

**NURSES' PERCEPTIONS OF PATIENT
HANDOFFS AND ITS PREDICTORS IN PUBLIC
HOSPITALS WITH SPECIALISTS IN
KELANTAN: A CROSS-SECTIONAL STUDY**

DR. MOHD HANIF BIN MOHD NAWAWI

UNIVERSITI SAINS MALAYSIA

2023

**NURSES' PERCEPTIONS OF PATIENT
HANDOFFS AND ITS PREDICTORS IN PUBLIC
HOSPITALS WITH SPECIALISTS IN
KELANTAN: A CROSS-SECTIONAL STUDY**

by

DR. MOHD HANIF BIN MOHD NAWAWI

**Research Project Report submitted in partial
fulfilment of the requirements for the degree of
Master of Public Health**



USM UNIVERSITI
SAINS
MALAYSIA



JUNE 2023

ACKNOWLEDGEMENTS

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

I am humbly expressing my profound appreciation to my respected mentor, Associate Professor Dr. Mohd Ismail bin Ibrahim, for his exceptional dedication and unwavering support throughout the entire process of composing this thesis. His determined commitment to ensuring our academic success was truly captivating and awe-inspiring.

I am honoured to express my earnest gratitude to my co-researcher, Dr. Saiful Nazri bin Satiman, from the Medical Division of the Kelantan State Health Department. Furthermore, I would like to extend my sincere appreciation to all lecturers in the Department of Community Medicine at the prestigious School of Medical Sciences, Health Campus, Universiti Sains Malaysia and my immense admiration goes to my compassionate and easy-going classmates in the Master of Public Health 2022/2023 programme, whose unshakable encouragement has been a source of great inspiration throughout this journey.

Finally, to my wonderful and understanding wife, Anis Afikah binti Ismail, my adorable kids, Muhammad Rifqy Al-Rayyan bin Mohd Hanif and Talia Tisha El-Tihany binti Mohd Hanif, my kind-hearted parents and in-law for the patience, courage, unending support and prayers over the years.

TABLE OF CONTENTS

ACKNOWLEDGEMENTS.....	ii
TABLE OF CONTENTS.....	iii
LIST OF TABLES	vii
LIST OF FIGURES	viii
LIST OF APPENDICES	ix
LIST OF ABBREVIATIONS	x
ABSTRAK	xi
ABSTRACT.....	xiii
CHAPTER 1 INTRODUCTION.....	1
1.1 Introduction	1
1.1.1 Handoff and Impact on The Healthcare System	1
1.1.2 Role of Nurses and Handoff Process.....	2
1.1.3 Global Patient Safety.....	3
1.1.4 Patient Safety in Malaysia.....	5
1.2 Problem Statement and Rationale of Study.....	7
1.3 Research Questions	9
1.4 Research Objectives	9
1.4.1 General Objective.....	9
1.4.2 Specific Objectives.....	9
1.5 Research Hypothesis	9
CHAPTER 2 LITERATURE REVIEW.....	10
2.1 Patient Safety Is A Priority.....	10
2.2 Safety Handoff Process	12
2.3 Awareness of Poor Handoff Communication and Documentation	13
2.4 Nurse as A Risk Occupation in Patient Safety	13

2.5	Patient Handoffs' Perception Among Nurses	14
2.6	Predictors of Patient Handoffs' Perception Among Nurses.....	18
2.6.1	Sociodemographic Factors and Working Characteristics	18
2.6.1(a)	Age.....	19
2.6.1(b)	Working Experiences.....	19
2.6.1(c)	Educational Level	20
2.6.1(d)	Department	20
2.6.1(e)	Handoff Duration.....	21
2.6.1(f)	Location for Handoff	21
2.6.1(g)	Availability of Handoff Guidelines	22
2.6.1(h)	Formal Training	22
2.6.1(i)	Satisfaction with Current Handoff Process.....	23
2.7	Conceptual Framework	23
CHAPTER 3 METHODOLOGY.....		25
3.1	Study Design	25
3.2	Study Area.....	25
3.3	Study Population	25
3.3.1	Reference Population	25
3.3.2	Source Population	25
3.3.3	Sampling Population	25
3.4	Subject Criteria.....	26
3.5	Sample Size Estimation.....	26
3.5.1	Sample Size Calculation (Objective 1)	26
3.5.2	Sample Size Calculation (Objective 2)	27
3.6	Sampling Method and Subject Recruitment.....	27
3.7	Research Tool.....	30
3.8	Operational Definitions	30

3.8.1	Handoff.....	30
3.8.2	Public Hospital with Specialists.....	30
3.8.3	Perception.....	31
3.9	Data Collection Method	31
3.10	Ethical Consideration	32
3.11	Statistical Analysis	32
3.12	Study Flowchart	33
CHAPTER 4 RESULTS.....		34
4.1	Descriptive Analysis	34
4.2	Mean Perception Score of Patient Handoffs Among Nurses in Public Hospitals with Specialists in Kelantan	36
4.3	Predictors of Patient Handoffs' Perception Among Nurses in Public Hospitals with Specialists in Kelantan	40
4.3.1	Simple Linear Regression (Univariable analysis).....	40
4.3.2	Multiple Linear Regression.....	42
CHAPTER 5 DISCUSSIONS		47
5.1	Discussions.....	47
5.1.1	Sociodemographic and Working Characteristics Among Nurses in Public Hospitals with Specialists in Kelantan.....	47
5.1.2	Mean Perception Score of Patient Handoffs Among Nurses in Public Hospitals with Specialists in Kelantan.....	53
5.1.3	Predictors of Patient Handoffs' Perception Among Nurses in Public Hospitals with Specialists in Kelantan.....	76
5.2	Limitations	81
CHAPTER 6 CONCLUSION AND RECOMMENDATIONS		82
6.1	Conclusion.....	82
6.2	Recommendations	84

REFERENCES	87
APPENDICES	107

LIST OF TABLES

	Page
Table 3.1	Sample Size Calculation (Objective 1)27
Table 3.2	Strata Sample Size of Nurses in Each Hospital28
Table 4.1	Sociodemographic of The Participants (n=418)34
Table 4.2	Working Characteristics of The Participants (n=418)35
Table 4.3	Mean Perception Score of Patient Handoffs Among Nurses in Public Hospitals with Specialists in Kelantan (n=418).....37
Table 4.4	Mean Perception Score Across Domains in Patient Handoffs Among Nurses in Public Hospitals with Specialists in Kelantan (n=418).....40
Table 4.5	Predictors of Patient Handoffs' Perception Among Nurses in Public Hospitals with Specialists in Kelantan Using Simple Linear Regression Analysis (n=418)41
Table 4.6	Predictors of Patient Handoffs' Perception Among Nurses in Public Hospitals with Specialists in Kelantan Using Simple Linear Regression and Multiple Linear Regression Analysis (n=418)44

LIST OF FIGURES

	Page
Figure 2.1 Conceptual Framework on Predictors of Patient Handoffs' Perception Among Nurses in Public Hospitals with Specialists in Kelantan	24
Figure 3.1 Flowchart of Study Sampling Method and Subject Recruitment.....	29
Figure 3.2 Flowchart of Study	33

LIST OF APPENDICES

- Appendix A Questionnaire for Nurses' Perceptions of Patient Handoffs and Its Predictors in Public Hospitals with Specialists in Kelantan: A Cross-Sectional Study
- Appendix B Approval from Medical Research & Ethics Committee, National Malaysia Research Registry (NMRR)
- Appendix C Approval from Jawatankuasa Etika Penyelidikan Manusia (JEPeM) Universiti Sains Malaysia
- Appendix D Permission from Author for Using the Questionnaire

LIST OF ABBREVIATIONS

e.g	exempli gratia / for example
DALYs	Disability-adjusted life years
EHR	Electronic health record
HICs	High-income countries
HRPZ II	Hospital Raja Perempuan Zainab II
HSIP	Hospital Sultan Ismail Petra
HTM	Hospital Tanah Merah
IBM	International Business Machines Corporation
JEPeM-USM	Jawatankuasa Etika Penyelidikan Manusia Universiti Sains Malaysia
LMICs	Low- and middle-income countries
MOH	Ministry of Health
MPSGs	Malaysia Patient Safety Goals
NMRR	National Malaysia Research Registry
O&G	Obstetrics and Gynaecology
PSS	Probability proportional to size
RM	Ringgit Malaysia
SD	Standard deviation
SDGs	Sustainable Development Goals
SPSS	Statistical Package for the Social Sciences
UHC	Universal Health Coverage
USA	United States of America
USD	United States Dollar
WHO	World Health Organization

**PERSEPSI JURURAWAT TERHADAP PENYERAHAN MAKLUMAT
PESAKIT DI HOSPITAL AWAM BERPAKAR DI KELANTAN: KAJIAN
KERATAN RENTAS**

ABSTRAK

Pendahuluan: Memahami kepentingan proses penyerahan maklumat pesakit yang betul akan membantu mengurangkan kesilapan dalam perawatan dan meningkatkan keselamatan pesakit. Kajian ini bertujuan untuk menilai persepsi jururawat terhadap proses penyerahan maklumat pesakit di hospital awam berpakar di Kelantan dan faktor-faktor ramalan yang mempengaruhinya.

Metodologi: Kajian keratan rentas ini melibatkan jururawat dari tiga hospital berpakar di Kelantan, Malaysia. Mereka dipilih secara berkadaran dan rawak dari hospital-hospital tersebut untuk tujuan kajian. Jururawat yang terlibat adalah mereka yang mempunyai pengalaman kerja sekurang-kurangnya enam bulan dan bertugas dengan giliran/syif di hospital awam berpakar di Kelantan. Kajian ini menggunakan borang soal selidik yang mengandungi 26 item yang terdapat dalam enam domain, yang mana telah disahkan dan skala pemarkahan menggunakan skala Likert 5 poin. Data dianalisis menggunakan SPSS versi 25 dan analisis regresi linear digunakan untuk mengenal pasti faktor-faktor ramalan terhadap persepsi jururawat dalam proses penyerahan maklumat pesakit.

Keputusan: Sejumlah 418 jururawat mengambil bahagian dalam kajian ini. Keputusan menunjukkan jururawat mempunyai pandangan yang positif terhadap proses penyerahan maklumat pesakit, dengan skor min \pm SD adalah 3.53 ± 0.31 . Purata usia

peserta adalah 41.06 ± 6.26 tahun, purata pengalaman kerja 16.80 ± 6.12 tahun dan purata tempoh masa penyerahan maklumat pesakit adalah 24.39 ± 10.68 minit. Kajian ini mengenal pasti bekerja di jabatan pediatrik (95% CI: -0.195, -0.053, $p < 0.001$), latihan formal dalam perkhidmatan tentang penyerahan maklumat pesakit (95% CI: 0.016, 0.161, $p < 0.05$) dan kepuasan terhadap proses penyerahan maklumat pesakit (95% CI: 0.234, 0.425, $p < 0.001$) sebagai faktor-faktor ramalan yang paling signifikan terhadap persepsi jururawat terhadap proses penyerahan maklumat tersebut.

Kesimpulan: Kajian ini mendapati bahawa secara umumnya, jururawat mempunyai persepsi yang positif terhadap penyerahan maklumat pesakit, dengan faktor-faktor ramalan termasuk berkerja di jabatan pediatrik, latihan formal dan kepuasan terhadap proses tersebut. Bagi mengekalkan amalan penyerahan maklumat pesakit yang baik, pendidikan berterusan, kerja berpasukan, audit dan budaya berfokus keselamatan adalah penting.

Kata Kunci: Penyerahan Maklumat Pesakit, Persepsi Jururawat, Keselamatan Pesakit, Faktor Ramalan

**NURSES' PERCEPTIONS OF PATIENT HANDOFFS AND ITS
PREDICTORS IN PUBLIC HOSPITALS WITH SPECIALISTS IN
KELANTAN: A CROSS-SECTIONAL STUDY**

ABSTRACT

Introduction: Understanding the significance of proper handoff process will help to reduce medical errors and enhance patient safety concerns. Thus, the purpose of this study was to investigate nurses' perceptions of patient handoffs in public hospitals with specialists in Kelantan and its predictors.

Methodology: This cross-sectional study examined nurses from three specialist hospitals in Kelantan, Malaysia. The nurses were proportionately and randomly selected from the hospitals and included in the study. The nurses had at least six months of work experience and worked shifts at public hospitals with specialists in Kelantan. The study used a self-administered questionnaire with 26 items from six domains, which was validated and scored using a 5-point Likert scale. The data was analyzed using SPSS version 25 and linear regression analyses were used to identify predictors of nurses' perceptions of handoffs.

Results: A total of 418 nurses participated in the study. The results indicate that nurses hold a positive view of handoffs, with a mean score \pm SD of 3.53 ± 0.31 . The mean age of the participants was 41.06 ± 6.26 years, the mean working experience was 16.80 ± 6.12 years and the mean handoff duration was 24.39 ± 10.68 minutes. The study identifies the paediatric department (95% CI: -0.195, -0.053, $p < 0.001$), in-service formal training on handoff (95% CI: 0.016, 0.161, $p < 0.05$) and satisfaction with the

handoff process (95% CI: 0.234, 0.425, $p < 0.001$) as the most significant predictors of nurses' perceptions.

Conclusion: The study found that nurses generally perceived patient handoffs positively, with predictors including the paediatric department, handoff training and satisfaction with the process. To maintain good handoff practices, ongoing education, teamwork, audits and safety-focused culture are important.

Keywords: Patient Handoff, Nurses' Perception, Patient Safety, Predictors

CHAPTER 1

INTRODUCTION

1.1 Introduction

1.1.1 Handoff and Impact on The Healthcare System

A patient handoff is a crucial process in healthcare that nurses typically perform several times per day (Gu *et al.*, 2012). Handoffs also referred to as handovers, passovers, shift reports and sign-outs take place at several different points all along the healthcare value chain. Care transitions play a significant and vital role because they involve the handoff of patient or client care from one professional to another, either temporarily or permanently. To maintain continuity of care in a setting that is accessible at any time, any day of the week, nurses act as the informal coordinator and communication partner for all other healthcare professionals. As a result, nursing handoffs happen a lot.

The term "patient handoff" refers to the process by which one healthcare provider transfers knowledge and authority to another to ensure that the patient receives uninterrupted access to the same level of care throughout the transition (Streitenberger *et al.*, 2006). It was estimated that nurses were responsible for between 40 and 70 percent of all transitions of care and discharge handoff in hospitals (Friesen *et al.*, 2008). Peer-to-peer handoffs, which typically occur at shift ends, internal referrals across teams for shared care or consultation, and transfers between institutions or discharges that result in a change in the setting are among the types of handoffs.

Continuous and effective care delivery and administration throughout the care continuum rely on handoffs between nurses and a standard hospital routine (Maxson *et al.*, 2012). Many kinds of patient handoffs take place inside a hospital setting. Inter-unit handoffs are one of the most common and challenging types of handoffs that occur

inside a hospital. Patients may be transferred between different areas of a hospital, such as the general wards, operation theatres and the intensive and critical care units.

The transition of a patient from one specialty and another is difficult and risky, and mistakes and unanticipated consequences commonly occur. This is partly because the people involved in the handoff are from various cultural backgrounds, and everyone possesses expectations and limitations (Niven *et al.*, 2014).

If a handoff is not properly managed, such as if incorrect or unsatisfactory information is obtained and accountability is muddled, patients are in danger of suffering an injury. Patients are also at threat of harm if a handoff is not properly handled as breakdowns in communication amongst the relevant staff that takes place during handoffs constitute a major risk to patient safety and ought to be avoided whenever possible (Richter *et al.*, 2016). The Joint Commission based in Illinois, USA found that misunderstanding was responsible for 60%-80% of all serious adverse outcomes (The Joint Commission USA, 2016).

1.1.2 Role of Nurses and Handoff Process

The main purpose of the handoff is to share information about the patient so that the care plan stays on track and the patient stays safe (VandenBerg Amanda Kaye, 2013). The handoff also serves to teach, build teams, get to know people, and make connections. Many researchers said that the process of handing off from one nurse to the next is very important. During transitions between care providers, they must verify that accurate patient data is being passed along. To guarantee the consistency of care for patients and the appropriate training of newly reporting nurses, a smooth nursing handoff is crucial. However, many grave accidents in healthcare can be directly linked to inappropriate handoffs.

A good practice is necessary to keep a high quality of care in all areas of healthcare, but there has been growing acknowledgment that a lack of training on group work and good communication, as well as a lack of formal handoff systems, are barriers to this (Riesenberg *et al.*, 2010). The patient handoff is therefore a target of quality improvement initiatives and human performance research focused on improving patient safety because it is a high-risk occurrence.

Highly effective group dynamics, teamwork, and communication have been acknowledged as key factors that affect patient safety. Such communication takes place when vital information about the circumstances of patients is transmitted between healthcare professionals (Criscitelli, 2013). It can be difficult to communicate effectively, and workplace misunderstanding is likely to occur owing to several obstacles and failures. A crucial component of nurses' daily clinical practice is the handoff procedure thus the effectiveness of the communication procedure during the handoff is crucially assessed by nurses. Additionally, nurses' opinions of the procedure for nurse-to-nurse accountability maximized (Maxson *et al.*, 2012).

1.1.3 Global Patient Safety

Unexpected complications from poor medical care rank globally among the ten leading causes of mortality and morbidity (WHO, 2020). Approximately 10% of hospitalized patients in high-income countries (HICs) are hurt during treatment while in low- and middle-income countries (LMICs) hospitals, unsafe care claims the lives of more than 2.6 million individuals each year (Slawomirski *et al.*, 2017; National Academies of Sciences *et al.*, 2018). Countless unfavourable events have the risk of causing harm, and part of them are avoidable (de Vries *et al.*, 2008).

As many as four out of ten patients worldwide are harmed during routine or emergency outpatient care and up to 80% of negative outcomes can be avoided.

Diagnostic, pharmaceutical and therapeutic medication errors cause the most harm (Auraaen *et al.*, 2018). In LMICs, the impact of unsafe care is measured in terms of disability-adjusted life years (DALYs), which reflects the number of years lost to disability and premature death. It is concerning that almost two-thirds of these DALYs are attributed to unsafe care (Jha *et al.*, 2013). Thirty percent's of malpractice claims in the United States involved communication failures in hospitals and healthcare practices, resulting in almost two thousand deaths and more than \$1.5 billion in negligence expenses over five years (The Risk Management Foundation of the Harvard Medical Institutions Incorporated, 2015).

The delivery of healthcare is based on patient safety in the incredibly complicated healthcare system, which involves preventing avoidable injuries to patients while treatment and lowering the risk of unwanted injury associated with treatment to a manageable level. If a patient feels unsafe or uneasy while receiving medical care in a hospital or any other facilities, there may be limited options to address their concerns. (Ulrich and Kear, 2014). Consequently, it is imperative for every healthcare professional to make significant efforts in guaranteeing patient safety by prioritizing patient care and avoiding potential errors and negative outcomes in healthcare.

According to World Health Organization (WHO), patient safety is "a framework of organized activities that creates cultures, processes, procedures, behaviours, technologies, and environments in health care that consistently and sustainably lower risks, reduce the occurrence of avoidable harm, make the error less likely, and reduce its impact when it does occur" (Gregory *et al.*, 2021). The goal of all aspects of healthcare is to ensure that patients do not sustain injuries that could have been avoided; yet we are a long way from accomplishing this objective.

Errors in medical treatment are a pervasive and system-wide problem that can arise in any area of the healthcare industry. Medicine and resources need to be deployed at all degrees to evaluate and limit the incidence of the disease so that patients can have a higher quality of life. Although considerable advances have been achieved, patient harm continues to be an ongoing concern within healthcare systems across the globe. To ensure the provision of safe care within this setting, it is essential to engage all pertinent stakeholders, including medical practitioners and patients, and secure a resolute commitment from healthcare leadership at all hierarchical levels.

1.1.4 Patient Safety in Malaysia

Ensuring patient safety has been a fundamental concern in the healthcare industry, and in Malaysia, this issue has been addressed by the Ministry of Health (MOH) through the establishment of the Malaysian Patient Safety Council back in January 2003. This council was instituted with the aim of upholding the provision of safe healthcare services to all individuals (Yoelao *et al.*, 2014). In an effort to strengthen patient safety standards, the Malaysia Patient Safety Goals (MPSGs) were formally introduced on June 24, 2013. These goals delineate 13 crucial aspects of patient safety, along with specific objectives and performance targets. Following the implementation of MPSGs, numerous state and national-level programmes and initiatives have been launched to enhance healthcare personnel's knowledge and awareness of patient safety protocols.

Malaysia is now one of the few countries with its own national patient safety goals, which are applied by all healthcare facilities across the country. The MPSGs have also shed new light about patient safety in Malaysia, as the country makes a dedicated effort to fulfill the goals. Aside from being a unique benchmark for patient safety in Malaysia, it has sparked widespread interest in patient safety throughout the country.

Since its adoption, MPSGs has become an exclusive, dashing and impressive branding of its own in Malaysian hospitals and clinics, both public and private sectors (Patient Safety Council Malaysia and Medical Care Quality Section, 2021).

The primary objective of MPSG was to identify the paramount patient safety areas and offer a comprehensive understanding of the patient safety landscape in Malaysia. However, its impact transcended the initial goal and played a vital role in enhancing the awareness of healthcare quality among patients and healthcare professionals. The Patient Safety Unit, under the Medical Care Quality Section of the Ministry of Health Malaysia, receives a yearly performance report of MPSGs, which is then presented to the Patient Safety Council Malaysia and published on the organization's website.

Among common incidents by Malaysia Incident Reporting System 2018-2020 were medication errors, patient falls in the facility, clinical management errors, adverse outcomes of clinical procedures and other related incidents involving obstetrics, transfusion and laboratory. Recently, for 2021, Malaysia reported two cases of wrong surgery, 35 cases of transfusion error, 51 cases of unintended retained foreign body, 2583 cases of actual medication errors and patient fall involving 4234 adults and 469 paediatrics (Patient Safety Council of Malaysia, 2022). Over the period of 2012 to 2021, the sum of RM 50.1 million was disbursed to resolve 675 ex gratia cases, as compared to RM 139 million disbursed to resolve 206 litigation cases (Ministry of Health Malaysia, 2022).

The healthcare system in Malaysia has been confronted with mounting challenges, such as a surge in demand and cost of care, along with resource scarcity, which have collectively undermined its operational efficacy. Moreover, the lack of funding and resources has exerted a detrimental effect on the quality of care and patient

safety. As a result, it is essential to maintain care results due to rising healthcare demand, longer workdays, and limited funding.

Beginning in 1985, Malaysian hospitals have implemented quality assurance protocols to provide optimal care to their community (Reerink and Nafisah, 1990). The Ministry of Health Malaysia established quality indicators to evaluate hospital performance, which exposed a lack of sufficient training among healthcare professionals, including doctors and nurses, for engaging in quality improvement initiatives. As the healthcare sector seeks to minimize medical errors, inefficiencies, and inadequacies, there is a growing urgency to improve patient safety and care standards in Malaysian hospitals. Furthermore, escalating competition in the healthcare industry has motivated leaders to guarantee that their healthcare practitioners deliver prompt treatment outcomes, comparable to those of private medical facilities.

1.2 Problem Statement and Rationale of Study

The provision of safe and quality patient care hinges on the precise and efficient sharing of healthcare team information. Poor communication during handoffs, which entails anticipating issues and expectations, leads to ambiguities and uncertainties that endanger patient safety. Identified as a primary cause of errors and adverse events in healthcare, the transfer of care between healthcare providers necessitates a comprehensive understanding of the potential weaknesses in current patient handoff procedures. Upholding the principle of non-maleficence, which emphasizes the need to avoid doing harm, is essential to ensuring patient safety and practicing good medicine.

The negative consequences of flawed patient handoffs, which can lead to unsafe medical care and patient harm, can result in significant national burdens, including extended hospitalization, long-term disability, heightened management costs, and

avoidable fatalities. The health system and population of Malaysia continue to bear a significant burden of mortality and morbidity, making it a pressing global public health issue. This concern can be addressed with basic yet effective interventions, which must be initiated by nurses to promote patient safety in all public hospitals with specialist facilities in Kelantan. Failure to provide high-quality medical care in hospitals can undermine the objective of improving public health by ensuring access to care.

In a demonstration of global collaboration and commitment to patient safety, the World Health Organization (WHO) and the Universal Health Coverage (UHC) initiative have made patient safety a top priority. To further emphasize this priority, the WHO observes World Patient Safety Day on September 17th. Malaysia has taken proactive measures to enhance patient safety, resulting in notable improvements in this domain.

Currently, there is a dearth of research that investigates nurses' perceptions of patient handoffs and the factors that influence these perceptions. In fact, only one local study conducted in 2020 at Hospital Kuala Lumpur has addressed this issue and published its findings. Given the potential consequences, such as increased mortality rates, of inaccurate patient handoffs, it is crucial to identify the factors that contribute to this problem. Moreover, the factors may vary depending on the study location, participants, and time frame. Inadequate patient handoffs can also have an indirect impact on other patients, potentially exacerbating morbidity and mortality rates in Malaysia's healthcare system.

Hence, the main goal of this study is to comprehend the perceptions of nurses regarding handoff tasks and the influential predictors in order to guarantee care safety. Furthermore, this research aims to address the gap in knowledge regarding factors linked to nurses' perceptions of patient handoffs, which is believed still prevalent in

Malaysia and can lead to severe patient safety issues if any errors occur. The findings of this study can act as a point of reference for all stakeholders involved in devising intervention strategies and assist researchers in designing appropriate study methods in the future.

1.3 Research Questions

1. What is the mean perception score of patient handoffs among nurses in public hospitals with specialists in Kelantan?
2. What are the predictors of patient handoffs' perception among nurses in public hospitals with specialists in Kelantan?

1.4 Research Objectives

1.4.1 General Objective

To study the mean perception score of patient handoffs and its predictors among nurses in public hospitals with specialists in Kelantan.

1.4.2 Specific Objectives

1. To determine the mean perception score of patient handoffs among nurses in public hospitals with specialists in Kelantan.
2. To determine the predictors of patient handoffs' perception among nurses in public hospitals with specialists in Kelantan.

1.5 Research Hypothesis

HA: There are significant predictors (sociodemographic and working characteristics) of patient handoffs' perception among nurses in public hospitals with specialists in Kelantan.

CHAPTER 2

LITERATURE REVIEW

2.1 Patient Safety Is A Priority

Patient safety is the foremost priority within the healthcare system. Following the publication of the ground-breaking report *To Err is Human*, which asserted that over 90,000 individuals die annually due to medical errors, there has been a growing focus on ensuring the safety of patients in hospitals and other healthcare settings (Kohn *et al.*, 2000). To assist in discovering how things go wrong after the event and seeks to eliminate them in order to keep the number of errors as low as possible, a coordinated effort to enable things to go right more frequently because the healthcare systems are considerably more complex. Usually, patient safety involves more than compliance, eradication, and prevention. Therefore, the key is to recognise that healthcare is generally resilient, and that daily performance succeeds considerably more frequently than it fails. The ability of clinicians to function more flexibly and actively expand their capacity to provide more care more effectively as they constantly adapt their actions to the circumstances would be made possible by the new paradigm.

With the increasing complexity of healthcare systems, patient safety has arisen as a concept and action. Its mission is to limit the number of errors and injuries that can occur during medical treatment. The fundamental principle is to learn from past errors and avoid similar situations in the future (Murphy, 2019). The objective must be to develop practical solutions to enhance healthcare quality and safety. It is absurd to imagine healthcare professionals to always execute flawlessly. Modern medicine is administered under high-stress and frequently inadequate conditions. Every system is meticulously constructed to accomplish precisely the outcomes it achieves. Targeting an individual and a particular event is popular, although it accomplishes very little. It is

practical, but it does not further the cause of safety. If the root systemic problems are not discovered, the same error will be repeated in the future. The propensity of organisations to assign blame to the last individual in the chain of care rather than the corporation itself has hindered the advancement of safety.

The WHO holds a significant responsibility in drawing international attention to critical healthcare crises. By emphasizing patient safety, an issue that was previously overlooked, the WHO has been observing "The World Patient Safety Day" annually in September since 2019. The third of the United Nations' Sustainable Development Goals (SDGs) is to "ensure healthy lifestyles and promote well-being for all at all ages" (Morton *et al.*, 2017; United Nations, 2019). This involves ensuring that no one is harmed while receiving treatment in a hospital or health centre as part of a public health programme. According to the 2019 Sustainable Development Goals report, health staff are overburdened in nations where they are most needed. To strengthen primary health care and achieve health for everyone, an appropriate workforce that is motivated, supported, and available when needed is required. Unfortunately, this is not the case, and it is anticipated that an additional 18 million health workers will be required globally by 2030 to ensure healthy lifestyles for all (United Nations, 2019) as inadequate and overworked staff are factors in poor patient safety.

In 2004, WHO and the World Alliance for Patient Safety introduced two Global Patient Safety Challenges: Clean Care is Safer Care and Safe Surgery Saves Lives. These challenges aimed to minimize healthcare-associated infections and surgical risks on a global scale, generating a widespread movement and action. During the second Global Summit of Health Ministers on Patient Safety in Bonn, Germany, on March 29, 2017, the WHO Director-General announced the third Global Patient Safety Challenge, Medication Without Harm, to address medication safety. The initiative's global

objective is to decrease preventable, severe medication-related harm by 50 percent over five years. (Tetteh, 2019).

Exceptional professional leadership is critical for the successful implementation of the Medication Without Harm initiative. Furthermore, WHO seeks to bring attention to medication-related harm challenges in low- and middle-income countries. Medication errors incur a cost of approximately \$42 billion annually worldwide, which represents a mere 0.07% of the world's health expenditures (Aitken and Gorokhovich, 2012).

2.2 Safety Handoff Process

An essential task for delivering high-quality nursing care is the handoff of patients' information between nurses. To guarantee patient safety, it is crucial that the transmission of nursing care information from one team to the next is executed effectively, precisely, and promptly. The standardisation and effectiveness of the handoff process have been thoroughly researched because nursing handoff is acknowledged as a crucial component of patient safety (Staggers and Blaz, 2013). The nursing handoff is a critical moment for ensuring accountability and patient care, as it often involves essential information like the patient's diagnosis and treatment plan. (Merten *et al.*, 2017).

Handoffs of high quality are vital for safe healthcare and are widely used in a variety of clinical settings. Miscommunication during handoffs, in which is one of the primary causes of unfavourable patient outcomes that result in death or major harm, can result in unneeded diagnostic delays, patients failing to receive necessary care, and prescription errors (Australian Commission on Safety and Quality in Health Care, 2011). Effective communication is one of the primary patient safety objectives, and

handoffs must be prompt, precise, comprehensive, unambiguous, and easily understood by the recipient.

2.3 Awareness of Poor Handoff Communication and Documentation

Poor handoff communication and documentation can have a range of potentially devastating effects, including medical errors that can lead to mishaps that can cause substantial injury to patients (Maharani and Thabrany, 2018). In addition to major faults and utter errors, there are several other ways in which suboptimal care might occur.

Poorly planned or unstructured handoffs are frequently hasty and haphazard, which can result in confusion and blunders. Lengthened hospital stays, heightened morbidity, and patient dissatisfaction are all consequences of inadequate handoffs, which are commonly perceived as disorganized and hectic processes. This can result in patients being kept in the hospital longer than needed, not only due to delays but also due to increased health complications.

2.4 Nurse as A Risk Occupation in Patient Safety

Global patient safety is a crucial aspect of healthcare systems, and identifying the services provided is the initial step towards enhancing service quality (Mohseni *et al.*, 2017). Enhancing patient safety and care quality is a challenging goal for healthcare providers, but it significantly increases the likelihood of positive treatment outcomes. Proper handoff is a crucial element in ensuring safe patient transfer and reducing preventable patient harm. The patient handoff process is a critical event that impacts hospital systems and workflows, making it essential for healthcare professionals to prioritize effective communication during this phase (Till *et al.*, 2014).

Nursing handoffs occur frequently as shift changes happen two, three or more times per day, seven days a week. However, nurses typically receive limited formal

training in this essential task, which can lead to legal liability if necessary, information is not communicated. Thus, there is a need for a well-designed handoff process and proper training for nurses. Communication breakdowns are common in healthcare handoffs, and insufficient communication is often identified as a contributing factor to medical errors.

Humans are fallible, especially when confronted with the struggles of progressively speedily and complicated healthcare environments (Streitenberger *et al.*, 2006). In today's healthcare environments, it can be difficult to communicate accurate and comprehensive patient information across the spectrum of care. Traditional healthcare systems and processes have been structured to involve regular handoffs in the care given to patients, with little emphasis placed on developing accurate, efficient, and safe systems and processes for this purpose. The transfer of care during handoffs is a critical and delicate period for hospitalized patients, as healthcare providers must handle multiple competing priorities and interruptions while ensuring the accurate and comprehensive transfer of information, often under significant time constraints.

2.5 Patient Handoffs' Perception Among Nurses

Perception, according to the Cambridge Dictionary (2020), refers to a belief, thought, or opinion that is often shared by many individuals and is based on how things appear. It is the way a person thinks and feels about something.

According to Winebarger (2022), nurses believed that the handoff method assists them in identifying changes in a patient's state, ensuring nursing accountability and professional performance, and being made aware of the discharge process. In today's healthcare context, improving communication and minimizing errors is a strategic priority. The statistical proof of improved nurse perceptions of the handoff

process not only ensures safety but also enhances communication among nurses, patients, and their families, which is a promising development and aligns with the strategic goal of promoting patient safety.

Meanwhile, a study conducted by Chong *et al.*, (2020) shows that nurses had an overall mean \pm SD perception score of 5.01 ± 0.56 , indicating a positive perception of handoff interactions and support, as well as the quality of information exchanged. This improved perception is likely due to the integration of engagement and support resilience programmes that continuously enhance performance and quality assurance programmes that promote patient safety.

Loefgren Vretare and Anderzén-Carlsson (2020) have demonstrated that nurses regard patient-centred information gathering as a cornerstone for transfer accountability, ongoing care, patient safety, and care quality. The study elucidates that nurses consider this practice as a cornerstone not only for ensuring transfer accountability during handoffs but also for fostering ongoing care, patient safety, and the overall quality of care.

The findings accentuate the intrinsic link between patient-centred information exchange and the broader goals of healthcare delivery. By prioritizing patient-centricity in information gathering, nurses are able to ensure that critical medical details are accurately transmitted, thereby contributing to a continuum of care. This emphasis on patient-centeredness aligns with the broader shift in healthcare towards personalized and patient-focused approaches.

Loefgren Vretare and Anderzén-Carlsson's study thus highlights the significance of establishing patient-centred information exchange as a guiding principle within healthcare systems. This research insight advocates for the incorporation of

patient perspectives and needs into information-sharing protocols, ultimately contributing to enhanced patient outcomes, safety, and overall healthcare quality.

In the research conducted by Kilic *et al.*, (2017), nurses' attitudes towards clinical handoff were investigated, yielding insightful findings. The study revealed that nurses perceive the handoff process as a mechanism that positively contributes to the follow-up of patient information and creates valuable opportunities for acquiring pertinent medical details. The study's outcomes emphasize the role of handoffs as a bridge for ensuring the continuity of patient care by aiding in the seamless transfer of essential medical information. Nurses' recognition of handoffs as a means to facilitate comprehensive follow-up underscores their awareness of the critical nature of accurate and up-to-date patient data. Furthermore, the study highlights how nurses view handoffs not only as a process of information transmission but also as an active engagement in acquiring vital patient-related insights.

This research underscores the importance of nurturing effective handoff practices within healthcare settings. By understanding nurses' attitudes, healthcare institutions can tailor training and protocols to align with these perceptions, fostering a culture of attentive information transfer and cohesive teamwork. Ultimately, these insights can lead to improved patient outcomes through enhanced communication and information continuity during handoff processes.

According to Roslan and Lim (2016), the focus centred on nurses' perspectives regarding bedside clinical handoff. Notably, the study unveiled a dichotomy of views, revealing that nurse harbour concerns about potential compromises to patient confidentiality while also recognizing bedside handoff as a platform for interaction between nurses themselves and between nurses and patients.

The study underscores the delicate balance nurses must strike between maintaining patient privacy and fostering effective communication. The apprehension about patient confidentiality suggests that nurses are attuned to the ethical and legal considerations inherent in sharing sensitive medical information. Concurrently, acknowledging bedside handoff as a means of interaction underscores the multifaceted nature of this practice. It serves as an opportunity for nurses to exchange insights, collaborate seamlessly, and enhance their understanding of patients' individual needs.

The findings of Roslan and Lim's study illuminate the intricate landscape surrounding bedside clinical handoffs. Healthcare institutions must navigate these nuances by implementing protocols that safeguard patient privacy while encouraging meaningful interactions among care providers. This research prompts a broader discourse on how to optimize the bedside handoff process, respecting confidentiality while maximizing the potential for collaborative and patient-centred care.

In the study conducted by Kim *et al.*, (2014), the focus was on the perception of nurses regarding the handoff process. The researchers discovered that most nurses viewed the handoff process as a crucial platform for not only sharing updates but also for posing inquiries related to patient management. This insight sheds light on the multifaceted role that handoffs play in nursing practice.

The findings suggest that nurses recognize the handoff as more than a mere transfer of information; it serves as a dynamic interaction where professionals exchange essential updates on patients while also seeking guidance on how to effectively manage patient care. This multifunctional view of handoffs underscores the intricate nature of healthcare communication. It implies that the handoff process is not solely about conveying data, but also about fostering collaborative decision-making and knowledge sharing among healthcare professionals.

In essence, the study underscores the nuanced significance of handoffs in nursing practice. It highlights that these interactions are not one-dimensional exchanges of information, but rather serve as pivotal moments where nurses engage in both the provision of updates and the solicitation of valuable insights for optimal patient management. This study's insights have implications for refining communication protocols and training within healthcare settings, emphasizing the importance of recognizing the interactive nature of handoffs for improving patient care outcomes.

2.6 Predictors of Patient Handoffs' Perception Among Nurses

Performing handoffs is a critical and vital procedure for ensuring patient safety and positive outcomes, despite its high-stakes nature. However, inaccuracies in handoff performance are complex and can be influenced by various predictors. The following are the predictors of patient handoffs among nurses in the study:

2.6.1 Sociodemographic Factors and Working Characteristics

Sociodemographic factors such as age, marital status and education level are important measurable characteristics that have been included in various studies examining patient handoffs among nurses. Many researchers have utilized sociodemographic variables in their research, including age, educational level, working experience and job satisfaction (Pun, 2021; Wang et al., 2022). Further emphasis on sociodemographic factors could lead to more comprehensive and valuable findings for future research.

Organizational commitment is a crucial variable that is affected by various factors, among which working characteristics hold significant importance (Mowday *et al.*, 2013). The five fundamental components that form the basis of working characteristics are skill variety, task identity, autonomy, task significance, and

feedback, as postulated by Hackman and Oldman (1975). These characteristics were carefully selected in line with the objectives of the research being conducted.

Numerous studies have incorporated working characteristics in their evaluations, including job rank, monthly income, and working time, as they serve as motivational factors for employees. It is noteworthy that the selection of these working characteristics was based on the specific goals of the respective studies.

2.6.1(a) Age

One study done in Kuala Lumpur, Malaysia suggests that age plays a critical role in shaping the perception of handoff. It implies that nurses aged 30 years and above tend to have better handoff performance, which is the ability to effectively and efficiently transfer the information and responsibility for patient care during handoff, than their younger counterparts (Chong *et al.*, 2020). This study was limited to one tertiary care facility in Kuala Lumpur.

The study also found that there might be some correlation between age and experience, as nurses with more years of experience may be more skilled at handoff due to their exposure to more handoff situations over time.

2.6.1(b) Working Experiences

Nurses with greater work experience exhibited more positive attitudes towards handoffs, as they displayed a significantly higher tendency to voice their concerns during the handoff, showed greater focus on patient safety, and had a better understanding of when responsibility for the patient's care was transferred (Gu *et al.*, 2012). As work experience accumulates, nurses' insight and attention tend to become more favourable, with lengthier tenure possessing heightened proficiency and abilities regarding patient handoffs. It indicates that extended experience plays a role in shaping positive attitudes toward the conveyance of information and responsibility.

2.6.1(c) Educational Level

Education level is considered a determinant of employee quality. Those with higher education usually occupy higher positions and are more responsible, resulting in greater dedication to the organization. Therefore, a higher level of education is likely to be associated with a higher level of commitment (Amangala, 2013). The handoff perception appeared to be greater among nurses that obtained post basic or degree compared to their colleagues with diploma as the highest education level (Chong *et al.*, 2020). This variable gives the impression of being important for the advantages gained from the study, in addition to being a vital variable for the objectives of the study.

According to a recent study, it has been found that nurses who have graduated from a 4-year programme have been evaluated to possess better handoff skills than those who have completed other levels of education. It is believed that the nurses who have completed a 4-year programme are better equipped to handle complex patient scenarios and are more capable of efficiently communicating important patient information during handoff. These nurses may have had more extensive training and exposure to various healthcare situations during their education, which has honed their clinical and communication skills. The study suggest that nurses who possess a higher level of education may provide better quality care and outcomes for patients (Kim *et al.*, 2021).

2.6.1(d) Department

The type of department that nurses work in has been shown to have a significant impact on their perception score of handoff evaluations. In certain departments, nurses may experience a higher level of acuity and complexity in patient care, which can increase the difficulty of effective handoff communication. Moreover, the culture and practices of different departments can also affect nurses' handoff perception scores. It was found that nurses from the Paediatric department exhibited a more favourable

perception of handoff practices compared to nurses from other departments, particularly in their general perception and the quality of information received (Chong *et al.*, 2020).

2.6.1(e) Handoff Duration

One study done involving 108 nurses at two tertiary teaching hospitals in Chitwan district, Nepal highlights that there was a substantial correlation between the duration of handoff and nurses' perceptions of it. Specifically, when handoff takes longer, nurses tend to perceive it more positively because they are better able to communicate and convey essential information about their patients' conditions and treatment requirements. The study suggests that effective handoff requires sufficient time for nurses to transfer information, clarify doubts, and coordinate patient care. Shortening the duration of handoff may lead to incomplete or inaccurate transfer of information, which could adversely affect patient care (Koirala *et al.*, 2019).

The study implies that the duration of handoff plays a crucial role in shaping nurses' perceptions of it, with longer handoff durations being associated with better perceptions due to improved communication and transfer of essential information about the patients.

2.6.1(f) Location for Handoff

The implementation of bedside nursing report was associated with improved perceptions of nurse-to-nurse communication, patient involvement in care, and staff accountability by both patients and nurses. Patients reported better communication among nurses, greater involvement in their own care, increased participation in shift report, and improved awareness of who their nurse was. On the other hand, nurses perceived enhanced accountability, increased patient involvement in care, and improved patient safety outcomes resulting from the implementation of bedside nursing report (Sand-Jecklin and Sherman, 2014).

The findings highlight the benefits of implementing bedside nursing report as a tool to enhance communication and engagement between nurses and patients. By providing patients with a more active role in their care, it can lead to greater satisfaction and improved patient outcomes. Furthermore, it can promote a culture of accountability among nursing staff and improve the overall quality of care provided.

2.6.1(g) Availability of Handoff Guidelines

The perception score for handoff communication was notably higher in the presence of established guidelines, compared to situations where guidelines were not available. Nurses often employ their own methods of handoff communication, which can include the use of various abbreviations (Yu *et al.*, 2018). Therefore, it is imperative to establish a standardized process and guidelines for handoff communication.

Standardized handoff guidelines promote the inclusion of critical patient information and facilitate efficient transfer of patient care responsibility. By providing clear and concise communication, they can improve patient safety and care quality. Moreover, they can help to mitigate confusion and misunderstandings that can arise due to variations in communication styles and terminology.

2.6.1(h) Formal Training

One of the identified factors associated with poor handoff perception was lack of formal training. One study done in 2012 reported that nurses perception were significantly more positive among nurses that had formal training regarding how the handoff worked, and the skills and knowledge were the added values towards successful care of patient safety (Gu *et al.*, 2012).

2.6.1(i) Satisfaction with Current Handoff Process

The satisfaction of nurses with the current handoff process has been shown to have a significant impact on their evaluation of handoff communication. Nurses who reported satisfaction with the current handoff process have been found to have higher handoff perception scores compared to those who did not express satisfaction (Kim *et al.*, 2021)

The importance of nurse satisfaction with the handoff process lies in the fact that it reflects their perception of the method's effectiveness in facilitating the transfer of patient care responsibility. When nurses are satisfied with the process, it may suggest that they feel more comfortable and confident in the handoff process, resulting in better communication and transfer of information.

2.7 Conceptual Framework

Based on the literature review, there were multiple factors could affect patient handoff among nurses. These factors include sociodemographic characteristics such as age, gender, marital status and educational level. Additionally, working characteristics such as, work experience, department/ward unit, years in the current department, handoff duration, nurse-patient ratio, location for handoff, availability of handoff guidelines, receiving in-service formal training on handoff and satisfaction with the handoff process can impact the quality of handoff. Patient-related factors like the type of patient care, health service factors such as understaffing, workload, lack of standardization, stress, and fatigue, and healthcare provider factors like knowledge, attitude, communication, and teamwork are also significant factors affecting patient handoff, however all these factors not included in the study.

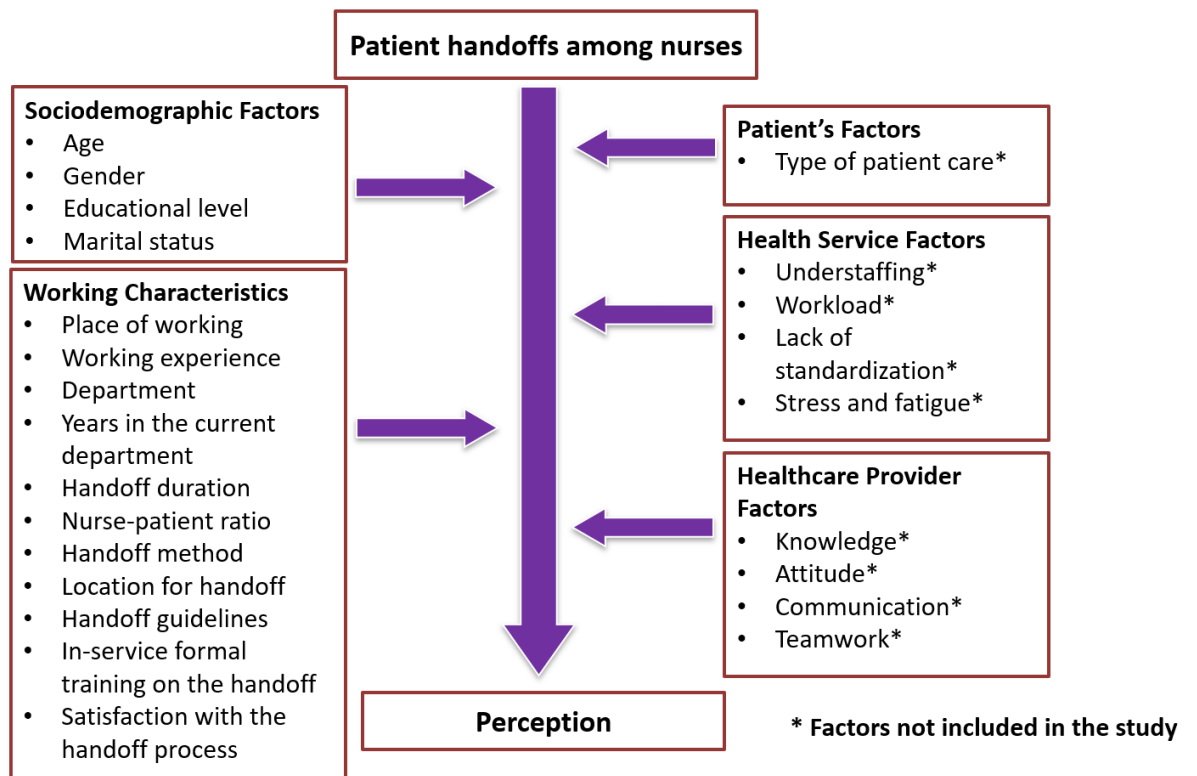


Figure 2.1 Conceptual Framework on Predictors of Patient Handoffs' Perception Among Nurses in Public Hospitals with Specialists in Kelantan