience on how to report medication errors. Apart from that, their study stresses that of the total nurses who report medical errors, 83.3% of them do not make any effort of reporting near-miss errors.

MAEs can severely compromise patients' safety. For example, Haw et al. (2014) estimate that MAEs are responsible for approximately 7000 deaths in the United States annually. Furthermore, recent studies present evidence that not reporting MAEs leads to a decrease in the overall quality of care provided in clinical settings (Soydemir, Seren Intepeler & Mert 2017). Reporting of MAEs is thus fundamental to the provision of quality health care. Unreported MAEs can have significant impacts on quality care, as a report can help determine the cause of MAEs and minimise the chance of similar errors occurring in future (Sajjad, Gowani, Kazmi & Mansoor, 2017). Given that RNs play a critical role in the medication administration process in health care, with daily duties invariably involving the administration of medication to patients, their potential role in addressing the problem of MAEs is of considerable interest (Alduais, Mogali, Al Shabrain, Al Enazi & Al-awad, 2014). Therefore, it is important to identify the barriers to nurses reporting MAEs. Several factors that may contribute to the under-reporting of MAEs among nurses have been identified, including administrative barriers and personal barriers (Almutary & Lewis, 2012).

The reporting rates of MAEs by nurses is considered to be one of the main administrative challenges in the healthcare industry (Hammoudi et al., 2018). One of the factors that contributes to the under-reporting of MAEs among RNs is fear of disciplinary action (Soydemir et al., 2017). Nurses have serious concerns regarding the possibility of being punished when it comes to reporting MAEs to the nursing administration. In addition, a negative atmosphere surrounding feedback may create hesitation in RNs towards reporting errors – RNs are often not included in feedback mechanisms regarding MAEs. For example, a recent study found that some RNs are not told if their written reports are correctly written, submitted or acted upon after submission (Samsiah, Othman, Jamshed & Hassali 2016), and as a result of this lack of active feedback, RNs may become less interested in reporting MAEs. The lack of administrative support towards RNs reporting MAEs, coupled with a fear of punitive measures, may thus induce hesitation on the part of RNs (Lee, 2017; You, Choe, Park, Kim & Son, 2015). Therefore, it is vital to ensure the presence of a culture of safety among RNs when it comes to reporting MAEs, by minimising the perception of fear of punishment, and by providing educational programs on writing and submitting accurate MAE reports (Lee, Yang & Chen 2016).

Another significant barrier to the reporting rates of MAEs is related to the reporting process itself. According to Mostafaei et al. (2014), RNs may hesitate to report MAEs due to complex reporting systems and the lack of a clear definition of MAEs. As a result, RNs face difficulty when writing MAE reports. Nursing administrators subsequently tend to focus on RNs' errors, instead of the

reporting system, or indeed the report itself. There is also evidence to suggest that nursing administrators may act aggressively towards RNs, which creates a fear of reporting their errors (Hajibabaei et al., 2014; Poorolajal, Rezaie & Aghighi, 2015). Holmström, Laaksonen and Airaksinen (2015) suggest that the “blame culture” common in clinical settings contributes to a reluctance among RNs to report MAEs, in particular due to fear of being blamed by the administration. Finally, another factor related to the reporting process is insufficient training programs for nurses in medication safety, coupled with the difficulty of reporting systems in health environments (Svitlica et al., 2017).

The general trends regarding MAEs and the limitations of current reporting practices are of particular interest to practitioners working in Kuwait. At present, there is inadequate research on the reporting of MAEs by RNs in Kuwait (Ghobashi, El-ragehy, Ibrahim & Al-Doseri, 2014; Ahmed, Saada, Jones & Al-Hamid, 2019). It is important to conduct the research in Kuwait for the following reasons: to evaluate the current rate at which MAEs are reported; to gain an overview of the type of errors being made; to gauge nurses’ readiness to report the MAEs; and to understand the barriers to reporting them. MAEs could have serious social impacts, not just in terms of the reduced quality of care being provided, but also regarding the possible loss of credibility of general hospitals to provide higher quality health care. In addition, MAEs may have an impact on the financial stability of the country, to such an extent that minimising MAEs may be economically vital for the healthcare industry (Ahmed et al., 2019). Therefore, it is essential to identify and explore the barriers that nurses encounter in the reporting of MAEs in a general hospital setting in Kuwait.

## **1.4 The Kuwaiti health context**

### **1.4.1 Nurses are from various cultures and have a variety of qualifications**

The State of Kuwait is located on the coast of the Arabian Gulf. Private and government hospitals within Kuwait are regulated by the Ministry of Health (MOH), which is the country’s largest healthcare provider. Kuwait is divided into five health regions and each has one general hospital. The system of health care in Kuwait is different from other healthcare systems, particularly in regard to the hospital workplace and nursing shifts. The hospitals in Kuwait have fixed working hours, and there is no overtime or part-time hours at the hospitals. Furthermore, male nurses are not allowed to work with female patients in female wards or the emergency department. There is a separation of male patient and female patient wards. Nurses of all nationalities are employed in Kuwait, working in public and private hospitals (Central Statistical Bureau, 2019).

Nurses with varying levels of qualification work in Kuwaiti MOH hospitals. Firstly, there are nurses who hold Nursing Certificates, which is for nurses who did not complete high school. Secondly, assistant nurses hold an associate degree, which is awarded after a two-and-a-half-year program. Thirdly, there are registered nurses (RNs) who hold a Bachelor of Science in Nursing which is 4

years program (Al-Kandari & Thomas, 2009). The new generation of hiring standards in the MOH requires a Bachelor of Science in nursing to meet the MOH nursing care standard. The development of the Kuwaiti healthcare industry and the expansion of major hospitals have required the recruitment of international nurses from different educational and cultural backgrounds, and that may apply pressure on the MOH to update their knowledge of international nurses, such as awareness of policies and protocols in other countries. According to the Annual Statistical Abstract (2018), the estimated number of non-Kuwaiti nurses in Kuwait is 21,913 nurses, compared to 1102 Kuwaiti nurses in Kuwaiti general hospitals (Annual Statistical Abstract, 2018). According to Al-Kandari & Ajao (1998) The low percentage of the Kuwaiti nurses working in hospitals due to low income for nursing and inadequate community awareness of the nursing profession. Given this high level of cultural diversity and nursing qualification variability, clear provisions and training for the reporting of MAEs are especially important. Figure 1.1 (below) provides a general overview of the organisational structure of the Nursing Department within the MOH in Kuwait.

#### **1.4.2 Nursing management in Kuwait**

Kuwait is divided into five health nursing regions and each region has one major hospital and sub-major hospital, such as orthopaedic and maternity hospitals. All regions and hospitals are under the central administration of the State of Kuwait. The management of a nursing region is performed by the Director of Regional Nursing, who is responsible for providing administrative support to the nursing director of each hospital and nursing clinic. This organisational structure for the Nursing Department in the Kuwaiti MOH is important as it enables nurses to know what their responsibilities are and to whom they are accountable. It thus allows the nursing managers and nurses to concentrate on their respective duties, roles and responsibilities. Furthermore, the structure coordinates all organisational activities within the health region, so there is minimal duplication of effort and conflict between health regions. All of the abovementioned centres' work is regulated, managed and organised by a common set of systems, rules and legal statutes.

The Director of Regional Nursing position and role is considered to be one of the highest ranking nursing administrators in Kuwait. All mid- and high-level nursing management directors are Kuwaiti nationals. Assistant Nursing Directors and Head Nurses may be from different national backgrounds. Most of the nursing employees are expatriates working at different levels in clinics and hospitals (Al-Enezi, Chowdhury, Shah & Al-Otobi, 2009). The percentage of Kuwaiti nurses in the hospitals is 2.4%, compared to 97.6% non-Kuwaiti nurses in the MOH (Annual Statistical Abstract, 2018). The majority of non-Kuwaiti nurses in the MOH are Indian and Filipino, and the rest are nurses from several other countries (Atkinson, 2015). The level of job satisfaction of Kuwaiti nurses is significant because of the higher salaries provided for those who work as a nurse (Al-Enezi et al., 2009).

The nurses report medication administration errors in all hospital context as follow;

*The report form should be completed by the nursing personnel who was involved or had discovered the incident. All the incidents should be reported immediately to the supervisor for appropriate action. The incident should be reported to the concerned/authorised personnel (physician or pharmacist or public relation officer or nurses) as per relevancy. The incident should be assessed by the nursing supervisor on duty at the scene and comments should be written. The report must be written by the nursing personnel and submitted to the nursing supervisor within 2 hours after the incident took place. The report is forwarded to the nursing director within 24 hours after the incident took place for his/her comments and transferred to the director of the hospital/primary health centre (PHC) for further action if needed. The report is forwarded by the nursing director to the regional nursing director if needed. A copy of the incident report is retained in the nursing director's office in case the incident requires referral to the director of hospital/PHC/regional nursing director. The nursing director follows up the progress of the incident with the assigned area Assistant Director of Nursing (ADN). The final result should be handed over to the nursing director (Hospital/PHC) by the assigned area ADN. The original incident report with all comments should be sent to the nursing workplace risk management committee in the hospital/PHC weekly. The nursing workplace risk management committee submits the incident report with their comments and recommendations to the nursing director twice per month. Original copy of the incident report should be retained in the nursing director's office for one year. The nursing workplace risk management committee submits the final audit report to the nursing department once in 3 months.*

The text above is from Nursing Workplace Incident Report Policy in hospitals in Kuwait

## **1.5 Significance of the research**

In recent years, several studies have focused on exploring and understanding the barriers to reporting MAEs (Hammoudi et al., 2018). Nevertheless, there is a lack of studies which identify barriers to reporting MAEs among nurses in Kuwait. It is imperative to note that reporting medication errors and near misses enhances the attainment of a continuum of quality healthcare. Patient safety is one of the primary criteria for assessing the quality of care in the healthcare industry and, given the close relationship between MAEs and patient safety, a clearer understanding of MAEs and their reporting in Kuwait is essential. By ensuring patient safety during hospitalisation, adverse events will be limited, and the overall quality of Kuwaiti health care will benefit (Ahmed et al., 2019).

This study will examine the role and impact of MAE reporting systems in Kuwaiti general hospitals, and how these systems may limit the understanding of both the incidence and scope of MAEs. Mostafaei et al. (2014) suggest that under-reporting of MAEs among nurses may, in part, be due to the lack of adequate reporting systems in hospitals. The need for supportive systems that encourage nurses to report any medical errors is vital in the healthcare industry, as nurses suffer from a "disciplinary culture". Unsupportive administrators could lead to a negative impact on nurses' performance, which can lead to a lack of reporting errors in the unit (Alduais et al., 2014; Soydemir et al., 2017). This study aims to make a significant contribution to a deeper understanding of MAE reporting systems and their impact on MAE reporting in Kuwait.

Fear of disciplinary action is considered to be another prominent barrier to the reporting of MAEs by nurses (Bahadori et al., 2013). Related to this aversion to disciplinary action is the fear of legal action which could lead to nurses being dismissed from their jobs (Bayazidi, Zarezadeh, Zamanzadeh & Parvan, 2012; Tabatabaee, Kalhor, Nejatadegan, Kohpeima Jahromi & Sharifi, 2014). By developing a deeper understanding of the nature, extent and persistence of these fears, this study aims to provide a clearer picture of the barriers and enablers to reporting MAEs by RNs in Kuwait. This research is intended to inform practitioners and administrators as to how best to alleviate or reduce such fears among RNs, thereby improving consistency and accuracy in MAE reporting.

Svitlica et al. (2017) state that poor communication between nurses and doctors is another prominent cause of MAEs in hospitals. Therefore, it is important to explore communication barriers in order to enhance the reporting rate of MAEs (Ahmed et al., 2019). Understanding these barriers can contribute to the development of health care quality and patient safety (Hammoudi et al., 2018). The evaluation of MAE reports provides the management with an opportunity to develop strategic plans to prevent errors reoccurring, as well as improving communication channels between nursing managers and RNs (Mostafaei et al., 2014).

Identifying the barriers to reporting MAEs can contribute to the development and improvement of the reporting process itself (Murthy, 2014). For instance, long, complicated reporting processes may cause nurses to hesitate in making such reports, due to a fear of using the wrong documentation or wording and the time that is consumed in completing the reports which may delay patient care and the medication being given on time (Hammoudi et al., 2018; Mostafaei et al., 2014). As such, it is important to develop and refine hospital reporting procedures in such a way that barriers to reporting are minimised, not just for RNs but throughout the clinical establishment, a process that may help to promote a more open work culture for RNs (Samsiah et al., 2016). For instance, policies that emphasise regular training for RNs on how to write MAE reports and seek feedback have been found to increase the reporting rate of MAEs, as well as promote a friendlier environment among nurses and administration (Yung, Chu, Hou & Tang, 2016; Bayazidi et al., 2012). Moreover, training programs can increase nurses' skills in identifying MAEs, and may encourage nurses to take an active role in suggesting more effective ways of documenting of these errors (Samsiah et al., 2016). Policies that emphasise nurses' knowledge of reporting norms and procedures are therefore conducive to improving MAE reporting in general (Holmström et al., 2015). The findings of this study will inform policies that promote the clear and timely reporting of MAEs in Kuwait.

More than 28,000 nurses of many nationalities are employed in Kuwait, working in public and private hospitals (Central Statistical Bureau, 2019). Different countries may have differing definitions of MAEs, as well as vastly different reporting systems. It is therefore important to

understand the impact that a multi-national workforce may have on the barriers for nurses, as well as to increase the knowledge of the importance of reporting MAEs among nurses (Ahmed et al., 2019; Yung et al., 2016). The findings of this research will contribute to reducing the obstacles that nurses face in Kuwait and contribute to the development of a system that helps to encourage the reporting of MAEs.

## **1.6 Design, methodology, methods**

This study will adopt a quantitative approach for the research methodology. Based on the positivist paradigm, quantitative methods are used to gather empirical and generalisable evidence related to a topic of particular scientific interest (Polit & Beck, 2017; Queirós, Faria & Almeida, 2017). The specific data collection tool for the current study will be a structured survey based on the Medication Administration Errors Reporting Scales, which were further developed by Almutary and Lewis (2012). The survey is comprised of an online, structured self-report survey. The content validity and reliability of the survey has been assessed and found to be acceptable by previous researchers (Almutary & Lewis, 2012). The survey contains three groups of questions. The first group collects basic demographic information such as age, gender and ethnicity. The second group explores the RNs' attitude towards MAEs and their readiness to report them to management in general hospitals. Also, RNs are asked about reporting MAEs if the errors did not cause any harm to the patient. The third group of questions is concerned with barriers to reporting MAEs. This section examines the causative and psychological factors that make RNs hesitate to report errors they witness. One of the main advantages of using such a survey is the anonymity and confidentiality of participants, which tends to increase participation rates (Schneider & Whitehead, 2016).

## **1.7 Ethics approval**

The research is required to obtain ethics approval before being conducted, in order to assess any risk that the research may pose to participants (National Health and Medical Research Council, 2007). The first step was to obtain approval from Flinders University Social and Behavioural Research Ethics Committee (SBREC) (number 8357). The second step was to obtain ethics approval in Kuwait from the Kuwaiti Research Ethics Committee in the MOH (number 3289). A letter of introduction was given to Directors of Hospitals to gain permission to post flyers in common areas so that RNs could access the link to the online survey. On the completion of the ethics application a researcher arranged a meeting with RNs at a hospital to introduce the research topic. RNs would be informed that participation in the research is voluntary and the information provided by RNs would be anonymous and treated confidentially. The completed survey data would be stored at Flinders University's online data storage, OneDrive. The Kuwaiti MOH does not have access to these records.

## **1.8 Summary and outline of thesis**

Chapter 1 has presented background information, research significance and the purpose of the study regarding barriers to the reporting of MAEs in Kuwait's healthcare system. MAEs are considered an avoidable event, and their mitigation can both promote patient safety and improve the quality of care. There is a lack of research and literature regarding MAEs among nurses in general hospitals in Kuwait. Consequently, this is an important area of academic interest, as this lack of research limits researchers' and practitioners' understanding of the incidence and scope of MAEs in Kuwait. The current study will add to the understanding of the barriers nurses face in reporting MAEs in a Kuwaiti setting. The findings of this study will thus inform the development of policies that promote the reporting of MAEs in Kuwait and elsewhere.

Chapter 2 will critically review the literature to determine the barriers associated with RNs reporting MAEs in health contexts such as acute care. It will examine the significance of MAEs and general barriers to reporting, and discuss the professional and training-related barriers. Lastly, the literature review will identify the personal and administrative factors that contribute to reporting MAEs.

Chapter 3 will explain the methodology, study design, data collection and data analysis of a quantitative study to examine the relation between factors that contribute to reporting MAEs. Chapter 4 will present the results of the survey to n =550 nurses from two Kuwait hospitals and subsequent statistical analysis. Chapter 5 will discuss the findings of the survey and highlight recommendations that could reduce MAEs, and Chapter 6 will outline the key conclusions.

## CHAPTER 2: LITERATURE REVIEW

This chapter will present the theoretical framework for the research and will present a review of the literature relating to MAEs (medication administration errors) in healthcare settings. This review will discuss the key themes related to MAE reporting among nurses, including general barriers to reporting, professional and training issues, and personal and administrative factors. The main barriers to reporting MAEs are identified as: complicated processes for reporting MAEs across many countries; lack of knowledge about MAEs; fear of being punished; and the lack of training on reporting MAEs. Moreover, administrative actions towards nurses and personal attributes of nurses may also have an impact on the reporting of MAEs.

### 2.1 The theoretical framework

This research adopts social constructionist theory to examine nurses' barriers to reporting MAEs in Kuwait. On a broader scale social constructionism is a necessary and sufficient framework as it helps to understand the reasons behind individual behaviour towards reporting MAEs. To initially understand the role of cultural background, workplace culture, hierarchy, power and barriers to the report of medication errors the researcher used a validated questionnaire. Social constructions theory assigns meaning to particular events and behaviours (Parry 2012). Therefore, social construction theory was used here to try to determine the role of the nurse in reporting MAEs and the barriers they face. Thus, the use of social construction through a questionnaire with comments sections informs the actions of the RN in reporting MAEs. This first step in researching this area provides an overview within the Kuwait context forming a foundation for further research.

Social constructionism is a theory that studies the development of knowledge through interactions between individuals, and how those interactions shape social activity, ideas and identity (Berger & Luckmann, 1991). Social constructionism can help to examine how a group of individuals within an organisation interacts, and how those interactions may act as barriers or enablers to behaviour. The conception of knowledge as jointly constructed, and formed separately by each individual in society, is fundamental to social constructionism (Andrews, 2012, Parry 2012). Social constructionist theory is suitable for the current research project as it examines the knowledge created from involvement, and recognises the value of interaction and experience (Kruglanski & Higgins, 2016). Specifically, social constructionism will help to explore the interactional basis of barriers to nurses and management in relation to the reporting of MAEs. Furthermore, social constructionism provides a logical framework to assess the influences on the individual that affect the reporting process. It is important to adopt a theoretical approach that encompasses how individual values, beliefs and functions emerge from interactions with the wider social context (Galbin, 2014).

### **2.1.2 The theoretical framework in context**

Social constructionist theory emphasises the idea that social processes are the basis of knowledge, and that this influences attitudes, behaviours and functions (Burr, 2015). Social constructionism further highlights the importance of the construction and impact of power relationships on the individual, as these can impact on behaviour (Burr, 2015). In the context of the current study, the relationships between nursing management and RNs (registered nurses) is likely to contribute to a decreased level of reporting of MAEs, if RNs feel disempowered and under-supported by their managers (Boamah, Laschinger, Wong & Clarke, 2018). Social constructionism can help in gaining a clearer understanding of the nature of this relationship, as well as the socially constructed notions of what constitutes “support”. The survey deliberately measures the role of power in the RNs’ ability to report MAEs.

Workplace empowerment is essential between staff members and mid- and higher-managerial staff. Empowerment is determined by various factors within a workplace, and it is associated with a range of job performance and job satisfaction outcomes. RNs require support from the nursing management during reporting MAEs in order to increase their sense of empowerment (Boamah et al., 2018). Therefore, examining empowerment in the workplace environment is vital to develop a complete understanding of the reporting of MAEs. Boamah et al. (2018) state that empowerment is influenced by management behaviours which promote innovation, support, and provide guidance and effective communication. A good leader empowers nurses by encouraging them to perform to the best of their abilities. These concepts from within social constructionist theory will thus aid in the exploration and understanding of the barriers to MAE reporting. This literature review will outline and discuss the previous research in this area.

## **2.2 Introduction**

The current literature review focuses on the barriers to reporting MAEs by nurses, as found in published primary research articles.

Medication administration includes a variety of processes that involve doctors, pharmacists and nurses to provide patients with medication. Nurses play a vital role in the administration of medication to patients, and nurses are responsible for maintaining patients’ safety during and after medication administration (Haw et al., 2014). Therefore, RNs are considered to be the frontline in patient care as they are a direct connection between medication and patients’ safety (Sajjad et al., 2017).

MAEs are one of the primary factors that can endanger patients’ safety, and which can therefore affect mortality and morbidity rates (Bayazidi et al., 2012; Hammoudi et al., 2018). For example, Holmstrom et al. (2015) state that MAEs are responsible for the death of 7000 patients annually in the United States. Therefore, it is essential for hospital and nursing management to evaluate the

barriers to reporting MAEs, as these factors may influence patients' safety and quality of care. This is of particular relevance to Kuwait, as there is currently minimal reporting of MAEs among nurses. The purpose of this literature review is to identify and assess current research on the topic of MAE reporting among nurses. Firstly, it will outline the search strategies used to collect and select relevant research articles. Secondly, the selected studies will be critically appraised. Finally, the key thematic findings will be explored. These findings encompass the general state of current research into MAEs, as well as the barriers that nurses encounter when reporting MAEs. In discussing these key findings, the current review highlights the significance of MAE reporting in the broader healthcare context, as well as identifying any potential limitations.

## **2.2 Article search strategies and selection**

A systematic search of published literature was used to identify studies relevant to the research topic. Primary resources were collected from electronic databases via Flinders University Library. This was chosen because Flinders University Library, in common with most other higher education libraries, subscribes to a useful range of databases. Due to the relative lack of research into MAEs, conducting as wide a search as possible was considered prudent. The library search facility also allowed easy identification of old findings and more up-to-date findings (Cronin, Ryan & Coughlan, 2008).

The search encompassed the following electronic databases: OVID, Cumulative Nursing and Allied Health Literature (CINAHL) and ProQuest. The search was limited to articles written in English, as this research will be presented in an English speaking country. A date limit was also applied, with the search limited to articles published between 2010 and 2018. This limit was used in order to provide the most recent findings related to MAEs.

The initial keyword search terms were: medication administration; medication errors; patient safety; Kuwaiti nurses; report incident; nursing barriers; medication errors reporting. This initial search resulted in a limited number of articles on MAEs. Therefore, the search was expanded to use alternative keywords, namely: medication errors; nursing medication errors; nursing reporting; nursing errors; patient safety. The expanded search yielded 4839 articles.

As a result of the lack of primary articles and literature on the barriers to reporting MAEs specifically in Kuwait, the retrieved articles included research in general hospital settings, general wards and mental healthcare facilities in different countries. Polit and Beck (2017) suggest that the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) flow chart is a useful tool for examining whether a study includes adequate data. Thus, the PRISMA 2009 flow chart was applied to the results of the initial searches to screen for eligibility. The initial 4839 articles were first screened for duplicates. Following the removal of duplicates, 3373 articles

remained. A title and abstract search resulted in the exclusion of 3333 articles. These were excluded for a variety of reasons, including not being related specifically to MAEs or not being related specifically to nurses. Many articles, for example, related to doctors or other health workers. Seventy articles remained, of which 50 were subsequently excluded, mainly due to not being primary research articles. In an effort to obtain more research material, the article search was further expanded to include Google Scholar, from which an additional five articles were found. A total of 20 relevant articles were chosen for further review. Figure 2.1 (below) outlines the process used in this literature review.

Due to the relative lack of articles directly examining MAEs, articles were included in this literature review despite possible deficiencies in areas such as: study methodology, study sample size, other limitations, and main findings. For example, studies with small sample sizes and studies with potential biases were included. Ethical approval was also a concern in certain studies and therefore needed to be checked, as it was a potential area of weaknesses. To classify the literature and consider the barriers faced by nurses when reporting MAEs, a keyword, objective analysis was conducted on each article.

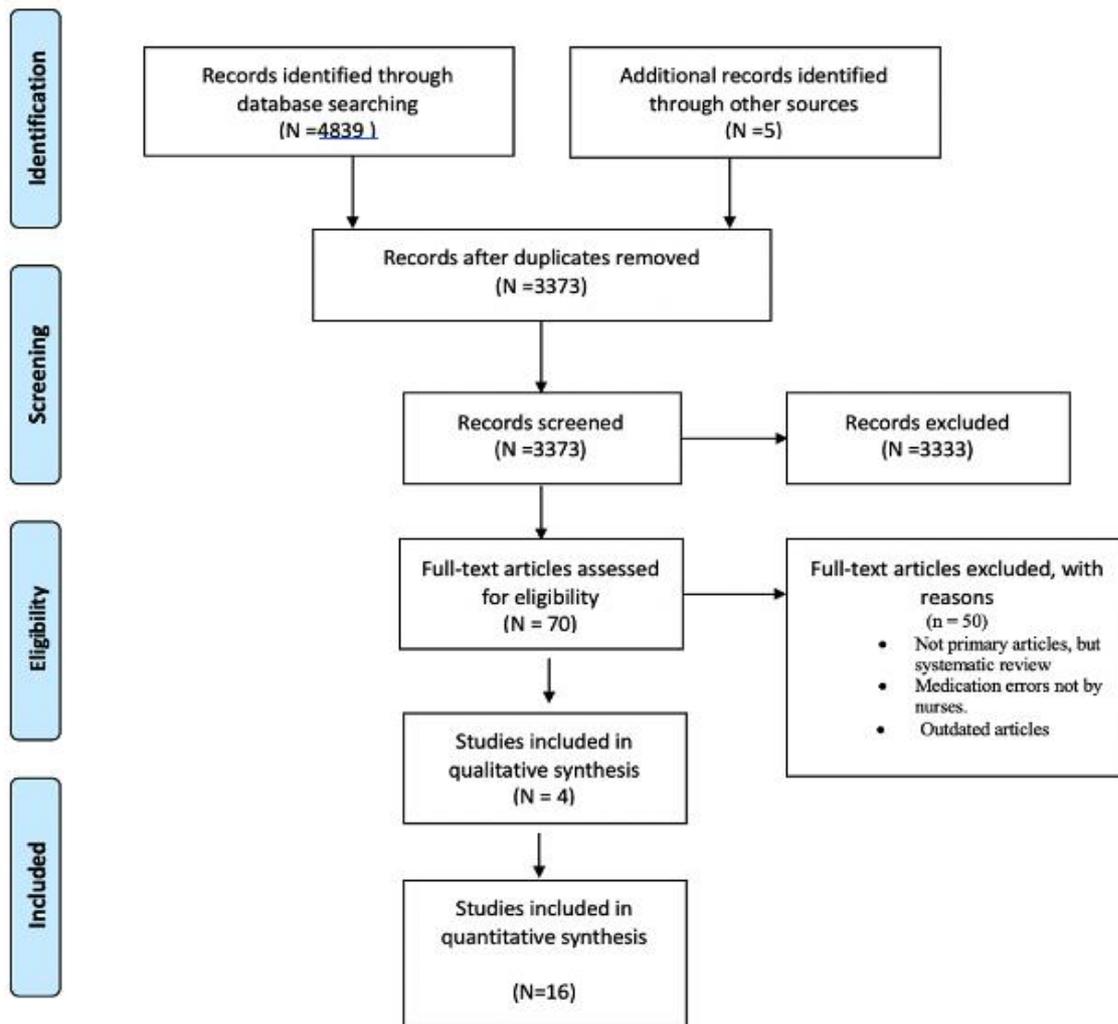


Figure 2.1 The PRISMA process search strategy

## 2.3 Presentation of key findings

The PRISMA review process outlined in Figure 2.1 identified 20 articles related to barriers to reporting MAEs among nurses. Findings from the subsequent analysis of these articles can be broadly categorised into three key themes:

1. Significance of MAEs and general barriers to reporting.
2. Professional and training related barriers.
3. Personal and administrative factors.

Each of these themes is discussed in order of prevalence within the literature and in further detail below.

## **2.3.1 Significance of MAEs and general barriers to reporting**

### **2.3.1.1 Significance of MAEs**

There is a consensus in the literature that MAEs is one of the most challenging issues in the healthcare system. For nurses, reporting MAEs is an important act in ensuring patient safety and a high quality of care (Hammoudi et al., 2018; Hajibabae et al., 2014). From a nursing standard as well as a professional perspective, nurses have a duty to ensure patient safety when medication is administered (Yung et al., 2016). Consequently, it is essential to enhance patient safety by promoting a safe culture for nurses in the workplace, and to support nurses both in identifying and reporting MAEs (Soydemir et al., 2017). Leaving MAEs unreported may affect patient safety and decrease the quality of health care in general. The inadequate reporting of MAEs as a result of problems related to reporting of MAEs was not identified (Samsiah et al., 2016). However, it is acknowledged that obtaining sufficient information on error reports can help to promote strategies for minimising errors in the future (Yung et al., 2016).

### **2.3.1.2 General barriers**

Mostafaei et al. (2014) conducted a study in Iran to identify challenges in the MAE reporting process; the findings showed that such reporting consumes a significant portion of nurses' time during their daily duty, which affects their other nursing care tasks. In addition, Samsiah et al. (2016) state that the process of documenting MAEs is time consuming and complex, and this can lead to errors. As a result, MAEs still occur in several hospital settings, despite the presence of reporting systems, due to nurse workloads. Haw et al. (2014) investigated the barriers in reporting near misses and medication errors encountered by mental health nurses in a UK setting. The findings revealed factors such as lack of knowledge, fear of being punished and the burden of workload to be significant contributors to the under-reporting of MAEs. The researchers also found that a lack of reporting of MAEs was linked with nurses' attitudes towards reporting them, with some nurses tending to excuse errors rather than report them (Haw et al., 2104). Similarly, Rutledge et al. (2018) found that nurses working in a mental health setting assumed that reporting was not required if the error did not harm the patient.

Three studies indicated that reporting of MAEs only occurred when errors were considered a risk to patient safety (Alduais et al., 2014; Hajibabae et al., 2014; Yung et al., 2016). A Turkish study conducted by Soydemir et al. (2017) revealed nurses' attitudes towards the readiness to report MAEs at a training and research hospital in Turkey. The potential barriers related to under-reporting of MAEs were identified as follows: lack of knowledge of what constitutes a MAE, and fear of being punished by the administration (Tabatabaee et al., 2014).

### **2.3.1.3 Fear of punishment and work culture**

Fear of punishment and negative work cultures emerged as key factors across the literature in relation to the under-reporting of MAEs. A Taiwanese study conducted by Yung et al. (2016) found

that 67% of nurses agreed on the importance of reporting MAEs. However, the nurses' attitudes to reporting errors were related to the severity of the errors. It was also found to be influenced by the fear of being blamed by other nurses and administrators. Similar findings were reported by Murthy (2014), in a study conducted among Indian nurses. It was reported that the fear of punishment and a negative work culture were the most common reasons for nurses not to report MAEs. Furthermore, Samsiah et al. (2016) revealed that overall work culture represents a serious contributing factor in the under-reporting of MAEs in a Malaysian healthcare setting. In this study, 69% of nurses feared being punished if they submitted a MAE report to nursing administration.

It is well recognised that reducing this sense of fear is beneficial to health care provision. Soydemir et al. (2017) state that providing a supportive culture for nurses in the workplace will encourage and promote the reporting rate of MAEs. Rutledge et al. (2018) state that organisational support for nurses has the potential to improve MAE reporting. Specifically, establishing a collaborative environment between administrators and nurses will minimise the potential for fear of punishment; as a result, nurses will feel secure in reporting MAEs (Rutledge et al., 2018).

### **2.3.2 Professional and training-related barriers**

#### ***2.3.2.1 Limited knowledge of MAE reporting processes***

The acknowledgment of MAEs involves the understanding of nurses' perceptions and attitudes towards those errors. Svitlica et al. (2017) conducted a study in Serbia to identify contributing factors to MAEs. The study revealed that Serbian nurses are unfamiliar with medication administration policy. In the study, it was found that the Serbian nurses had limited knowledge of the MAEs policy due to a lack of educational resources (Svitlica et al., 2017). Poorolajal et al. (2015) suggest that increasing nurses' knowledge of the types and causes of MAEs can contribute to enhanced recognition of errors. Lee (2017) also argues that it is essential to increase knowledge on the nature of MAEs to promote more accurate reporting throughout the healthcare system.

#### ***2.3.2.2 Training programs***

Samsiah et al. (2016) identified the two most common types of MAE reported by nurses: errors related to medication dosage and errors related to the drug prescribed. In addition, this study identified that recognising the seriousness of MAEs was one of the factors affecting the nature of reporting. More thorough training in relation to these areas may therefore both reduce the rate of MAEs whilst also increasing the rate of accurate reporting. The importance of training and education in relation to MAEs is further highlighted in various other studies. For example, Holmström et al. (2015) found that failure to identify the category of medication error was usually due to insufficient training and education of nurses. In addition, two studies have recognised that it is essential to increase knowledge on the nature of MAEs to promote reporting in the healthcare system (Bayazidi et al., 2012; Sajjad et al., 2017).

### **2.3.3 Personal and administrative factors**

#### **2.3.3.1 Administrative support**

Eight articles in the literature review stated that the inadequate reporting of MAEs was associated with administrative and personal factors. Mostafaei et al. (2014) acknowledge that administrative factors represent a significant reason for nurses in Iran to hesitate in reporting MAEs. Similarly, Hammoudi et al. (2018) found that error reporting systems in Saudi Arabia were insufficiently developed and largely ignored by nursing administrators, and that this was a possible cause of under-reporting by nurses. In addition, Alduais et al. (2014) state that administrative work, in conjunction with fear, are the greatest potential barriers for nurses in reporting MAEs in Saudi Arabia. The lack of administrative support in relation to error reporting can also be observed in other countries. For example, You et al. (2015) suggest that the lack of support from nursing administrators is a key barrier to nurses reporting MAEs. In addition to lack of administrative support, the professional and administrative pressures caused by workload and lack of sufficient staffing may contribute to the failure to report MAEs (Sajjad et al., 2017).

#### **2.3.3.2 Personal attributes**

Five studies found that personal skills are closely associated with MAE under-reporting by nurses. According to Hammoudi et al. (2018), miscommunication between doctors and nurses is one of the leading causes of MAEs, as well as subsequent under-reporting. The study suggests that poor communication channels frequently lead to MAEs, and that this is largely due to over one third of medication orders being issued verbally rather than in writing. Another significant factor associated with MAEs is a lack of knowledge regarding medication policy and procedure. Samsiah et al. (2016) state that ineffective communication channels between nurses and administrators regarding MAEs have contributed to a decrease in reporting such errors, as nurses have not received feedback on previously reported MAEs and as a result, are not encouraged to report further MAEs. Yung et al. (2016) show that keeping medical staff updated on MAE reporting procedures and policies can have a positive effect on rates of reporting. Furthermore, maintaining a system with a positive atmosphere free from the fear of being punished in the workplace will increase nurses' intentions to write MAE reports (Poorolajal et al., 2015).

## **2.4 Discussion**

The current literature review has shown that there is a significant lack of research into MAEs and barriers to reporting them in a Kuwaiti context. This literature review discussed the barriers to reporting MAEs, the specific nature of the errors, and factors influencing MAE reporting for nurses (Alduais et al., 2014). Previous research has investigated the barriers to adequate MAE reporting, and the results highlight that the most prominent issues are fear of punishment, lack of knowledge related to MAEs, and complicated error reporting systems (Lee et al., 2016; Svitlica et al., 2017; Tabatabaee et al., 2014). The findings of the review illustrate that barriers to reporting MAEs affect

patients' safety and quality of care in the health system (Hammoudi et al., 2018; Soydemir et al., 2017; Mostafaei et al., 2014; Yung et al., 2016). Other studies have emphasised the importance of encouraging nurses to report MAEs, as this promotes patient safety and enhances the quality of care (Samsiah et al., 2016; Lee, 2017).

The lack of MAE literature pertaining to Kuwait highlights the need to further examine the issue of reporting MAEs in the Kuwaiti context. In Kuwait, there is a lack of MAE data, as these data have not been measured previously. Therefore, it is vital to establish a proper assessment for measuring MAE reporting by nurses in Kuwait. Moreover, this lack of data represents a safety problem and a significant area of weakness in the healthcare system (Yung et al., 2016). There are many barriers contributing to the under-reporting of MAEs internationally; nevertheless, it is crucial to assess the barriers that prevent nurses from reporting MAEs in the Kuwaiti context, as this can influence the quality of health care in that country. There was a lack of research on the subject in terms of the nursing administration development regards the reporting rate of MAEs by nurses. As a result, it was not investigated with obstacles, and therefore the Kuwaiti context lacks nursing research on the topic above.

Four studies have examined the types of errors involved in MAEs, and the results have shown that inadequate medication knowledge is one issue resulting in greater errors (Hammoudi et al., 2018; Svitlica et al., 2017; Samsiah et al., 2016; Lee et al., 2016). Nevertheless, there continues to be a lack of sufficient evidence on the barriers that nurses face in reporting MAEs; consequently, the present research is needed to understand and further explore these barriers. There were some similarities between the Kuwait findings and other studies, such as in Saudi Arabia and similar context such as lack of nursing support, multicultural nursing workforce, and fear of being punished if the nurse reports MAEs, are consistent.

## **2.5 Summary**

This literature review focused on examining and critiquing primary research articles on MAE reporting among nurses. Although several key issues were identified and examined, there remains a lack of literature specifically focused on the factors that obstruct MAE reporting among nurses. This review also discussed the key themes relevant to MAE reporting among nurses, including general barriers to reporting, professional and training issues, and personal and administrative factors. The main barriers to reporting MAEs were: the complicated process of reporting MAEs across many countries; lack of knowledge about errors; fear of being punished; and the lack of training in reporting MAEs. Administrative actions towards nurses, such as focusing on nurses' errors, instead of identifying problems within the system, were also associated with nurses not reporting MAEs. In addition, personal attributes of nurses were identified, such as communication

skills between nurses and other health care providers. The findings of the literature highlight the significant issues related to MAE reporting among nurses.

There is a clear need to conduct research into this issue in the Kuwaiti context, as this represents a significant gap in the current literature. Given the abovementioned importance and clinical significance of MAEs, coupled with the lack of previous research into MAE reporting in Kuwait, there is clear justification for further study in this area. It is expected that such research will contribute to a clearer understanding of MAEs in Kuwait, and eventually assist practitioners and policymakers to develop a comprehensive approach to reducing such errors and mitigating their negative effects on patients. Chapter 3 will explain the methodology, method, design and research setting of the research.

# CHAPTER 3: METHODS

## 3.1 Introduction

This chapter will outline the methodological approach and research methods utilised in the current study. The overall purpose of the research is to explore the phenomenon of MAEs (medication administration errors) in the Kuwaiti healthcare system. The study also aims to identify the key barriers faced by nurses in reporting MAEs.

## 3.2 Statement of problem and related research question/hypothesis

Currently, no studies have been conducted into the barriers nurses face when reporting MAEs in general hospitals in Kuwait. It is thus vital to conduct such a study in Kuwait given the multicultural nature of the nursing workforce and the cost of MAEs to the healthcare system. The first research question is: “How accurately are MAEs reported in Kuwait by RNs?” It is hypothesised that there is a relationship between the reporting of MAEs in Kuwait and the perceived barriers faced by RNs (registered nurses) related to such reporting.

## 3.3 Paradigm identification

Objectivism is the central paradigm utilised in this study, coupled with the theoretical perspective of positivism. The positivist approach is closely associated with quantitative research, which essentially aims to study, estimate and quantify the relationships between variables (Schneider & Whitehead, 2016; Rasinger, 2013). Parry (p40. 2012) identifies that “societal institutions [such as hospitals] are constructed in a manner with reinforces needs as determined by the dominant group”. Thus, the role and ability of the RNs to report MAE is in some way social constructed with the hospital. For example, the variables measuring the impact of the dominant group, such as, ‘I would be viewed as incompetent by colleagues’, is thus captured by the variable, that identifies a behaviour or response to reporting MAEs. The use of the Likert scale allows the respondent to moderate how the variable impacts. Asserting that these behaviours and responses impact on the RN ability to report the MAE then these behaviours result from their social place and are thus socially constructed. The relationships between variables identify the social stratification and hierarchies within a social system (Parry, 2012). It is useful here as it describes the social hierarchy within the workplace as expressed in the responses to the survey and the comments.

## 3.4 Methodological approach

The current study utilises a quantitative methodological approach. Quantitative methods quantify variables into numerical figures (Polit & Beck, 2017). A quantitative approach was selected for the following reasons: it uses a scientific and empirical method; it employs statistical techniques; and it uses correlational analysis to examine the data and the association between the variables in the

study. (Schneider & Whitehead, 2016). A qualitative method is less suited to the current research question for several reasons. Firstly, the purpose of the qualitative approach is to examine a phenomenon in specific detail, often attempting to understand the subjective experience of participants. Consequently, qualitative methods often employ very small samples, which reduces the generalisability of any findings. Finally, qualitative methods use interviews or focus groups to gather data; these methods are not deemed suitable for the current study, as the research topic is sensitive in nature and participants may not be willing to divulge information in such a format (Rahman, 2017; Rasinger, 2013). For the current study, it was concluded that a quantitative approach would be able to provide anonymity and confidentiality for the participants compared to a qualitative study, and would therefore be more conducive to data collection (Dobrovlny & Fuentes, 2008; Polit & Beck, 2017; Schneider & Whitehead, 2016).

### **3.5 Research design**

This study used a similar tool to the Saudi Arabian Nursing Medication Errors Study (Almutary & Lewis, 2012). A correlational analysis was used to examine the relationship between perceived barriers and reporting of MAEs among RNs in general hospitals in Kuwait. Structured surveys are widely used methods of gathering data in quantitative research, as these allow for the collection of data directly from participants, can collect data from a large number of participants, are easy to use, quick to complete and can capture a wide range of information, which can then be generalised (Schneider & Whitehead, 2016; Queirós et al., 2017).

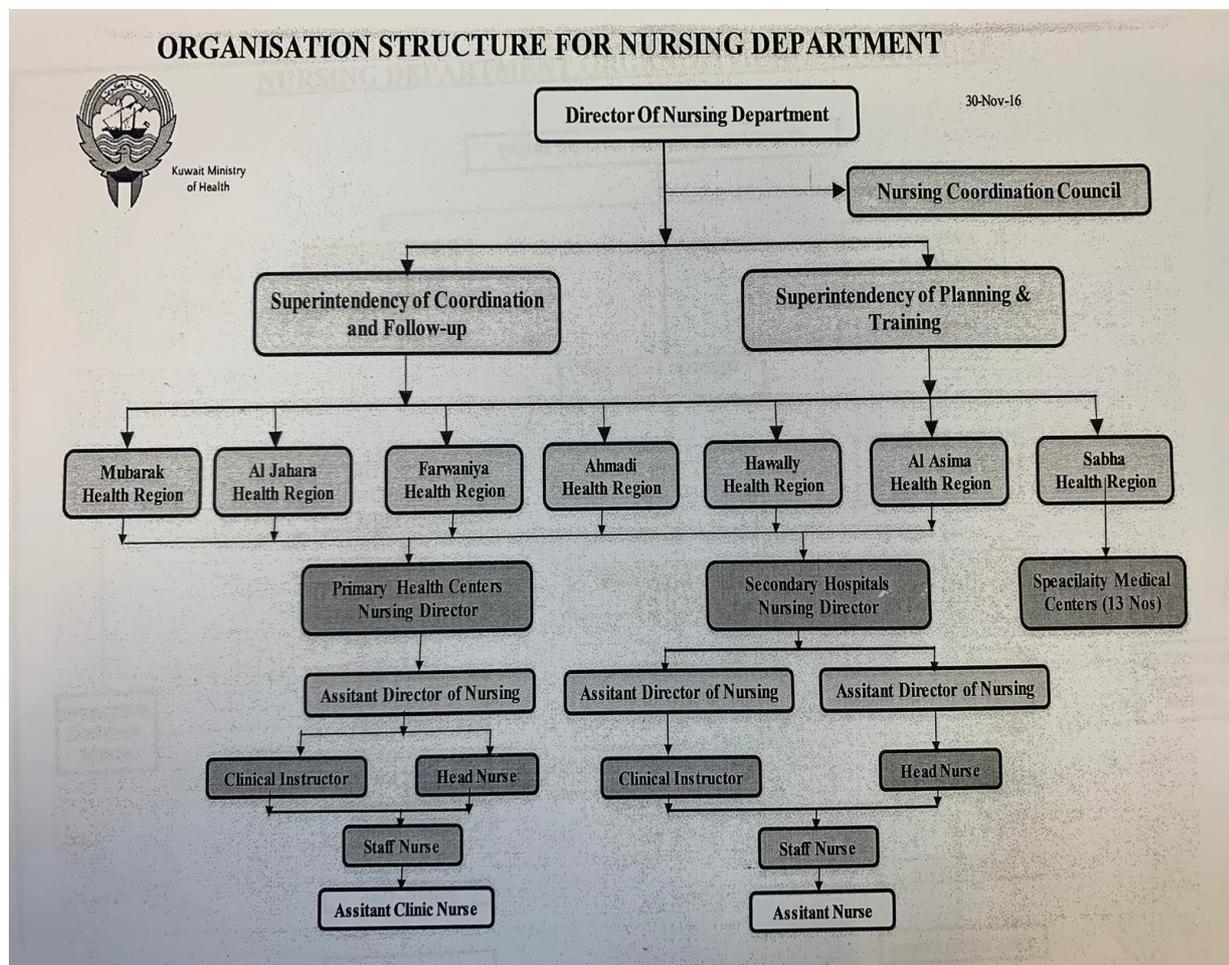
The current study made use of the MAE reporting scale tools developed by Wakefield, Uden-Holman and Wakefield (2005) and validated by Almutary & Lewis (2012) to examine the tendency of RNs to report MAEs. The structured survey was divided into three parts: demographic data; RNs' perceptions regarding the reporting of MAEs; and potential barriers to reporting MAEs (Almutary & Lewis, 2012). The survey design was used to investigate Kuwaiti Nursing Medication Administration Errors (KNMAEs) in two general hospitals in Kuwait.

### **3.6 Setting**

The current study was conducted in two general hospitals in Kuwait. The study was conducted in acute units such as surgical and medical wards. This avoided the potential identification of participants from small, distinctive units.

There are 28,054 nurses of various nationalities working in hospitals in Kuwait, both general and private, under the MOH (Ministry of Health) (Central Statistical Bureau, 2018). The MOH provides free health care for all citizens and private health insurance for non-citizens in the healthcare system (Younis et al., 2015). General hospitals specialise in providing medical services for Kuwaiti citizens and residents in medical, surgical, maternity and paediatric departments (Ahmed et al.,

2019; Younis et al., 2015). All of the hospitals allocated to participate in this study were public and are supervised by the MOH. Ethics approval was provided by the Kuwaiti MOH (2019/1131). Approval from the Flinders University Social and Behavioural Research Ethics Committee (SBREC) was also obtained (number 8357). Figure 1.1 (below) provides a general overview of the organisational structure of the Nursing Department within the MOH in Kuwait.



**Figure 1.1 An overview of the structure of Kuwaiti nursing management**

(Kuwaiti Ministry of Health, 2016)

Figure 1.1 depicts the organisational structure for nursing departments in Kuwait and describes the health regions that this research will target. The current study recruited RNs from hospitals in the Sabha and Al Asima health regions.

### 3.7 Sampling

Convenience sampling was used to gather the sample. Convenience sampling is appropriate, especially as the data collection tool was a self-report survey that depended on participants actively completing a survey (Etikan, Musa & Alkassim, 2016).

The sample for the current study was drawn from 2399 nurses employed at two hospitals were targeted from the total of 28,054 nurses currently employed in Kuwait. Inclusion and exclusion

criteria tools are an effective way of recruiting appropriate participants for research (Schneider & Whitehead, 2016; Polit & Beck, 2017), and were used to select the participants for this research.

The inclusion criteria for this study were:

1. Registered nurses (RNs) only working in tertiary hospitals.
2. Nurses capable of reading and speaking English.
3. Nurses with at least two years of work experience in Kuwait. This was to increase the likelihood that the nurses will have encountered MAEs.

The exclusion criteria included assistant nurses who were excluded as they do not speak English and would have found the survey difficult to answer and they are often employed in outpatient clinics rather than acute settings. The exclusion criteria for this study were:

1. Assistant nurses
2. Nurses with fewer than two years' work experience.
3. Private hospital nurses.
4. Nurses who cannot read English.

The sample size was sufficiently powered to detect relationships between the variables, and was calculated based on the number of participating hospitals in Kuwait and the length of the survey.

### **3.8 Data collection**

Data collection is process that is generally undertaken in many stages (Watson, 2015). Firstly, ethical approval was obtained from both the Flinders University Social and Behavioural Research Ethics Committee (SBREC) (number 8357), and then from the Kuwaiti Research Ethics Committee (number 3289) at the MOH. These can be found in Appendices A and B respectively. Secondly, permission was obtained from the Directors of the two general hospitals in Kuwait from which participants were to be recruited. After this permission was obtained, flyers were posted in the staff common areas throughout the hospitals.

The flyers were placed in a prominent position, such as the nurses station or common room, and provided a link to the research title and a link to the survey. The survey took approximately 15 minutes for RNs to complete. The survey was separated into three parts, representing the study aims (Almutary & Lewis, 2012). The survey was designed to provide data suitable for the correlational study design (Polit & Beck, 2017). This enabled an exploration of factors that impacted on the accuracy of RNs reporting MAEs, as well as the barriers to reporting. The survey was modified to meet the study purpose based in the Kuwaiti context, as the need to develop the most suitable instrument for the context is vital in research (Schneider & Whitehead, 2016; Polit & Beck, 2017).

The researcher arranged to supply all participants with an information package, including study information, poster and survey link in the place permitted by the hospital administration in the

common places. The researcher held a short meeting with RNs concerning the research and how to navigate the survey link, to ensure the RNs were comfortable with the process of using the links, their anonymity, the use of the data and the confidentiality of the data. Weekly checks were made by the researcher on the hospital common areas to ensure that the flyers remained in place for the duration of the recruitment period.

The survey was built using Qualtrics, a secure web-based application for managing databases. Prior to completing the survey, participants were presented with an electronic consent form that outlined the conditions of the study, including participant confidentiality. Survey completion time was estimated as being between 10 and 15 minutes. A complete copy of the survey can be found in Appendix D.

### **3.9 Data analysis**

Data was examined using correlational analysis. The data analysis process followed the three-part structure of the survey.

Demographic data of the participants such as, gender, age, ethnicity and education were collected in the first part. Given that Kuwait has a relatively large number of different nationalities working as RNs, it was useful to collect data on background and ethnicity (Almutary & Lewis, 2012) to determine if this impacted on the reporting of MAEs. This section of the survey also collected data on the level of education of RNs, as it may be useful to examine the relationship between educational background and reporting of MAEs.

The second part of the survey was designed to evaluate the RNs' points of view in terms of reporting MAEs, as well as their attitudes to the MAE reporting process. This section aimed to assess RNs' concerns regarding MAEs, and to identify knowledge of MAEs in a Kuwaiti context. The third part of the survey examined RNs' opinions of the importance of reporting MAEs and examined the psychological factors that might make RNs hesitate to report MAEs.

This research sought to identify the causes of the under-reporting of MAEs by RNs in Kuwaiti general hospitals. It was therefore important to select an analytical framework that is able to identify and analyse the relationship between variables causative factors of non-reporting of MAEs (Watson, 2015). The data analysis will use the Statistical Package for the Social Sciences (SPSS) version 25.0. Also, inferential analyses were used to explore the demographic data.

#### **3.9.1 Correlational analysis**

Correlation is a measure of association between different variables. Correlation coefficients are inferential statistics that explore the relationship between two or more variables. Different types of correlation coefficients are used as statistical tests of inference based on the nature of the

variables (Gogtay & Thatte, 2017). Spearman's correlation is used when quantitative variables exhibit a non-normal distribution, or the variables are ordinal, or for discontinuous measurement variables. In contrast, Pearson's correlation coefficient is used when the variables are normally distributed and are continuous (Schober, Boer & Schwarte, 2018). Spearman's correlation is non-parametric, while Pearson's correlation coefficient is parametric. Correlation expresses the direction of the relationship between the two variables; however, it cannot predict the importance of one variable from the magnitude of the correlated variable. Correlation coefficients are primarily used in experimental research to rule out or rule in the possibility of considering an independent variable in the regression models that might or might not be significantly correlated with the dependent variable (Porter, 1999).

Correlation coefficients are expressed by a statistic called "r" (which is also referred to as the product-moment correlation). The value of "r" can range from -1 to +1. The value of  $r = 0$  signifies that there is no correlation between the two variables. Whereas, if the value of "r" falls between 0 to +1, it signifies that there is a positive correlation between the two variables. A positive correlation means that increasing the magnitude of one variable (A) would also increase the magnitude of the other variable (B). These variables are thus identified as positively correlated. Likewise, positive correlation means that decreasing the magnitude of one variable would also decrease the magnitude of the other variable (Armstrong, 2019). In contrast, if the value of "r" falls between -1 to 0, it signifies that there is a negative correlation between the two variables. A negative correlation indicates that increasing the magnitude of one variable (A) would decrease the magnitude of the other variable (B) (Schober et al., 2018).

A correlation should only be considered significant if the p-value of the correlation coefficient is less than the chosen level of statistical significance (which in most cases is 0.05) (Gogtay & Thatte, 2017). The significance of correlation between the two variables is judged from the acceptance or rejection of the null hypothesis (H<sub>0</sub>) or the alternative hypothesis (H<sub>1</sub>), respectively. The H<sub>0</sub> contends that there is no significant correlation between the two variables and any observed correlation could have taken place due to chance. The H<sub>0</sub> is accepted if the p-value of the correlation coefficient (r) is greater than 0.05 (or the pre-decided level of statistical significance). On the contrary, the H<sub>1</sub> contends that there is a significant correlation between the two variables and any observed correlation is unlikely to have occurred assuming that the null hypothesis was true. The H<sub>1</sub> is accepted if the p-value of the correlation coefficient (r) between the two variables is less than 0.05 ( $p < 0.05$ ) (Armstrong, 2019; Schober et al., 2018).

Pearson's correlation coefficient is considered one of the best methods for measuring the association between two variables as it is based on the covariance method of estimating correlation (Mukaka, 2012). Hence, Pearson's correlation coefficient provides information about the magnitude of association and the direction of the association between the two variables. A

Pearson's correlation coefficient that falls between the measure of +0.5 to 1.0 or -0.5 to -1 is considered to be a high degree of correlation. A Pearson's correlation coefficient that falls between the values of +0.3 and +0.49 or -0.3 to -0.49 is considered to be a moderate correlation. A Pearson's correlation coefficient that falls between the alphanumeric values of 0 and +0.29 or 0 to -0.29 is considered to be low degree correlation. Finally, a Pearson's correlation coefficient of 0 signifies that there is no correlation between the two variables (Gogtay & Thatte, 2017). However, Pearson's correlation coefficient could be only estimated if the cases are independent of each other and the variables that are measured bear a linear relationship in a scatterplot (Zhou, Deng, Xia & Fu, 2016). Since the linearity of the scatterplot illustrates the line of best fit, the best parts of the sample can be collected to explain the results or used for further study (Jiang, 2018). This means that it can be an excellent method to use on a large sample size, as it can help to narrow the sample to a better and more compact size to ensure that the test results are accurate. Thus, Pearson's correlation coefficient should only be used when there are minimal outliers.

Once data collection was complete and key findings identified, the data was analysed using different measures. Data was organised using nominal and ordinal scales to describe the demographic survey (Watson, 2015). Inferential statistics were utilised to detect any sampling fluctuation in the results of the survey (Bettany-Saltikov & Whittaker, 2014). Pearson correlations were used to test if a relationship existed between the barriers nurses face and the reporting of MAEs. All findings of the data analysis and results from the online self-report surveys will be stored on Flinders University OneDrive data storage facility for five years from study completion.

### **3.10 Strengths and limitations of study design**

The current study design has many strengths. Firstly, quantitative research in general allows for the relatively quick and straightforward analysis of data, and the findings of quantitative research can be generalised to wider populations (Polit & Beck, 2017). Furthermore, self-report surveys have several strengths as a data collection tool. They allow for the standardised collection of data from a wide range of people at both a relatively low cost for the researchers and a relatively high level of convenience for the participant; they also allow for a degree of anonymity, which is often an important consideration in collecting data. Additionally, the questionnaire has allowed for an initial exploration for the research topic where no previous research has occurred (Polit & Beck, 2017). Therefore, questionnaires were better in this situation (Schneider & Whitehead, 2016; Polit & Beck, 2017; Rahman, 2017). Correlation analysis is also a strong and robust method of data analysis, as it allows for the relatively easy identification of variables and assessment of the relationship between them (Quick & Hall, 2015).

However, it is important to acknowledge the limitations of the current study design. One of the main limitations of the quantitative approach is that it does not directly seek to assess or

understand the personal and subjective experiences of participants in the study (Queirós et al., 2017). In addition, it may be the case that the self-report surveys fail to achieve the target sample size for the study (Rattray & Jones, 2007). The study was conducted in general hospitals, and nurses might find the topic too sensitive to engage in, despite the assurances of anonymity (Schneider & Whitehead, 2016; Polit & Beck, 2017).

### **3.11 Rigour appropriate for approach**

Rigour is defined as a research design's strength in terms of procedural adherence, precision and consistency (Quick & Hall, 2015). Rigour relates to the degree to which the researchers strive to ensure and improve the quality of the research (Heale & Twycross, 2015). The current study is suitably rigorous for several reasons. Firstly, this study will use an existing data collection tool, a survey which has been developed, tested and validated in a Middle Eastern context (Hayfa, 2012). Reliability, a measure of the test score's stability or consistency in answers, has been found to be high ( $\alpha = 0.60$ ) in this survey (Albukhodaah, 2016; Quick & Hall, 2015; Hayfa, 2012).

The validity of all parts of the survey was also tested by the researchers in the Saudi Arabian Nursing Medication Errors Study (Almutary & Lewis, 2012). Validity refers to how well the scores used in a study truly reflect the variables they are intended to measure (Heale & Twycross, 2015). The current study thus shows strong levels of rigour, as demonstrated by the use of data collection methods that have been validated by other researchers (Watson, 2015).

In addition, a pilot test of the data collection tool was conducted on a limited sample to seek feedback on the survey's accessibility.

#### **3.11.1 Pilot test – survey**

A pilot study was conducted on 12 Master of Nursing students in order to seek feedback on the ease of use, acceptability and comprehensibility of the survey. This feedback was used to modify the survey. Specifically, three items (demographics, perception of reporting MAEs, and potential barriers to reporting medication incidents) on the survey were adjusted based on the feedback of the pilot study. The data from the pilot study was discarded and not analysed.

### **3.12 Limitations of chosen methodological approach**

One of the limitations of the quantitative approach is that it requires a large number of participants, which is often challenging for researchers (Polit & Beck, 2017). Another limitation of the positivist research paradigm in general is that it does not provide an in-depth understanding of the social phenomenon in question. Quantitative research cannot explain how social reality is formed or perceived, nor can it explain an individual's behaviour. Lastly, quantitative approaches have been criticised due to the potential limitations of using statistical testing techniques to interpret study findings (Queirós et al., 2017).

### **3.13 Summary**

This research took a quantitative approach to examining the reporting of MAEs by RNs in Kuwait. It utilised an online self-report survey as the primary data collection method, with convenience sampling being used to recruit RNs from general hospitals in Kuwait. A Pearson correlational analysis was used to identify the barriers to RNs reporting MAEs in a Kuwaiti general hospital context. The main strengths of the study design are: provision of anonymity to the participants in order to obtain a large sample; the reasonably low cost and convenience for respondents; the use of rigorous and validated data collection methods; and using a well-established statistical approach for data analysis. The limitations of the current study design include: limitations intrinsic to quantitative approaches in general; specific issues pertaining to self-report surveys; and the possibility that general hospitals in Kuwait may not yield sufficient participants to power the study, due to the sensitive nature of the topic.

# CHAPTER 4: RESULTS

## 4.1 Introduction

This chapter introduces the results and findings of the KNMAE (Kuwait Nursing Medication Administration Error) study. The following research questions are answered:

1. How accurately are MAEs reported in Kuwait by RNs (registered nurses)?
2. Are RNs in Kuwait aware of the importance of MAE reporting?
3. What are the barriers to reporting MAEs in Kuwait?

Data were collected using an online survey, delivered via Qualtrics. The survey link was provided to nursing staff by the flyer posted in the nurse's common room after the approval of Director of Nursing was obtained at each hospital. The survey was composed of three sections (see Appendix D).

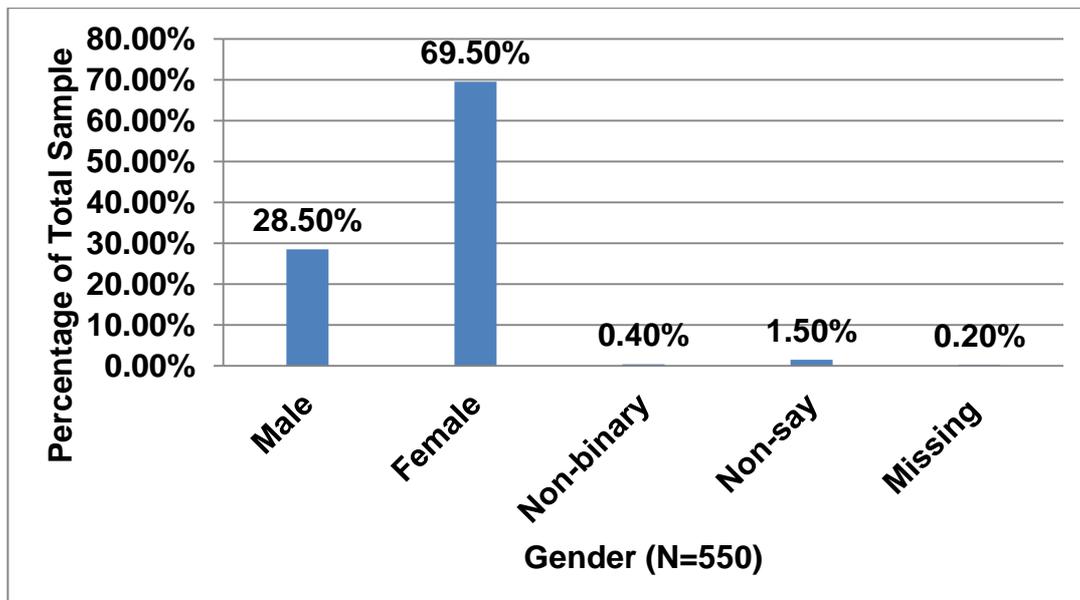
### 4.1.1 Findings

The findings are presented as demographic data, and then an exploration of the relationship between the variables of interest.

## 4.2 Demographics

A Total of 2399 nurses from two selected Kuwait hospital in Kuwait. There were 916 participants from two selected Kuwaiti hospitals who participated in the online survey. Incomplete surveys (366) were those with less than 60% of questions answered, and these were excluded from the study sample. The final study sample consisted of 550 (N = 550 with a response rate of 38.1%). Figures 4.1 to 4.6 (below) provide the demographic characteristics of the participants in the KNMAE study.

Firstly, in Figure 4.1 (below) the gender orientation, as reported by the participants, is shown. The participants were asked to identify as male, female or non-binary; some chose not to answer. This question provided participants with a variety of options.

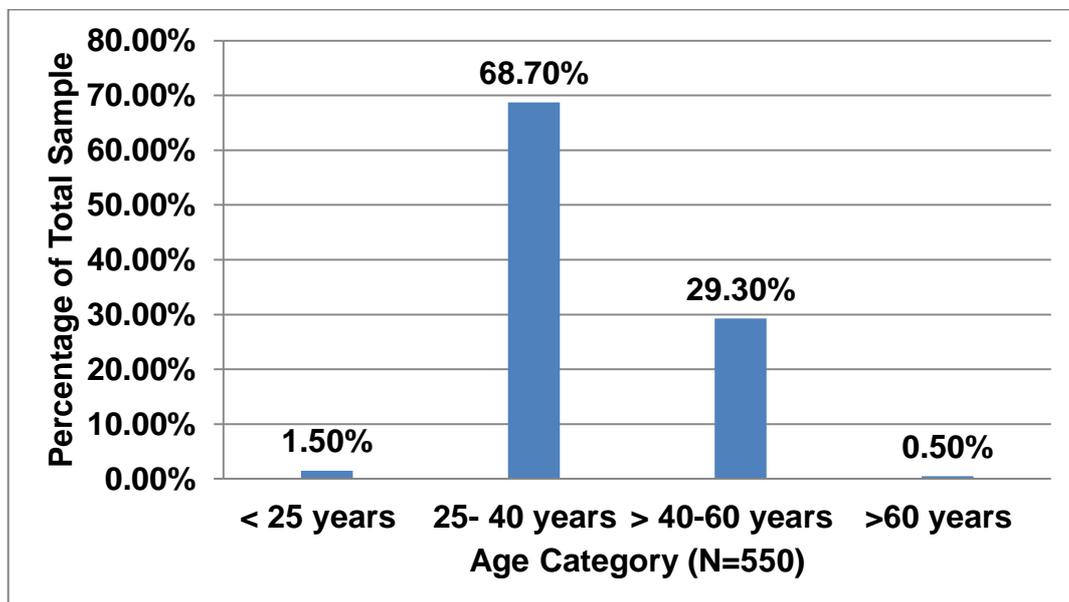


**Figure 4.1 Gender distribution of participants**

Figure 4.1 indicates that most of the respondents (N = 382, 69.5%) were female whereas male nurses constituted 157 of the respondents (28.5%), with non-binary (N = 2, 0.4%), participants 'preferred not to say' (N = 8, 1.5%) and missing (N = 1, 0.2%) making up the remainder. Missing data collected as part of this survey to complete the data analysis process.

. This sample is composed of 550 nurse responses in two general hospitals in Kuwait.

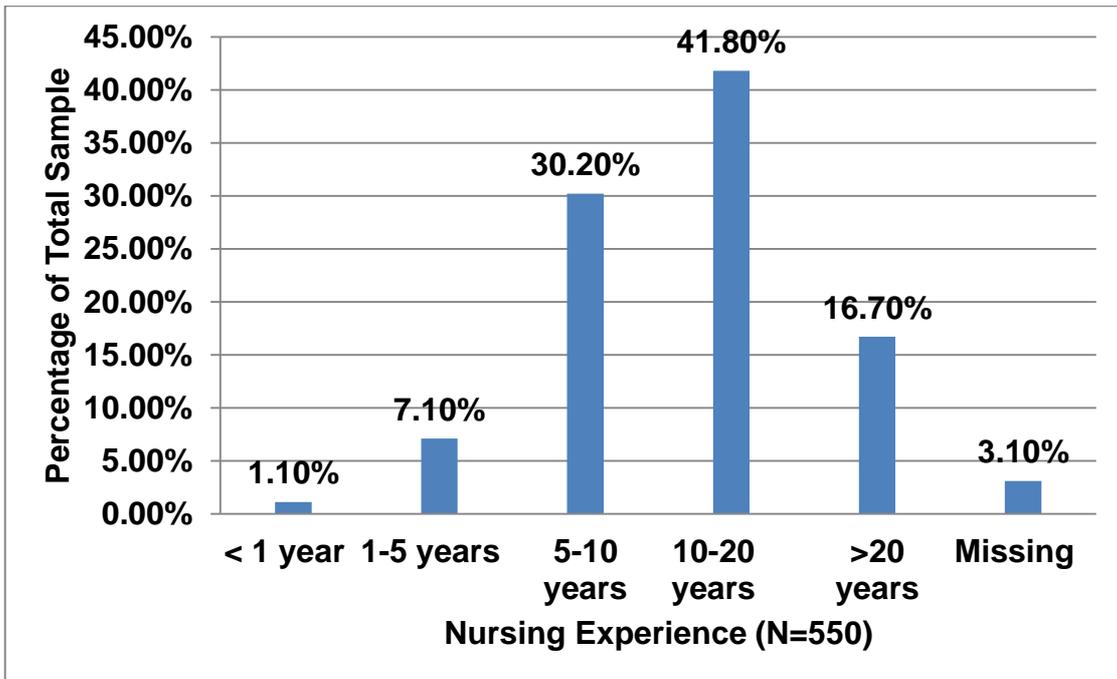
Figure 4.2 (below) presents the age demographic of the participants in the survey.



**Figure 4.2 Age distribution of participants**

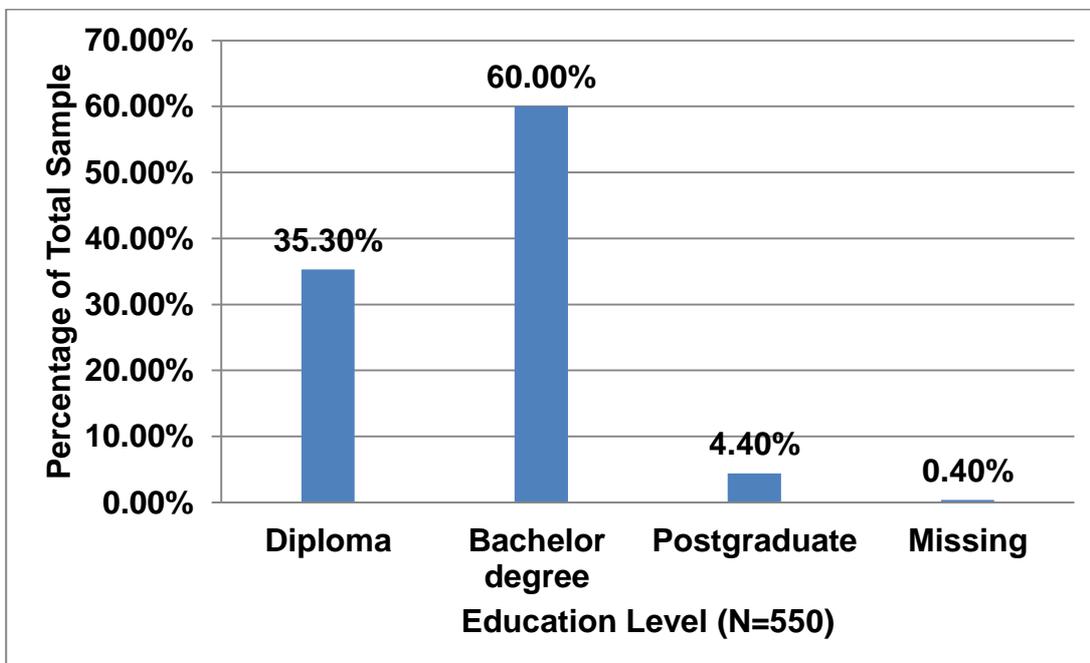
Figure 4.2 highlights that the majority of the RNs responded to this the survey were in the 25 to 40 years age group (N = 378, 68.7%); the next most represented group was 40 to 60 years (N = 161, 29.3%); the least represented age group was over 60 years (N = 3, 0.5%).

The age group data above validates the years of experience shown in Figure 4.3 (below), which presents the years of experience as RNs in the participant sample. Missing data collected as part of this survey to complete the data analysis process.



**Figure 4.3 Years of experience of participants**

Figure 4.3 indicates that the majority of RNs who responded to the survey had between 10 and 20 years' experience as an RN (N = 230, 41.8%). RNs with between 5 and 10 years of experience constituted 30.20% (N = 166), while 92 (16.7%) had greater than 20 years of experience. The proportion of RNs with 5 years of experience or less was 8.2% (N = 45), and there were 17 missing answers (3.1%). Missing data collected were included here as part of this survey to complete the data analysis process.

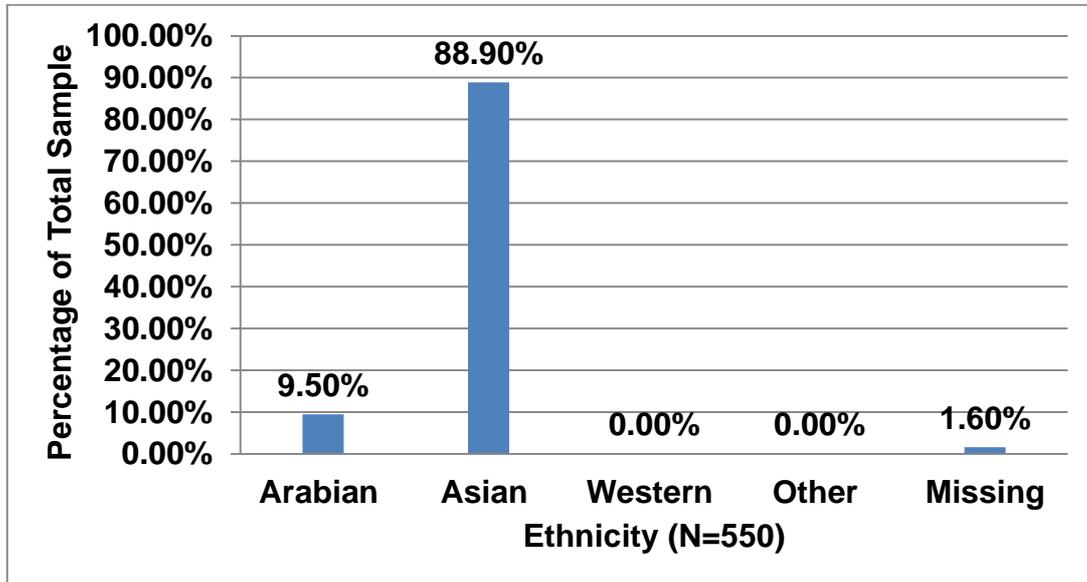


**Figure 4.4 Highest education level of participants**

Figure 4.4 (above) indicates that the majority of the participants (N = 330, 60.0%) had a bachelor degree, and 35.3% of participants (N = 194) had a diploma in nursing. A minority of participants (N = 24, 4.4%) had postgraduate qualifications. However, about 0.4% (N = 2) did not complete the

question regarding education level. Missing data collected were included here as part of this survey to complete the data analysis process.

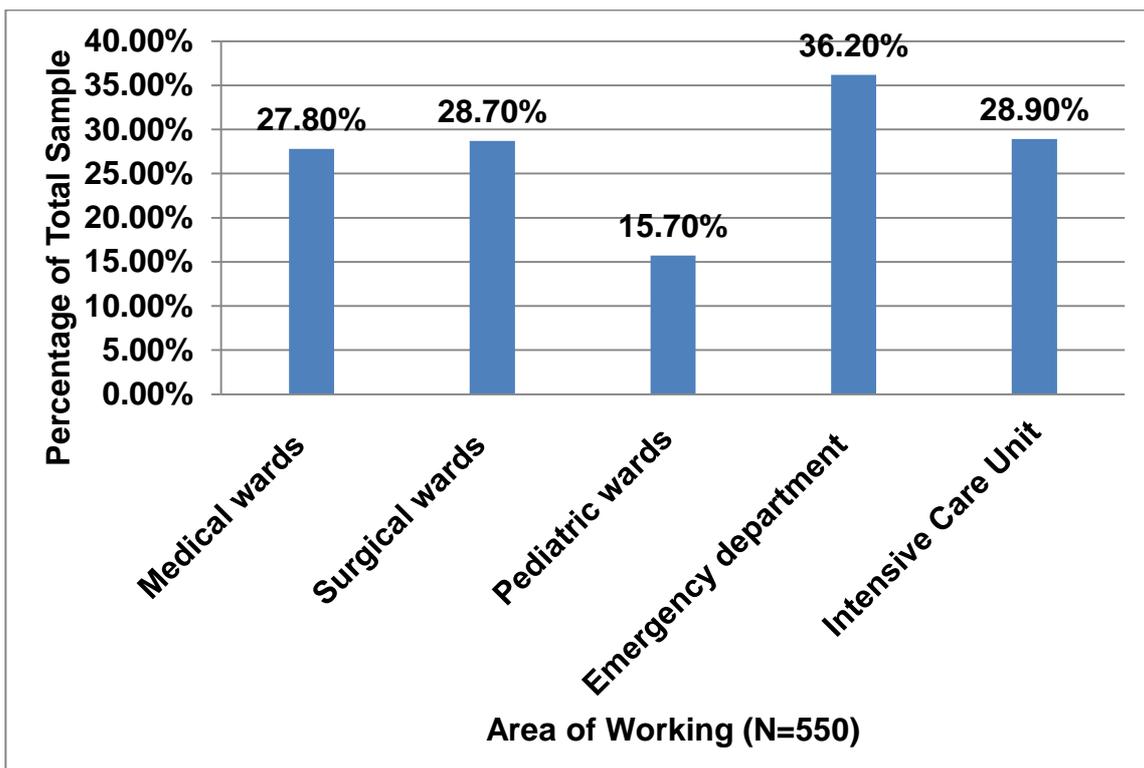
Figure 4.5 (below) present the findings for participants' responses regarding their ethnicity.



**Figure 4.5 Reported ethnicity of participants**

Figure 4.5 indicates that the majority of participants (N = 489, 88.9%) were Asian (from Philippines, Malaysia, and India), while a small number of participants (N = 52, 9.5%) were Arabian (from Saudi Arabia, Egypt and Jordan). There were 9 participants (1.6%) who did not answer the question of ethnicity. There were no participants of Western ethnicity, or of any other nationalities or ethnicities, in the two Kuwaiti hospitals in the study. Missing data collected were included here as part of this survey to complete the data analysis process.

Figure 4.6 (below) present the participants' main areas of work as an RN.



### Figure 4.6 Participants' main area of work

Figure 4.6 indicates that the largest proportion of participants (N = 189, 36.2%) work in emergency departments; 28.9% (N = 151) work in intensive care units; 28.7% (N = 150) work in surgical wards; 27.8% (N = 145) work in medical wards, and 15.7% (N = 82) work in paediatric wards. The data shows that participants had experience in more than one area of the hospital, as the question allowed the participants to choose more than one category.

In summary, these demographic findings are representative of the general nursing population of two selected hospitals Kuwait, where the male nurse workforce represents approximately 35% of the total nursing workforce (Annual Statistical Abstract, 2018).

### 4.3 Research Question 1: How accurately are MAEs reported in Kuwait by RNs?

Table 4.1 (below) presents the findings on participants' responses in relation to making MAEs in general and reporting MAEs in Kuwait (items 7, 8 and 9 of the survey).

**Table 4.1 Responses to Question 1: How accurately are MAEs reported in Kuwait by RNs?**

Participants' responses	Total N (%)
Have you ever made a medication administration error?	
Yes	83 (15.1%)
No	462 (84.0%)
Missing	5 (0.9%)
The hypothetical question: If you made a medication error/s in Kuwaiti hospitals did you report the medication error/s?	
Yes	240 (43.6%)
No	214 (38.9%)
Missing	96 (17.5%)
Do you have any concerns about, or do you feel that you would face any barriers if you were to report a medication error in Kuwait?	
Yes	188 (34.2%)
No	324 (58.9%)
Missing	38 (6.9%)

The purpose of the above question is to assess RNs' reporting of MAEs. In terms of RNs making MAEs in general, the majority of participants (84.0%) reported "No", while only 15.1% of participants responded "Yes". In response to the question of whether RNs reported a MAE in Kuwait, 43.6% of participants responded "Yes", whereas 38.9% of participants responded "No" and 17.5% of participants did not answer that question. In response to the question of the nurses concerns related to MAEs, more than half of the participants (58.9%) reported not having any concerns.

Table 4.2 (below) reports the correlation coefficients between demographic variables and RNs' willingness to report MAEs, based on responses to Question 1 (see Table 4.1 above).

**Table 4.2 Relationship between demographic variables and willingness to report MAEs**

Item	Pearson correlation coefficient (r)	P-value
Gender	0.038	0.379
Age	0.021	0.618
Years of post-graduate nursing experience	-0.027	0.537
Education	-.005	0.909
Ethnicity	0.194	0.000**

\*\* Correlation is significant at the 0.01 level (2-tailed)  $p < 0.01$

Table 4.2 illustrates that only ethnicity was associated with willingness to report MAEs ( $r = 0.194$ ,  $p < 0.01$ ). There is a weak positive correlation between ethnicity and RNs' willingness to report MAEs. There is no significant relationship between RNs' willingness to report MAEs and other demographic variables.

#### 4.3.1 The relationship between RNs' demographic variables and whether RNs report MAEs in Kuwaiti hospitals

When participants were asked about reporting MAEs in Kuwait there were no significant results found. The finding was that a very low number of RNs are making MAEs. This result needs to be viewed with some caution due to the lack of studies into MAEs in Kuwait.

**Table 4.3 The relationship between RNs' demographic variables and whether RNs have any concerns about, or feel that they would face any barriers in, reporting MAEs in Kuwait**

Item	Pearson correlation coefficient (r)	P-value
Gender	0.020	0.657
Age	-0.042	0.340
Years of post-graduate nursing experience	-0.099	0.028**
Education	-.002	0.966
Ethnicity	0.030	0.506

\*\* . Correlation is significant at the 0.01 level (2-tailed).  $p < 0.01$

Table 4.3 (above) illustrates that only one of the demographic variables has a significant relationship with concerns regarding reporting MAEs in Kuwait. The variable "Years of post-graduate nursing experience" is negatively associated with concerns and facing barriers related to reporting MAEs in Kuwait ( $r = -0.099$ ,  $p = 0.028$ ). There is no significant relationship between concerns about reporting MAEs in Kuwait and other demographic variables.

#### 4.3.2 The relationship between RNs' demographic variables and total perception of reporting MAEs

Further analysis was conducted to investigate the relationship between all demographics (gender, age, years of post-graduate nursing experience, education, ethnicity) and response scores of each

of the six of dimensions of RNs' perceptions regarding reporting MAEs. In addition, a total perception of reporting MAE variables was calculated based on the mean response scores of all six of those dimensions.

Overall, there is no significant relationship between total perception of reporting MAEs and any RN's demographic variables.

### 4.3.3 The relationship between RNs' demographic variables and total personal factors of potential barriers to reporting MAEs

Further analysis was conducted to investigate the relationship between all demographics (gender, age, years of post-graduate nursing experience, education, ethnicity) and response scores of each of the five of dimensions RNs' personal factors of potential barriers to reporting MAEs , such as fear of discriminated by co-worker, face repercussion and viewed as incompetent by colleagues at workplace. The total of personal factors of potential barriers to reporting MAEs was calculated.

Table 4.4 (below) illustrates that both gender and ethnicity have a weak, positive significant relationship to personal barriers to reporting medication errors ( $r_1 = 0.122$ ,  $r_2 = 0.182$ ,  $p < 0.01$ ). The findings indicate that RNs' gender and ethnicity were potential factors that influence the reporting of MAEs. Also, the findings showed that women and Asian persons were more likely to report facing barriers to reporting MAEs.

**Table 4.4 The relationship between demographic variables and total personal factors of potential barriers to reporting MAEs**

Item	Pearson correlation coefficient ( r )	P-value
Gender	0.122	0.004**
Age	0.057	0.181
Years of post-graduate nursing experience	0.010	0.819
Education	-.044	0.307
Ethnicity	0.182	0.000**

\*\* . Correlation is significant at the 0.01 level (2-tailed).

### 4.3.6 The relationship between RNs' demographic variables and total administration factors of potential barriers to reporting MAEs

Further correlational analysis was conducted to examine any potential relationship between all demographics (gender, age, years of post-graduate nursing experience, education, ethnicity) and administration factors, such as receive negative feedback from nursing administration and nursing administration believe that on medication errors are a measure of the quality of nursing care at hospital. The total of administration factors of potential barriers to reporting MAEs was calculated in SPSS, and represents the mean result of all responses to the administration factors. The results are presented in Table 4.5 (below).

**Table 4.5 The relationship between demographic variables and total administration factors affecting MAE reporting**

Item	Pearson correlation coefficient (r)	P-value
Gender	0.115	0.007**
Age	0.002	0.955
Years of post-graduate nursing experience	-0.013	0.765
Education	-.016	0.702
Ethnicity	0.154	0.000**

\*\* . Correlation is significant at the 0.01 level (2-tailed).

Table 4.5 illustrates that both gender and ethnicity have a weak, positive significant relationship to total administration factors of barriers to reporting MAEs ( $r_1 = 0.115$ ,  $r_2 = 0.154$ ,  $p < 0.01$ ). This research is online study and participants were (69.5%) female and (88.9%) Asian. It can be determined that women and Asian nurses experienced more significant barriers in the study. There may be various reason for this result such as cultural, for example, not being confident to speak out, or not being Kuwait citizens but this requires further investigation.

#### **4.3.7 The relationship between RNs' demographic variables and total reporting process factors**

Additional correlational analysis was conducted to examine any potential relationship between all demographics and reporting process factors, such as incident report from are too complicated and incident reporting wastes too much time. The total reporting process factors of potential barriers to reporting MAEs was calculated using the mean response scores of each of the three dimensions of the reporting process factors section of the survey (see Appendix D). The results are presented in Table 4.6 (below).

**Table 4.6 Results of relationship between demographic variables and total reporting process factors**

Item	Pearson correlation coefficient (r)	P-value
Gender	0.017	0.693
Age	0.098	0.022
Years of post-graduate nursing experience	0.094	0.031
Education	-.049	0.253
Ethnicity	0.282	0.000**

\*\* . Correlation is significant at the 0.01 level (2-tailed).

Table 4.6 illustrates that three of the demographic variables have a weak positive significant relationship to administration barriers to reporting MAEs: age, RNs' experience and ethnicity ( $r_1 = 0.098$ ,  $r_2 = 0.094$ ,  $r_3 = 0.282$ ). The results above showed that the reporting rate of MAEs influenced by age groups, level of experience and ethnicity as reporting process factors in Kuwait.

## 4.4 Research Question 2: Are RNs in Kuwait aware of the importance of MAE reporting?

This question can be answered through testing the relationship among RNs' perceptions to reporting MAEs and relevant variables as follows.

### 4.4.1 The relationship between RNs' perceptions to report MAEs dimension and Have RNs ever made MAEs?

Table 4.7 (below) takes each RN's perception individually and explores its relationship to MAEs.  
**Table 4.7 The relationship between RNs' perceptions of reporting MAEs and Have RNs ever made MAEs?**

No.	Item	Pearson correlation coefficient ( r )	P-value
1	When a medication error occurs I think it, should be reported to the department	-0.119	0.005**
2	I believe that reporting medication errors is a worthy use of my time	0.044	0.310
3	I will report a medication error even if it does not harm the patient	-0.249	0.000**
4	I will report a medication error even if it is not possible to improve the patient's health status subsequent to the medication error	-0.103	0.017
5	I am willing to report a medication error only when similar errors have occurred previously in the department	0.044	0.313
6	I would report a medication error even if I was not involved in it (for example another nurse on your shift made a medication error and you know they did not report)	-0.136	0.002**
<b>Total Dimension</b>		-0.123	0.004**

\*\* . Correlation is significant at the 0.01 level (2-tailed).

Table 4.7 indicates a weak, negative significant relationship between MAE reporting and the total dimension of RNs' perceptions of MAE reporting ( $r = -0.123$ ,  $p < 0.01$ ). These findings indicate that there is a significant negative correlation between MAE reporting and "I will report a medication error even if it does not harm the patient" ( $r = -0.249$ ,  $p < 0.01$ ) which is the highest among RNs' perception items of the willingness of reporting MAEs. Total perception was calculated using the mean responses to questions 1, 2, 3, 4, 5 and 6 in the survey. The results indicated that RNs would report MAEs if RNs committed the errors. Furthermore, the results also showed that RNs' perceptions of reporting MAEs were adequate in Kuwait regarding the importance of reporting MAEs when occurring in hospitals.

#### 4.4.2 The relationship between RNs' perceptions to reporting MAEs dimension and Did RNs report the MAEs in Kuwaiti hospitals?

Overall, there was one weak positive significant relationship between RNs reporting MAEs in Kuwaiti hospitals and "When a medication error occurs, I think it should be reported to the department" ( $r = 0.097, p < 0.01$ ). The weak relationship is of concern as it does not identify a strong commitment to report MAE. Additional qualitative research may provide an in-depth understanding of this process.

#### 4.4.3 The relationship between RNs' perceptions of reporting MAEs dimension and Do you have any concerns about, or do you feel that you would face any barriers if you were to report a MAE in Kuwait?

Table 4.8 (below) presents an analysis of the relationship between RNs' perceptions of reporting MAEs and their perceptions of barriers or concerns about such reporting.

**Table 4.8 The relationship between RNs' perceptions of reporting MAEs dimension and Do you have any concerns about, or do you feel that you would face any barriers if you were to report an MAE in Kuwait?**

No.	Item	Pearson correlation coefficient (r)	P-value
1	When a medication error occurs, I think it should be reported to the department	-0.035	0.437
2	I believe that reporting medication errors is a worthy use of my time	0.030	0.499
3	I will report a medication error even if it does not harm the patient	-0.155	0.000**
4	I will report a medication error even if it is not possible to improve the patient's health status subsequent to the medication error	-0.113	0.011
5	I am willing to report a medication error only when similar errors have occurred previously in the department	0.038	0.390
6	I would report a medication error even if I was not involved in it (for example another nurse on your shift made a medication error and you know they did not report)	-0.125	0.005**
<b>Total Dimension</b>		-0.091	0.040

\*\* . Correlation is significant at the 0.01 level (2-tailed).

Table 4.8 illustrates that there is a weak negative significant relationship between reporting MAEs in Kuwait and "I will report a medication error even if it does not harm the patient" ( $r = -0.155, p < 0.01$ ). Overall, there is a weak negative significant relationship between reporting MAEs in Kuwait and the total dimension of RNs' perceptions of reporting MAEs, according to its value and negative sign ( $r = -0.091, p = 0.04$ ). Total perception was calculated using the mean responses to questions 1, 2, 3, 4, 5 and 6 in the survey.

## 4.5 Research Question 3: What are the barriers for reporting MAEs in Kuwait?

This question can be answered through testing the relationship among potential barriers to reporting medication errors (personal factors, administration factors, reporting processes factors) and relevant variables as follows.

### 4.5.1 The relationship between the personal factor and Have RNs ever made MAEs?

Table 4.9 (below) provides an analysis of the relationship between personal factors and whether or not RNs have ever made MAEs.

**Table 4.9 The relationship between the personal factor and Have RNs ever made MAEs?**

No.	Item	Pearson correlation coefficient (r)	P-value
1	I would be viewed as incompetent by colleagues	0.163	0.000**
2	I would be discriminated against by co-workers	0.191	0.000**
3	Other employees in the hospital would become aware of my medication error	0.083	0.054
4	It is likely I would face repercussions	0.139	0.001**
5	Patient or family's may develop a negative attitude towards me with a loss of confidence in my abilities	0.143	0.001**
<b>Total Dimension</b>		0.198	0.000**

\*\* . Correlation is significant at the 0.01 level (2-tailed)

Table 4.9 illustrates that there is a weak, positive significant relationship between reporting MAEs in Kuwait and the total dimension of RNs' personal factors to reporting MAEs ( $r = 0.198$ ,  $p < 0.01$ ). As shown, there were four personal factors that displayed a significant relationship. These included: being viewed as incompetent by colleagues ( $r = 0.163$ ,  $p < 0.00$ ); being discriminated against by co-workers ( $r = 0.191$ ,  $p < 0.00$ ); I would face repercussions ( $r = 0.139$ ,  $p < 0.01$ ); and patient or family may develop a negative attitude towards me, with a loss of confidence in my abilities ( $r = 0.143$ ,  $p < 0.01$ ). These results suggest there are potential barriers to reporting MAE. The total dimension of RNs' personal factors was calculated using the mean responses to questions 1, 2, 3, 4 and 5 in the survey.

#### 4.5.2 The relationship between the personal factors of potential barriers to reporting MAEs and Did RNs report the MAEs in Kuwaiti hospitals?

There is no significant relationship between RNs reporting MAEs in Kuwaiti hospitals and other items of the personal factors of reported MAEs. Overall, there is no significant relationship between RNs reporting MAEs in Kuwait and the total dimension of the personal factors of potential barriers.

#### 4.5.3 The relationship between the personal factors of potential barriers to reporting MAEs and Do you have any concerns about, or do you feel that you would face any barriers if you were to report MAEs in Kuwait?

Table 4.10 (below) provides an analysis of the relationship between personal factors of potential barriers and whether RNs have ever made MAEs.

**Table 4.10 The relationship between the personal factors of potential barriers to reporting MAEs and Do you have any concerns about, or do you feel that you would face any barriers if you were to report MAEs in Kuwait?**

No.	Item	Pearson correlation coefficient (r)	P-value
1	I would be viewed as incompetent by colleagues	0.221	0.000**
2	I would be discriminated against by co-workers	0.266	0.000**
3	Other employees in the hospital would become aware of my medication error	0.144	0.001**
4	It is likely I would face repercussions	0.368	0.000**
5	Patient or family may develop a negative attitude towards me with a loss of confidence in my abilities	0.336	0.000**
<b>Total Dimension</b>		0.371	0.000**

\*\* . Correlation is significant at the 0.01 level (2-tailed).

Table 4.10 illustrates that there is a weak, positive significant relationship between RNs having concerns in reporting MAEs in Kuwait and the total dimension of personal factors of potential barriers ( $r = 0.371$ ,  $p < 0.01$ ). As shown in Table 4.10, all personal factors had significant relationships. These included: being viewed as incompetent by colleagues ( $r = 0.221$ ,  $p < 0.01$ ); being discriminated against by co-workers ( $r = 0.266$ ,  $p < 0.01$ ); other employees in the hospital would become aware of my medication error ( $r = 0.144$ ,  $p = 0.000$ ); I would face repercussions ( $r = 0.368$ ,  $p < 0.01$ ); and patient or family may develop a negative attitude towards me, with a loss of confidence in my abilities ( $r = 0.336$ ,  $p < 0.01$ ). The total dimension of RNs' personal factors was calculated using the mean responses to questions 1, 2, 3, 4 and 5 in the survey.

#### 4.5.4 The relationship between the administration factors of potential barriers to reporting MAEs and Have RNs ever made MAEs?

Table 4.11 (below) provides information on the relationship between administration factors in reporting MAEs and whether RNs have ever made any MAEs. This information is important in determining whether administration factors have a significant relationship with RNs making MAEs.

**Table 4.11 The relationship between the administration factors of potential barriers to reporting MAEs and Have RNs ever made MAEs?**

No.	Item	Pearson correlation coefficient ( r )	P-value
1	I would receive negative feedback from nursing administration if I were to report a medication error/s	0.109	0.012**
2	Nursing administration believe that on medication errors are a measure of the quality of nursing care provided	0.086	0.048**
3	Nursing administration would focus on the individual nurse as the primary cause of the medication error rather than examining the system as a potential cause or contributor to the medication error	0.080	0.068
4	The response towards staff by nursing administration would not match the severity of the medication error	0.124	0.005**
Total Dimension		0.136	0.002**

\*\* . Correlation is significant at the 0.01 level (2-tailed).

Table 4.11 illustrates that there is a weak, positive significant relationship between RNs ever reporting MAEs in Kuwait and the total dimension of the administration factors of potential barriers ( $r = 0.136$ ,  $p = 0.002$ ). As shown in Table 4.11, there were three administration factors that had significant relationships. These included: receiving negative feedback from nursing administration ( $r = 0.109$ ,  $p = 0.012$ ); MAEs are a measure of the quality of nursing care provided ( $r = 0.086$ ,  $p = 0.048$ ); and the response towards staff by nursing administration would not match the severity of the medication error ( $r = 0.124$ ,  $p = 0.005$ ). The total dimension of RNs' administration factors was calculated using the mean responses to questions 1, 2, 3 and 4 in the survey.

#### 4.5.5 The relationship between the administration factors of potential barriers to reporting MAEs and Did RNs report the MAEs in Kuwaiti hospitals?

There is no significant relationship between RNs reporting MAEs in Kuwaiti hospitals and other items of the administration factors. Overall, there is no significant relationship between RNs reporting MAEs in Kuwait and the total dimension of the administration factors of potential barriers.

#### 4.5.6 The relationship between the administration factors and Do you have any concerns about, or do you feel that you would face any barriers if you were to report an MAE in Kuwait?

Table 4.12 (below) outlines the relationship between nursing administration factors and whether RNs have any concerns or face any perceived barriers in reporting MAEs.

**Table 4.12 The relationship between the administration factors and Do you have any concerns about, or do you feel that you would face any barriers if you were to report an MAE in Kuwait?**

No.	Item	Pearson correlation coefficient (r)	P-value
1	I would receive negative feedback from nursing administration if I were to report a medication error/s	0.292	0.000**
2	Nursing administration believe that on medication errors are a measure of the quality of nursing care provided	0.216	0.000**
3	Nursing administration would focus on the individual nurse as the primary cause of the medication error rather than examining the system as a potential cause or contributor to the medication error	0.165	0.000**
4	The response towards staff by nursing administration would not match the severity of the medication error	0.115	0.012
<b>Total Dimension</b>		0.277	0.000**

\*\* . Correlation is significant at the 0.01 level (2-tailed)

Table 4.12 illustrates that there is a weak, positive significant relationship between RNs having concerns about reporting MAEs in Kuwait and the total dimension of the administration factors of potential barriers ( $r = 0.277$ ,  $p < 0.01$ ). As shown in Table 4.12, there were four administration factors that had positive significant relationships. These included: receiving negative feedback from nursing administration ( $r = 0.292$ ,  $p < 0.01$ ); MAEs are a measure of the quality of nursing care provided ( $r = 0.216$ ,  $p = 0.000$ ); nursing administration would focus on the individual nurse as the primary cause of the MAEs ( $r = 0.165$ ,  $p < 0.01$ ); and the response towards staff by nursing administration would not match the severity of the MAE ( $r = 0.115$ ,  $p = 0.012$ ). The total dimension of RNs' administration factors was calculated using the mean responses to questions 1, 2, 3 and 4 in the survey.

#### 4.5.7 The relationship between the reporting processes factors of potential barriers to reporting MAEs and Have RNs ever made any MAEs?

Table 4.13 (below) provides an analysis of the relationship between the reporting processes and factors in terms of reporting MAEs and whether RNs have ever made a MAE.

**Table 4.13 The relationship between the reporting processes factors of potential barriers to reporting MAEs and Have RNs ever made any MAEs?**

No.	Item	Pearson correlation coefficient (r)	P-value
1	Incident report forms are too complicated	0.144	0.001**
2	Incident reporting wastes too much time	0.157	0.000**
3	I would not know how to report a medication error if it occurred	0.060	0.163
<b>Total Dimension</b>		0.164	0.00**

\*\* . Correlation is significant at the 0.01 level (2-tailed).

Table 4.13 illustrates that there is a weak, positive significant relationship between RNs having concerns about reporting MAEs in Kuwait and the total dimension of the reporting process of MAEs ( $r = 0.164$ ,  $p = 0.000$ ). Overall, the reporting processes of MAEs yielded one insignificant relationship between RNs' MAE knowledge and reporting processes ( $r = 0.060$ ,  $p = 0.163$ ). The total dimension of the reporting process of MAEs was calculated using the mean responses to questions 1, 2 and 3 in the survey.

#### **4.5.8 The relationship between the reporting processes and Did RNs report the MAEs in Kuwaiti hospitals?**

There is no significant relationship between RNs reporting MAEs in Kuwaiti hospitals and other items of the reporting processes related to MAEs. Overall, there is no significant relationship between RNs reporting MAEs in Kuwait and the total dimension of the reporting processes.

#### **4.5.9 The relationship between the reporting processes and Do you have any concerns about or do you feel that you would face any barriers if you were to report an MAE in Kuwait?**

Table 4.14 (below) provides an analysis of the relationship between reporting processes and concerns about facing barriers if RNs were to report MAEs.

**Table 4.14 The relationship between the reporting processes and Do you have any concerns about, or do you feel that you would face any barriers if you were to report an MAE in Kuwait?**

No.	Item	Pearson correlation coefficient (r)	P-value
1	Incident report forms are too complicated	0.160	0.000**
2	Incident reporting wastes too much time	0.193	0.000**
3	I would not know how to report a medication error if it occurred	0.079	0.076
<b>Total Dimension</b>		0.201	0.000**

\*\* . Correlation is significant at the 0.01 level (2-tailed)

Table 4.14 illustrates that there is a weak, positive significant relationship between RNs having concerns about reporting MAEs in Kuwait and the total dimension of the reporting process of MAEs ( $r = 0.201$ ,  $p = 0.000$ ). The total dimension of the reporting process of MAEs was calculated using the mean responses to questions 1, 2 and 3 in the survey.

#### 4.6 Other findings in the study

The participants were asked “Do you have any other reason that may influence your decision to report a medication error?”. The findings showed that the majority of participants said “No” (95.5%). Further information and descriptions are outlined below:

- “If I will report, the administration will punish me”
- Severe punishment without due process
- Poor mentality of senior nurses
- Rude behaviour of senior staff
- Reporting MAEs may affect annual evaluation
- It affects the person’s positive attitude
- It also affects inter-personal relationship towards colleagues
- Did not report errors because of formalities of error documents and further investigation
- Miscommunication, some rules of policy, job descriptions for all staff medical field.

The participants expressed their concerns above in responses to an open-ended question, which demonstrates that fear of the nursing administration is one obstacle to MAEs being reported by RNs. Also, the findings of the above question suggest some administrative barriers to reporting MAEs.

## 4.7 Summary

This chapter includes all the results and analyses of the data and variables collected from the KNMAE study. The study used the Pearson correlation coefficient to assess the strength of relationships between variables. The results showed that there is a weak positive relationship between the demographic variables of gender, age, education, clinical experiences and ethnicity, and RNs' concerns about reporting MAEs. Also, there is a weak positive significant relationship between demographics and RNs' barriers to reporting MAEs in Kuwait. There are also weak positive significant relationships between demographics and personal and administration factors and reporting processes.

The results show that 84% of participants reported not making MAEs in general. Also, the result indicates that RNs who participated in the survey from the selected two hospitals in Kuwait were willing to report MAEs if they occur. In addition, the study indicates that 58% of participants reported not facing barriers when reporting MAEs in Kuwait, but that 34.2% reported that they would face barriers.

The Pearson correlation coefficient was used to explore the relationship between RNs' perceptions, personal factors, administration factors, reporting processes factors and RNs' concerns about reporting MAEs, and barriers to reporting MAEs in Kuwait. There is a weak negative association between RNs' perceptions and RNs' concerns about reporting MAEs and RNs' barriers to reporting MAEs in Kuwait. There is a weak positive correlation between personal and administration factors and RNs' concerns about reporting MAEs and RNs' barriers to reporting MAEs in Kuwait. Moreover, there is weak positive correlation between reporting processes factors and RNs' concerns about reporting MAEs and RNs' barriers to reporting MAEs in Kuwait. The following chapter will discuss these results in more detail, and in the context of current literature.

# CHAPTER 5: DISCUSSION

## 5.1. Introduction

This chapter will discuss the current study's findings in relation to previous literature regarding MAEs (medication administration errors). The current research explores RNs' (registered nurses) willingness to report MAEs and RNs' barriers to reporting MAEs in Kuwait. The discussion is divided into three parts: the relationship between RNs' demographics and barriers to reporting MAEs in Kuwait; RNs' perceptions of MAEs; and RNs' readiness to report MAEs. The chapter also presents possible recommendations for ways to increase the reporting of MAEs among nurses.

## 5.2 Discussion of findings

This study was conducted to explore and understand the barriers to reporting MAEs in Kuwait. The first research question related to the accuracy of MAE reporting in Kuwaiti general hospitals. The second research question aimed to assess whether RNs in Kuwait were aware of the importance of MAE reporting. The third and final research question aimed to identify the perceived barriers to RNs reporting MAEs in Kuwait. In order to address these research questions, a number of correlational analyses were conducted, and the findings are discussed below.

## 5.3 RNs' demographics and reporting MAEs

The findings of this study show that RNs' work experience had a weak negative significant relationship with reporting MAEs in Kuwait ( $r = -0.099$ ,  $p = 0.028$ ). This indicates that RNs' experience could influence their opinion of reporting MAEs. In a study conducted in India, Murthy (2014) reported a significant relationship between RNs' work experience and RNs' opinions about reporting MAEs in hospitals. Furthermore, a Saudi Arabian study found a similar significant relationship between RNs' levels of experience and reporting MAEs (Alduais et al., 2014). These findings suggest that RNs with more clinical experience are more likely to report MAEs, and this is reflected in the current study's results.

The current study found that the majority of participants reported being of Asian ethnicity (88.9%). In addition, there was a weak positive relationship between ethnicity and RNs' willingness to report MAEs in Kuwait ( $r = 0.194$ ,  $p = 0.000$ ). This finding is in contrast to earlier findings in Middle Eastern hospitals, which reported no significant relationships between ethnicity and reporting of MAEs (Alduais et al., 2014). This could be accounted for by the fact that Kuwait has a proportionately large number of expatriate nurses, whereas the Alduais et al. (2014) study was based in Saudi Arabia, which has a higher proportion of domestic nurses (Alboliteeh, Magarey & Wiechula, 2017). In addition, Iranian studies have found no significant relationships at all between RNs' demographics and their reporting of MAEs (Mostafaei et al., 2014; Bahadori et al. 2013), but

this may be due to similar disparities in their domestic and international nursing workforces. Another study in Saudi Arabia (Almutary & Lewis, 2012) found a positive relationship between education level and the reporting of MAEs, but this was not replicated in the current study.

The current findings show that there is a significant relationship between reporting process factors and the demographic variables of age, clinical experience, and ethnicity. The findings indicate that age, clinical experience and ethnicity could influence the RNs' reporting of MAEs. The positive significant relationship between ethnicity and reporting processes among RNs ( $r = 0.282$ ,  $p = 0.000$ ) may be related to a higher number of expatriate RNs at hospitals in Kuwait, and an associated lack of knowledge of Kuwaiti reporting systems. Furthermore, the hospital provides training programs about reporting medication administration errors for nurses to improve staff knowledge in medication errors reporting, such as in-service education session and regular training on reporting medication errors.

#### **5.4 RNs' perceptions of reporting MAEs**

The findings of the study indicate that there may be obstacles that prevent RNs from reporting MAEs in Kuwait. The current study found that 84% of participants have not made MAEs in general, and that 43.6% participants would report MAEs in Kuwait if such an error was made. Furthermore, 58.9% of participants reported that they would not face barriers if they were to report an MAE in Kuwait. These findings are broadly supported in the literature. A study in Saudi Arabia (Almutary & Lewis, 2012) revealed that nurses had no concerns about reporting MAEs. Another study in Taiwan (Yung et al., 2016) identified nurses' positive attitude towards reporting MAEs, if reporting the errors would enhance further reporting among nurses.

Participants in the current study were asked if they had made any MAEs in Kuwait and the percentage of RNs who did not answer is considered low. There may be, therefore, some factors that would prevent nurses from conceding that they had made errors. These reasons could be fear of a negative reaction from administration as well as fear of distrust from colleagues. Further, the reasons could be due to the fact that so many of the RNs in the study were expatriate, and so may lack sufficient information and knowledge about reporting MAEs. According to Alduais et al. (2014), a "punitive culture" can contribute to a decrease in the reporting of MAEs by nurses. The study conducted in Taiwan suggested that encouraging nurses and minimising fear are vital aspects for increasing the reporting rate (Lee et al., 2016). Another study conducted in Iran by Poorolajal et al., (2015) state that educating RNs on the nature and cause of MAEs can lead to increases in reporting.

## 5.5 Potential barriers to reporting MAEs

The potential barriers to reporting MAEs included personal factors, administration factors and reporting processes. The findings of the KNMAE (Kuwait Nursing Medication Administration Error) study show that there is a significant relationship between whether RNs made any MAEs and RNs' personal factors and administration factors. Also, there is negative correlation between whether RNs perceive any barriers to reporting MAEs in Kuwait, and positive correlation personal and administration factors.

### 5.5.1 Personal factors

The current study identified several personal factors that might influence the reporting of MAEs. Significant barriers were identified as follows: I would face repercussions ( $r = 0.368$ ,  $p < 0.01$ ); patient or family may develop a negative attitude towards me, with a loss of confidence in my abilities ( $r = 0.336$ ,  $p < 0.01$ ); and I would be discriminated against by co-workers ( $r = 0.266$ ,  $p < 0.01$ ). Fear of punishment or negative impacts on reputation are common themes in the broader literature, and have been found to influence the reporting of MAEs across cultures (Rutledge et al., 2018; Soydemir et al., 2017).

Notably, the current study found a significant relationship between reporting MAEs and fear of patients developing a negative attitude towards the nurse. In the Kuwaiti healthcare context, most expatriate nurses are on contract with the MOH, and if a patient complained about a nurse that would potentially have serious consequences for that nurse's annual evaluation, not to mention the nurse's self-esteem, the fear of job dismissed from the ministry of health as punishment for committing medication errors if the errors led to death, and the ability to not continue to work in a hospital in Kuwait. Similar findings can be seen in a study conducted in South Korea. Lee (2017) states that nurses in hospitals displayed a fear of reporting MAEs due to the negative consequences that they may encounter with patients. Additionally, a study conducted in Saudi Arabia (Alduais et al., 2014) identified one of the potential barriers that prevent RNs from reporting MAEs was fear of being blamed by patients and practitioners.

The third significant personal factor identified in the current study was a fear of being discriminated against by colleagues, in the event that an RN reported an MAE. A study conducted in Malaysia (Samsiah et al., 2016) identified that nurses had concerns regarding their co-workers and colleagues when nurses reported MAEs, which contributed to an unreliable reporting rate of MAEs. Similar findings have also been found in Saudi Arabian hospitals (Almutary & Lewis, 2010).

## **5.5.2 Administration factors**

The current study found a weak relationship between administration factors and whether RNs have made MAEs in general. However, the study showed no significant relationship between RNs reporting MAEs and other items of the administration factors of reported MAEs.

Nevertheless, there were 96 participants (17.5%) who did not answer the question pertaining to the reporting of MAEs if they had been made. A significant relationship between administration factors and whether the RNs would face barriers to reporting MAEs was found. Barriers included: receiving negative feedback from nursing administration ( $r = 0.292, p < 0.01$ ); the nursing administration's belief that medication errors are a measure of the quality of nursing care provided ( $r = 0.216, p < 0.01$ ); and nursing administration focusing on the individual nurse as the primary cause of the MAE rather than examining the system ( $r = 0.165, p < 0.01$ ).

### **5.5.2.1 Fear of negative feedback from nursing administration**

Receiving negative feedback from nursing administration was the most significant of the correlations described above. This finding indicates that RNs in Kuwait are fearful of receiving negative feedback from nursing administrators when they report MAEs. In a study conducted in the United Kingdom, RNs felt that they would face disciplinary action from nursing administration if they reported MAEs, and that this contributed to a stressful work culture (Haw et al., 2014). Furthermore, Iranian nurses have reported being afraid to report MAEs because nursing administrators would blame the nurse or issue some form of punishment (Tabatabaee et al., 2014). Thus, the findings of the current study regarding the impact of administration factors on reporting MAEs appear to be well supported. A telling response to the survey's open-ended question reveals this fear succinctly: "If I will report [an MAE], the administration will punish me."

### **5.5.2.2 MAEs as a reflection of nursing care quality**

The second most significant finding relating to administration factors was: "Nursing administration believe that medication errors are a measure of the quality of nursing care provided". This is reflective of a general belief among RNs that MAEs receive a disproportionate amount of attention from nursing administration. A recent study in Serbia supports this view, and suggests that lack of standard work culture places undue emphasis on errors, and leads to a fear of reporting errors by RNs (Svitlica et al., 2017). Similar findings have been reporting in the United States, where one of nurses' primary concerns is that errors are seen as a reflection of the overall competence of the nurse (Rutledge et al., 2018). Another study (Hammoudi et al., 2018) in Saudi Arabia suggests that hospital administrators' responses to MAEs contribute to a decrease in the reporting rate of MAEs. This is consistent with the results reported in the current study.

### **5.5.2.3 Nurses as the cause of MAEs**

The third most significant finding related to administration factors was that nursing administration would focus on the individual nurse as the primary cause of the MAE. Various studies have found similar responses from nurses. In Saudi Arabia, nurses reported that one of the key obstacles to reporting MAEs was that the administrative response tended to blame the individual nurse (Hammoudi et al., 2018). In Turkey, a study conducted by Soydemir et al. (2017) found that nursing administrators focus on the individual nurse's work performance whenever an MAE is reported, and that this contributes to a lower reporting rate. In Iran Bayazidi et al. (2012) found that Iranian nurses display a fear of blame and individualised punishment from the nursing administration if errors are reported.

### **5.5.3 Reporting process factors**

The current study found a weak relationship between reporting process factors and whether RNs have made MAEs ( $r = 0.164$ ,  $p = 0.000$ ). A weak relationship was also found between reporting process factors and whether RNs face barriers to reporting MAEs in Kuwaiti hospitals ( $r = 0.201$ ,  $p = 0.000$ ).

One of the barriers identified was "incident reporting wastes too much time". Other studies have found comparable sentiments expressed by nurses. For example, Rutledge et al. (2018) report that nurses in the United States believe that reporting MAEs is a waste of time, and that the process is too long. Interestingly, this suggests that a shorter and quicker reporting process for MAEs might increase reporting rates. Studies in both Saudi Arabia and Iran suggest that nurses find MAE reporting processes to be far too time-consuming, and that they detract from the busy daily working lives of RNs (Hammoudi et al., 2018; Poorolajal et al., 2015).

The second reporting process factor identified by participants was "incident report forms are too complicated". This is supported by Lee et al. (2016), who found that Taiwanese nurses found the MAE reporting processes too complex to complete accurately. A study (Bahadori et al., 2013) in Iran suggests that nurses may not have a clear understanding of what constitutes an MAE, which influences the reporting of such. The same study recommends establishing a clear, simple reporting system for MAEs, as well as educational sessions for nurses, in order to increase the rate of reporting.

### **5.6 Practical implications and recommendations**

In recent years there has been growing interest in the increase of MAE reports across the healthcare industry. MAEs can affect patient safety and have a profound impact on the overall quality of health care provided by a hospital (Hammoudi et al., 2018). The current study identified several key factors that may influence the reporting of MAEs in the Kuwaiti context.

Personal factors that influence the reporting of MAEs include fear of negative consequences from colleagues and patients, as well as concerns about lasting damage to the reputation of the nurses. Clinical education may be beneficial to alleviate some of these factors. Educating nursing managers on the importance of encouragement rather than punishment may help to increase the rate of MAE reporting. Furthermore, educating nurses on the significance of reporting the MAEs would have a beneficial impact on the quality of health care in hospitals, and boost patient safety. Fear of blame could be alleviated by developing a fear-free working culture. This is especially relevant in Kuwait, where the majority of nurses are expatriates, and may therefore lack an appropriate cultural understanding of relevant working practices.

Hospital administration factors were also found to be significantly related to the reporting of MAEs. Participants stated that poor feedback and focusing on the individual as the main cause of MAEs, rather than systemic issues, were key barriers to reporting MAEs. To address this issue, nursing administrators should focus on providing more positive feedback to nurses when reporting MAEs, rather than apportioning blame. To elaborate, nursing administration should provide rapid feedback to nurses' error reports, along with suggestions on how to improve the reports and how to prevent the errors from reoccurring. Furthermore, the reports should be evaluated in such a way as to maintain confidentiality of the individual nurses and prevent colleagues from becoming aware of their colleague's error reports (Alduais et al., 2014; Mostafaei et al., 2014).

Focusing on the individual instead of the system is indicative of a poor leadership style and lack of support for the nurses. Rather than blaming individual nurses, nursing leaders and administrators should focus on helping RNs to avoid the reoccurrence of errors. Moreover, complex reporting systems are a burden for nurses and increase both workload and levels of stress, as well as reducing the availability of time for medical staff to rest (Ahmed et al., 2019). Alduais et al. (2014) state that nurses should be educated in and receive regular training on how to report MAEs. They also suggest that reporting systems could be upgraded and computerised, as this reduces the time it takes to make a report and increases confidentiality. In Kuwait, nurses generally use handwritten, hard copy paper forms to make reports; the computerisation of MAE reporting systems could thus have a profound impact on both workload and confidentiality. To elaborate, if nurses feel confident that their MAE reports are made without the possibility of other colleagues knowing about them, this could remove one of the key barriers that has been reported in this study: fear of negative consequences from colleagues.

## **5.7 Study limitations**

It is important to acknowledge the limitations of the current study. Firstly, the use of an online survey is a new approach to nurses in Kuwait. As outlined previously, hard copy surveys and paperwork are far more common in Kuwait, and of the participating RNs, 40%(n=366) did not complete the survey as out of (n=916) the total survey online conducted in two hospitals, in

addition, a new approach used in this study in Kuwait and participants have participated in the study was acceptable. One of the main reasons for failure to complete may be fear of punishment when reporting MAEs to nursing administrations. The nurses may fear that their participation would become known to the hospital administration, and that could interfere with the accuracy of their answers if they had made any MAEs.

Another limitation is that the study sample may not be entirely representative of the target population, thus limiting external validity. In particular, there are some disparities in the gender mix of the sample. In Kuwait, 65% of nurses are female whereas 35% are male; in the current study, males made up slightly less than 35%. This may have had an impact on the results, as male nurses usually act differently than females in reporting MAEs in Kuwait.

Furthermore, the online survey was voluntary for the participants. The survey itself was self-reported and mainly utilised closed questions. The benefits of using the online, closed question survey were lower costs and ensuring confidentiality of participants. However, closed question responses are, by definition, limited and perhaps only provide a superficial understanding of the participants' perceptions. Future research should combine surveys with interviews or focus groups to explore nurses' perceptions of MAEs more thoroughly.

## **5.8 Summary**

MAEs represent the most prevalent type of medical errors. MAEs can register adverse health effects on patients and compromise patient safety. The findings of this study show that nurses are afraid of reporting MAEs in Kuwait. Nursing administration in hospitals has embraced a punitive culture that discourages nurses from reporting MAEs. This punitive culture involves reprimanding nurses who report a significant level of MAEs. Since nurses are afraid of losing their jobs (Tabatabaee et al., 2014), they intentionally fail to report MAEs. To avoid such forms of punishment, nurses prefer not to report MAEs.

A negative, punitive culture does not emphasise the need for regular reporting of MAEs, and nurses may lack the competencies required for accurate reporting. Moreover, some nurses perceive some medication errors as less significant and opt to leave them out when reporting (Yung et al., 2016). Other factors include an extremely busy schedule that leaves nurses without adequate time to carry out the expected reporting. It is imperative to determine the specific barriers that discourage nurses from conforming to the reporting requirements. The reluctance to report MAEs has proven to be a major issue in various hospitals in Kuwait. In the current study, the Pearson correlation coefficient was used to explore significant relationships between variables of demographics and groups of questions related to RNs' perceptions of reporting MAEs, regarding personal factors, nursing administration factors, and reporting processes. Significant relationships

were found that may impact on RNs reporting MAEs. Lastly, the study suggested some main strategies for improving the reporting rate of MAEs among nurses in Kuwait. These include computerised reporting systems, the promotion of a blame-free working culture, and regular education for nurses on how MAE reports should be written.

## CHAPTER 6: CONCLUSION

This study aimed to identify and understand the key barriers that prevent MAEs (medication administration errors) from being reported by RNs (registered nurses) in general hospitals in Kuwait. MAEs represent the most prevalent types of medical errors, and they can have serious adverse health effects on patients and compromise patient safety (Hammoudi et al., 2018). The current study utilised an online survey to explore relationships between demographic variables and participants' perceptions of reporting MAEs, as well as potential barriers to reporting MAEs.

The study revealed that RNs in Kuwait had concerns about reporting MAEs. Several barriers were identified, including: negative culture in the workplace; fear of being punished; unsupportive nursing administration; and inadequate and overly complex reporting system processes. These findings would seem to correspond to similar results of previous studies, which also highlight the roles of fear of being punished, lack of knowledge associated to MAEs, and long reporting processes (Rutledge et al. 2018; Soydemir et al., 2017). Other studies supported the impact of hospital administration and nursing administration on the reporting of MAEs, including the negative attitude of administrators and lack of feedback in relation to reported MAEs (Mostafaei et al., 2014; Samsiah et al., 2016; You et al., 2015). It is essential to encourage a more positive approach from nursing administration towards nurses in hospitals, particularly regarding MAEs.

The current study revealed that several demographic variables were significantly correlated with reporting of MAEs, specifically gender and ethnicity. It is vital to provide sufficient education and training in relation to MAEs as one of the strategies to improve reporting processes, and ultimately improve patient safety. Further research into the application of an education program and its impact on MAE reporting is required to improve MAE reporting rates in Kuwait.

Based on the findings of this study, the following recommendations are offered for future research:

1. The researcher was not able to explore the administration culture in depth as the research used only quantitative methods, whereas interviews would provide a better understanding of nurses' barriers and their personal opinion of nurses' work in hospitals in Kuwait.
2. In the quantitative analysis the views of the male nurses were not well represented. It is thus critical that any further research aims at recruiting a more balanced sample to ensure representation of the viewpoints of male nurses in Kuwait.
3. Assess the nurses' attitudes towards the use of technology within the medication administration process and the MAE reports. Assess the readiness of the use of technology in reporting MAEs.
4. Further analysis of barriers to reporting MAEs is needed, to take into account the different geographical locations in Kuwait.

## REFERENCE LIST

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# APPENDICES

## APPENDIX A

### *Flinders University Ethics Approval*

Dear Eidan,

Your conditional approval response for project 8357 was reviewed by the interim Chairperson of the Social and Behavioural Research Ethics Committee (SBREC) and was **approved**. The ethics approval notice can be found below. I have also attached all the documentation relating to your project, so it is all in one place for you allowing you to keep track of exactly what has been approved.

### APPROVAL NOTICE

Project No.:	8357		
Project Title:	The barriers to reporting medication administration errors for registered nurses in Kuwait		
Principal Researcher:	Mr Eidan Alraisheid		
Email:	<a href="mailto:alra0148@flinders.edu.au">alra0148@flinders.edu.au</a>		
Approval date:	10 July 2019	Ethics Approval Expiry Date:	2 July 2021

The above proposed project has been **approved** on the basis of the information contained in the application, its attachments and the information subsequently provided with the addition of the following comments.

#### **Additional comments:**

1. Ministry of Health Permission Provision of a copy of the written permission from the Ministry of Health *on receipt*. Please note that data collection should not commence until the researcher has received the approval from the Ministry of Health Kuwait; as well as permissions from the heads of all hospitals who agree to be involved. (item G1 and Conditional approval response – number 3).
2. Permissions Required The Chairperson noted it appears the student researcher has misunderstood the request made about obtaining permissions from the management of each hospital. After the Ministry of Health has nominated 3 hospitals that can participate if they

wish; the Committee is asking the researcher to obtain permission from management of all hospitals that wish to be involved. This permission needs to be obtained in addition to the permission that needs to be obtained from the Ministry of Health. Management of each hospital need to grant permission in addition to the Ministry of Health permission; as they have a right to decline the involvement of the hospital they are employed by if they do not want the hospital to be involved for some reason. Nomination of a hospital by the Ministry of Health is required, however, it is not the only permission required for a hospital to be involved. On that basis, please submit copies of written correspondence granting permission from hospital management of each hospital to be involved. Please ensure that the SBREC project number is included in the subject line of any permission emails forwarded to the Committee. Please note that data collection should not commence until the researcher has received the relevant permissions (item D8 and Conditional approval response – number 5). If you have any questions about this requirement, please contact the interim Chairperson, Dr Deb Agnew on 8201-3456 or [deb.agnew@flinders.edu.au](mailto:deb.agnew@flinders.edu.au)

## RESPONSIBILITIES OF RESEARCHERS AND SUPERVISORS

**1. Participant Documentation** Please note that it is the responsibility of researchers and supervisors, in the case of student projects, to ensure that:

- all participant documents are checked for spelling, grammatical, numbering and formatting errors. The Committee does not accept any responsibility for the above mentioned errors.
- the Flinders University logo is included on all participant documentation (e.g., letters of Introduction, information Sheets, consent forms, debriefing information and surveys – with the exception of purchased research tools) and the current Flinders University letterhead is included in the header of all letters of introduction. The Flinders University international logo/letterhead should be used and documentation should contain international dialling codes for all telephone and fax numbers listed for all research to be conducted overseas.
- the SBREC contact details, listed below, are included in the footer of all letters of introduction and information sheets. *This research project has been approved by the Flinders University Social and Behavioural Research Ethics Committee (Project Number 'INSERT PROJECT No. here following approval'). For more information regarding ethics approval of the project the Executive Officer of the Committee can be contacted by telephone on 8201 3116, by fax on 8201 2035 or by email [human.researchethics@flinders.edu.au](mailto:human.researchethics@flinders.edu.au).*

**2. Annual Progress / Final Reports** In order to comply with the monitoring requirements of the *National Statement on Ethical Conduct in Human Research 2007 (updated 2018)* an annual progress report must be submitted each year on the **10 July** (approval anniversary date) for the duration of the ethics approval using the report template available from the Managing Your Ethics Approval web page. **Please note** that no data collection can be undertaken after the ethics approval expiry date listed at the top of this notice. If data is collected after expiry, it will not be covered in terms of ethics. It is the responsibility of the researcher to ensure that annual progress reports are submitted on time; and that no data is collected after ethics has expired. If the project is completed *before* ethics approval has expired please ensure a final report is submitted immediately. If ethics approval for your project expires please either submit (1) a final report; or (2) an extension of time request (using the modification request form).

First Report due date:

**10 July 2020**

Final Report due date:

**2 July 2021**

-

## APPENDIX B

### Kuwaiti Ministry of Health Approvals



## مركز الديوان للترجمة والطباعة والتصوير Al-Diwan Translation Center

مترجمون محلّفون ومعتمدون من قبل جميع الوزارات والسفارات في الدولة ويكافئ اللغات العالمية  
SWORN TRANSLATORS SPECIALIZED IN ALL APPROVED LANGUAGES AUTHORIZED BY ALL EMBASSIES & MINISTRIES

State of Kuwait

Ministry of Health

Asst. Undersecretary for Planning & Quality

Reference: 3271

Date: 11/07/2019

Respected Dr. Undersecretary

**Subject: Facilitating the mission of the researcher Mr./ EIDAN S  
E ALRASHEID and others, Master's Student at Flinders  
University in Australia, research No. 1131/2019**

Under title:

**The Barriers to Reporting Medication Administration Errors for  
registered nurses in Kuwait**

Kindly be informed that based on the recommendation of the standing committee for co-coordinating health and medical research constituted by the virtue of the ministerial decision No. 207 of 2012, in its fifth meeting held on Tuesday, dated 25/06/2013 concerning the mechanism of initiation research requests that do not include implementation of tests or interventions of giving medication to patients, and studying the request and protocol of research and informed consent submitted by: researcher Mr./ EIDAN S E ALRASHEID and others, Master's Student at Flinders University in Australia, under the title:

**The Barriers to Reporting Medication Administration Errors for  
registered nurses in Kuwait**

The research shall be conducted using a questionnaire to collect information nurses and healthcare providers at the hospitals of the Ministry of Health.

مركز الديوان للترجمة

ج. غرناطة	المرقاب	كيان	ج. الزهراء	ج. الخالدي	ج. الشاميه	ج. الزهراء	حولي
24864644	22462020	24816060	22531818	24926388	22598966	25240565	22644644



## مركز الديوان للترجمة والطباعة والتصوير Al-Diwan Translation Center

مترجمون محلشون ومعتمدون من قبل جميع الوزارات والسفارات في الدول وبكافة اللغات العالمية  
SWORN TRANSLATORS SPECIALIZED IN ALL APPROVED LANGUAGES AUTHORIZED BY ALL EMBASSIES & MINISTRIES

The research doesn't include conducting any medical experiments or giving any medications or taking any vital samples.

We recommend the approval of conducting the research, given that the researchers shall undertake to reserve the rights of participants with regard to privacy, confidentiality of data and non-disclosure of the same outside the framework of research, in addition, Informed Consent shall be collected from the participants using the approved form.

Kindly review and advise accordingly, in respect with informing the competent authorities concerned with the research (M/S: Directors of Health Districts, Ms. Director of Dept. of Nursing Services) to take all the necessary actions to facilitate the mission of the researchers to conduct the study in accordance with coordination with Directors of Dept. where the study will be conducted following the regulations.

Kind regards,

Asst. Undersecretary for Planning & Quality

(Sealed & signed)

Approved



Handwritten signature in blue ink.

ج. غرناطة	العراق	كيفان	ج. النهضة	ج. الخالدية	ج. الشاميه	ج. الزهراء	حولي
24864644	22462020	24816060	22531818	24926388	22598966	25240565	22644644



دولة الكويت  
وزارة الصحة  
وكيل الوزارة المساعد لشئون التخطيط والجودة



مستند  
لجنة الأبحاث  
رقم ٢٤٧٤  
تاريخ 2019/7/11

المرجع : ٢٤٧٤  
التاريخ : المصاحف

المحترم

السيد الفاضل / د. وكيل الوزارة

تحية طيبة وبعد ،،،

الموضوع / تسهيل مهمة الباحث/ عيدان سالم عيدان الرشيد وآخرون طالب ماجستير في جامعة Flinders بأستراليا رقم البحث ( 2019 /1131 ) تحت عنوان :

**The barriers to reporting medication administration errors for registered nurses in Kuwait**

يرجى التفضل بالإحاطة بأنه وفقاً لتوصية اللجنة الدائمة لتنسيق البحوث الطبية والصحية المشكلة بموجب القرار الوزاري رقم 207 لسنة 2012 باجتماعها الخامس المنعقد يوم الثلاثاء 2013/6/25 بشأن آلية البحوث التي لا تتضمن إجراء فحوصات أو تداخلات أو إعطاء أدوية للمرضى وبدراسة طلب وبيروتوكول البحث والاقرار المستنير المقدم من الباحث/ عيدان سالم عيدان الرشيد وآخرون طالب ماجستير في جامعة Flinders بأستراليا بتاريخ 2019 /7/8 تحت عنوان

**The barriers to reporting medication administration errors for registered nurses in Kuwait**

والذي يتم باستخدام استبيان لجمع المعلومات من أفراد الهيئة التمريضية ومقدمي الرعاية الصحية بمستشفيات وزارة الصحة.

السيد د. مدير متفهم العاصم لصحيفه  
المحترمة

1

P.O. Box (5) 13001 Safat, Kuwait  
Tel : 24622228 - 24622230 Fax : 24866514

ص ب : (٥) الرمزا البريدي ١٣٠٠١ الصفاة - الكويت  
للتفون : ٢٤٨٦٦٥١٤ - ٢٤٦٢٢٢٣٠ - فاكس : ٢٤٦٢٢٢٢٨

المرجع : ٢٠٧١  
التاريخ : ١١-٧-١٩٠١

ولا يتضمن البحث إجراء أي تجارب طبية أو إعطاء أدوية أو أخذ عينات حيوية.  
فإننا نوصي بالموافقة على إجراء البحث مع التزام الباحثين بالمحافظة على حقوق المشاركين بالبحث بالخصوصية وسرية المعلومات وعدم تداولها خارج إطار البحث والحصول على الموافقة المستنيرة المسبقة من المشاركين (Informed Consent) باستخدام النموذج المعتمد لذلك .  
برجاء التفضل بالاطلاع والتوجيه بما ترونه مناسباً نحو مخاطبة الجهات ذات الصلة بموضوع البحث (السادة / مدراء المناطق الصحية / السيدة / مدير ادارة الخدمات التمريضية) بهذا الشأن للعمل على تسهيل مهمة الباحثين لإجراء الدراسة مع مراعاة التنسيق مع السادة رؤساء الاقسام التي سيتم بها الدراسة وفقاً للضوابط المنظمة لذلك .

وتفضلوا بقبول فائق الاحترام،،،

الدكتور / محمد جاسم الخشتي  
الوكيل المساعد لشؤون التخطيط والجودة  
رئيس اللجنة الدائمة لتنسيق البحوث الطبية والصحية

Khalifa

يعتمد،،  
حسب النظم  
وكيل وزارة الصحة  
١٩٠١

٢  
وكيل الوزارة المساعد لشؤون  
التخطيط والجودة

## APPENDIX C

### *Kuwaiti Hospital Approvals*

STATE OF KUWAIT  
MINISTRY OF HEALTH



دولة الكويت  
وزارة الصحة

Reference : .....

Date 17/11/2019 .....

الرقم: .....

التاريخ: .....

From,

Director of Hospital,  
Al Sabah Hospital  
Kuwait

To,

College of Nursing & Health Sciences – Flinders University

TO WHOM SO EVER IT MAY CONCERN

We are pleased to confirm the acceptance of the study “The barriers to reporting Medication administration errors for Registered Nurses in Kuwait, to be conducted in Al Sabah Hospital by Mr. Eidan Al Rasheid, as part of his Masters Degree, upon the condition that it gains approval by the Ministry of Health.

If you have further questions, please do not hesitate to contact us.

Yours sincerely,

  
د. نايف الجبري

Director of Hospital

Al Sabah Hospital

Kuwait

17 NOV 2019

Cables : HEALTH KUWAIT

برقياً : صحة الكويت

Admin. 5

Financial Affairs 1519

Medical Stores 22575

المستودعات ٢٢٥٧٥

المالية ١٥١٩

الوزارة ٥

P. O. Box : 13001

5

1519

22575

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Zip Code : 13001

E-Mail: health@moh.gov.kw

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الرمز البريدي للوزارة

7540 HA 0009621

MINISTRY OF HEALTH  
Kuwait – Arabian Gulf



Reference :.....  
Date :...18/11/2019 .....

الرقم : .....  
التاريخ : .....

From ,  
Director of Hospital  
Al-Amiri Hospital  
Kuwait

To,  
College of Nursing & Health Science – Flinders University

**TO WHOM SO EVER IT MAY CONCERN**

We are pleased to confirm the acceptance of the study “ the barriers to reporting medication administration errors for registered nurses in kuwait , to be conducted in Al-Amiri Hospital by Mr.Eidan Al-rasheid , as part of his Masters Degree , upon the condition that it gains approval by the Ministry of Health .

If you have further questions , please do not hesitate to contact us  
Your sincerely ,

**Director of Hospital  
Al-Amiri Hospital  
Kuwait**

د. أنور مهدي صالح الراشد  
نائب مدير  
مستشفى الأميري ( 8 )

Cables : HEALTH KUWAIT  
Admin financial affairs medical  
P.O. BOX: 5 1519 22575  
ZIP Code : 13001

برقا : صحة الكويت  
الوزارة المالية المستودعات  
ص.ب.: 5 1519 22575  
الرمز البريدي للوزارة : 13001

E-MAIL: health@moh.gov.kw

## **APPENDIX D**

### **Survey**

#### **The barriers to reporting medication administration errors for registered nurses in Kuwait**

Thank you for your interest to participate.

Before you start, if you are using a mobile phone, the horizontal view  
is recommended.



College of Nursing and Health Sciences  
GPO Box 2100  
Adelaide SA 5001  
Tel: +61 892013345  
Fax: +61 8  
Alra0148@flinders.edu.au  
www.flinders.edu.au  
CRICOS Provider No. 00114A

### Participant Information Sheet

The barriers to reporting medication administration errors for registered nurses in Kuwait.

**Flinders Ethics Approval Number: 8357**

### Research Team

Mr Eidan Alrasheid- Postgraduate student

Dr Yvonne. Parry - Supervisor  
Dr Tiffany Conroy

### College of Nursing and Health Sciences - Flinders University

Phone: +61403359858

Email: alra0148@flinders.edu.au

Phone: +6182013345

Phone: +6182013246

Email: yvonne.parry@flinders.edu.au

Email: tiffany.conroy@flinders.edu.au

### Description:

Medication errors does risk to patient and their care. The aim of this project is to assess the readiness of nurses to report drug administration errors, to clarify the barriers to report the medication errors in Kuwait and to determine the professional factors associated with the willingness of nurses to report medication errors. This study is being started as part of a master's research project by Eidan Alrasheid at Flinders university in south Adelaide.

### PARTICIPATION

Your participation in this project is voluntary and anonymous. If you do agree to participate, you cannot withdraw once the questionnaire is submitted. Your decision to participate will not have impact on your current or future job. Your participation will involve the completion of an anonymous online self-report questionnaire that will take approximately 10 minutes of your time.

### EXPECTED BENEFITS

It is expected that this project will not directly benefit you. However, your participation may contribute towards a greater understanding of the barriers and facilitators to report medication administration errors in Kuwait and offer recommendations for the future development of nursing quality in Kuwait. Consequently, a safe environment could be ensured in which nurses can report their errors.



### **RISKS**

There are low risks related to your participation in this study. There is a risk possibly you may experience anxiety or uncomfortable related to a feeling of unwillingness to report drug errors if this has occurred. You will have access to counselling at the hospital from staff Health Clinic counselling services at your place of employment.

### **CONFIDENTIALITY**

All responses and interpretations are anonymous and will be treated confidentially. The names of individual persons are not required in any of the responses.

### **CONSENT TO PARTICIPATE**

The return of the completed questionnaire is accepted as an indication of your consent to participate in this project.

### **QUESTIONS / FURTHER INFORMATION ABOUT THE PROJECT**

Please contact one of the research team members named above if you have any other questions or if you require further information about the project.

*Thank you for considering completing the online survey for this project.*

**“Click the arrow below if you wish to proceed”**

ABN 65 524 596 200 CRICOS Provider No. 00114A

inspiring  
achievement

Registered Nurses' Willingness to Report Medication Administration Errors  
Survey

Instructions

**Please complete this survey. There are no right or wrong answers.**

**All surveys responses are completely anonymous, confidential and no information you disclose can be linked back to you or will be provided to any other person but the researcher.**

**Email:Alra0148@flinders.edu.au**

**SBREC: 8357**

PART I      Demographics and backgrounds

PART II      Perceptions of reporting medication errors

PART III     Potential barriers to reporting medication incidents

*Your cooperation and time to participate in this survey is greatly appreciated.*

*Thank you*

## PART I –Demographics and Backgrounds

Please complete the following background information (tick the appropriate box)

1. Gender:

- Male
- Female
- Non-binary
- Prefer not to say

2. Age:

- < 25 years
- 25- 40 years
- > 40-60 years
- >60 years

3. Years of post-graduate nursing experience:

- < 1 years
- 1- 5 years
- 5-10 years
- 10-20 years
- >20 years

4. Highest level of nursing education:

- Diploma/ Associated Diploma
- Bachelor degree
- Postgraduate

5. Ethnicity

- Arabian (e.g. Saudi, Egyptian, Tunisian, Jordanian etc.)
- Asian (e.g. Philippine, Malaysian, Japanese, Indian etc.)
- Western (British, Australian, New Zealander etc.)
- Other( please describe ).....

6. In which areas have you predominantly worked whilst practising as a Registered Nurse (you may tick more than one box)

- Medical wards
- Surgical wards

- Paediatric wards
- Emergency department
- Speciality are eg: coronary care unit, Intensive care unit
- Other ( please describe ).....

7. **Reflecting back over your career as a Registered Nurse, have you ever made a medication administration error** (e.g. this may be as simple as delivering the medication by the incorrect route, or at the incorrect time, not just the wrong drug or the wrong patient)?

- Yes
- No

8. If you made a medication error/s in Kuwait hospitalises did you report the medication errors?

- Never
- Some
- All

9. Do you have any concerns about or do you feel that you would face any barriers if you were to report a medication error in Kuwait?

- Yes
- No

**PART II: Perception of Reporting Medication Errors**

**Please read the following statements and choose ‘Yes’ or ‘No’.**

Nurse’s perception to report medication error/s		
Items	Yes	No
When a medication error occurs I think it, should be reported to the department?		
I believe that reporting medication errors is a worthy use of my time		
I will report a medication error even if it does not harm the patient		
I will report a medication error even if it is not possible to improve the patient’s health status subsequent to the medication error		
I am willing to report a medication error only when similar errors have occurred previously in the department		
I would report a medication error even if I was not involved in it (for example another nurse on your shift made a medication error and you know they did not report)		

PART III: Potential Barriers to Reporting Medication Errors

**Included here are three themes, which may potentially have impact upon your willingness to report your medication errors. Please read each statement and choose ‘Yes’ or ‘No’.**

**A. Personal Factors**

I would be hesitant to report a medication error as I believe that:		
Items	Yes	No
I would be viewed as incompetent by colleagues		
I would be discriminated against by co-workers (e.g. you may feel that co-workers might consider you to be usually involved in medication errors)		
Other employees in the hospital would become aware of my medication error.		
It is likely I would face repercussions (e.g. salary deductions or contract termination)		
Patient or family’s may develop a negative attitude toward me with a loss of confidence in my abilities.		

**B. Administration Factors**

I would be hesitant to report a medication error (or would not report my medication error) due to a nursing administration concern ( <i>for this survey the term ‘nursing administration’ means Head Nurse, Nursing Supervisor and/or Nursing Director</i> ).		
Items	Yes	No
I would receive negative feedback from nursing administration if I were to report a medication error/s (e.g. this will affect my annual performance evaluation or, result in me having to complete another medication administration competency exam)		
Nursing administration believe that on medication errors are a measure of the quality of nursing care provided		

Nursing administration would focus on the individual nurse as the primary cause of the medication error rather than examining the system as a potential cause or contributor to the medication error (e.g. environmental causes, poor communication)		
The response toward staff by nursing administration would not match the severity of the medication error		

I would be hesitant to report a medication error (or would not report a medication error) because I have concerns about the incident reporting process.		
Items	Yes	No
Incident report forms are too complicated		
Incident reporting wastes too much time (e.g. filling out report, contacting the physician)		
I would not know how to report a medication error if it occurred		

**C. Reporting Processes Factors**

Q14 Do you have any other reason that may influence your decision to report a medication error?

- Yes
- Yes (please describe)\_\_\_\_\_

If you feel any discomfort or anxiety please contact your hospital employee support service.

*Thank you for participating in this survey.*

# APPENDIX E

## Study Instrument Permission and Communication

Move to ▼ Categorize ▼ Snooze ▼ Undo ⋮

Seeking Permission to Use Survey/Questionnaire Tool 📎 2 📄

**HA** Hayfa Almutary <aalalmetere2@kau.edu.sa>  
Wed 10/04/2019 5:27 PM  
Eidan S E H S Alrasheid ✉

 medication\_errors\_Questionn...  
148 KB

Dear Eidan,  
It is an interesting topic to be investigated, especially in Arabic context! definitely, you have my permission to use the instrument under the mentioned circumstances (please see attachment). I hope if I could get a copy of your thesis once you complete it.  
Good luck in your research!!  
**Best regards**

Dr Hayfa Almutary, PhD, MS, RN  
Assistant Professor  
Head of Medical/ Surgical Nursing Department  
Faculty of Nursing, Building 8, Office # 805  
King Abdulaziz University  
Jeddah, Saudi Arabia  
[P. O. Box 4929, Jeddah 22246](mailto:aalalmetere2@kau.edu.sa)  
Tel: +96602640000, Ext.: 24863  
Email: [aalalmetere2@kau.edu.sa](mailto:aalalmetere2@kau.edu.sa)

⋮

Move to ▼ Categorize ▼ Snooze ▼ Undo ⋮

Seeking Permission to Use Survey/Questionnaire Tool 📎 2 📄

⋮

**E** Eidan S E H S Alrasheid  
Wed 10/04/2019 1:38 PM  
aalalmetere2@kau.edu.sa ✉

 Seeking Permission to Use Su...  
18 KB

**Seeking Permission to Use Survey/Questionnaire Tool**

Date: 10/04/2019  
Name: Eidan Alrasheid  
Institution: The College of Nursing and Health Sciences  
Department: research  
Address: Sturt Rd, Bedford Park, South Australia 5042

Dear H.Almutary:

I am a Master's student from Flinders University conducting research for my dissertation titled "What are the nurses' barriers to report medication administration errors in a general hospital in Kuwait? under the direction of my dissertation supervisor by Dr. Yvonne K Parry, who can be contacted via email: [yvonne.parry@flinders.edu.au](mailto:yvonne.parry@flinders.edu.au).

I would like your permission to use the survey/questionnaire instrument you have developed in my research study. I would like to use and print your survey under the following conditions:

- I will use the surveys only for my research study and will not sell or use it with any compensated or curriculum development activities.
- I will include the copyright statement on all copies of the instrument.

Additionally, if you are interested upon completion of my research I can provide you with a copy of my complete thesis. If these are acceptable terms and conditions, please indicate so by replying to me through e-mail: [alra0148@flinders.edu.au](mailto:alra0148@flinders.edu.au)

Sincerely,  
Eidan Alrasheid

## APPENDIX F

### Value labels for survey responses

Characteristic category		Value Label
<b>Gender</b>	male	1
	female	2
	Non-binary	3
	Prefer not to say	4
<b>Age:</b>	< 25 years	1
	25- 40 years	2
	> 40-60 years	3
	>60 years	4
<b>Years of post-graduate nursing experience:</b>	< 1 years	1
	1-5 years	2
	5-10 years	3
	10-20 years	4
	>20 years	5
<b>Q3.Years of post-graduate nursing experience:</b>	< 1 years	1
	1- 5 years	2
	5-10 years	3
	10-20 years	4
	>20 years	5
<b>Q4 Highest level of nursing education:</b>	Diploma/ Associated Diploma	1
	Bachelor degree	2
	Postgraduate	3
<b>Ethnicity</b>	Arabian (e.g. Saudi, Egyptian, Tunisian, Jordanian, etc.)	1
	Asian (e.g. Philippine, Malaysian, Japanese, Indian, etc.)	2
	Western (British, Australian, New Zealander, etc)	3
	Other (please describe	4
<b>Q6 In which areas have you predominantly worked whilst practising as a Registered Nurse (you may tick more than one box)</b>	Medical wards	1
	Surgical wards	2
	Paediatric wards	3
	Emergency department	4
	Speciality area eg: coronary care unit, Intensive care unit.	5
	Other (please describe)	6
<b>Q7 Reflecting back over your</b>	Yes	1

Characteristic category		Value Label
career as a Registered Nurse, have you ever made a medication administration error (e.g. this may be as simple as delivering the medication by the incorrect route, or at the incorrect time, not just the wrong drug or the wrong patient)?	No	2
	Yes	1
If you made a medication error/s in Kuwait hospitals did you report the medication errors?	No	2
	Yes	1
Do you have any concerns about or do you feel that you would face any barriers if you were to report a medication error in Kuwait?	No	2
	Yes	1
<b>Nurse's perception to report medication error/s</b>		
When a medication error occurs I think it, should be reported to the department? (1)	No	2
	Yes	1
I believe that reporting medication errors is a worthy use of my time (2)	No	2
	Yes	1
I will report a medication error even if it does not harm the patient (3)	No	2
	Yes	1
I will report a medication error even if it is not possible to improve the patient's health status subsequent to the medication error (4)	No	2
	Yes	1
I am willing to report a medication error only when similar errors have occurred previously in the department (5)	No	2
	Yes	1
I would report a medication error even if I was not involved in it (6)	No	2
	Yes	1
<b>Personal Factors</b>		
I would be viewed as incompetent by colleagues (1)	No	2
	Yes	1
I would be discriminated	Yes	1

<b>Characteristic category</b>		<b>Value Label</b>
against by co-workers (2)	No	2
Other employees in the hospital would become aware of my medication error.(3)	Yes	1
	No	2
	No	2
It is likely I would face repercussions (4)	Yes	1
	No	2
	No	2
Patient or family's may develop a negative attitude toward me with a loss of confidence in my abilities (5)	Yes	1
	No	2
<b>Administration Factors</b>		
I would receive negative feedback from nursing administration if I were to report a medication error/s (1)	Yes	1
	No	2
Nursing administration believe that on medication errors are a measure of the quality of nursing care provided (2)	Yes	1
	No	2
Nursing administration would focus on the individual nurse as the primary cause of the medication error rather than examining the system as a potential cause or contributor to the medication error (3)	Yes	1
	No	2
The response toward staff by nursing administration would not match the severity of the medication error (4)	Yes	1
	No	2
<b>Reporting Processes Factors</b>		
Incident report forms are too complicated (1)	Yes	1
	No	2
Incident reporting wastes too much time (e.g. filling out report, contacting the physician) (2)	Yes	1
	No	2
I would not know how to report a medication error if it occurred (3)	Yes	1
	No	2
Do you have any other reason that may influence your decision to report a medication error?	No	1
	Yes	2