FACTORS INFLUENCING PATIENT WAITING TIME IN EMERGENCY DEPARTMENT OF KHUNYANGU SUB - COUNTY HOSPITAL, KENYA

Prudencia Yawetsi Shisundi

A Thesis Submitted in Partial Fulfillment of the Requirements for the award of Degree of Master of Science in Advanced Nursing Practice (Critical Care Nursing) of Masinde Muliro University of Science and Technology

October, 2022

DECLARATION

This thesis is my original work prepared with no other than the indicated sources and support and has not been presented elsewhere for a degree or any other award.

Signature…… Date……..

Prudencia Yawetsi Shisundi

Reg. no: HNR/G/50/2014

Approval by supervisors

This thesis has been submitted for examination with our approval as University supervisors.

Signature ……. Date…….

Dr. Damaris Ochanda,

Department of Nursing Research, Education and Management

Masinde Muliro University of Science & Technology

Signature ……. Date…….

Prof. Elijah Nyangena,

Department of Nursing,

University of Kabianga.

DEDICATION

To my dearly beloved son, Wayne Kaka, my Father Gervase Shisundi Makani, my Mother Noel Achayo and all the people that consider emergency department in the hospitals an important section of our health sector.

ACKNOWLEDGEMENTS

It is not easy to put together such an academic work without any help. While compounded with the great love and care that the lord has given me, I wish to sincerely acknowledge with gratitude the support of many friends, relatives and colleagues who in one way or the other have enabled me to complete this work.

In this spirit, I want to acknowledge my supervisors Dr. Damaris Ochanda of the Depart ment of Nursing Research, Education and Management Masinde Muliro University of Sc ience and Technology and Prof. Elijah Nyangena of the Department of Nursing Universi ty of Kabianga for the great effort and unequaled advice that they rendered me throughou t the process of research, writing and final reading. Without them, this thesis would not b e like this. I also want to thank the workmates and management of Khunyangu sub-Coun ty Hospital who gave me time and cooperation needed to do research and finish this thesi s.

I also want to acknowledge close friends, Brothers and sisters who gave me the encouragement to keep going when the time seemed hard. People who have helped me may form yet another paper if I am to acknowledge you one by one, I will therefore take this chance to say that you are all acknowledged for your support towards the completion of this thesis.

ABSTRACT

Waiting time continues to be an essential indicator of the quality of health services. A hospital's emergency room is the most important portion of the facility. For patients who have an immediate need for hospitalization, a delay in admission frequently worsens the patient's health and may endanger their lives. Overcrowding and long wait times have been increasingly common in the Emergency Rooms of western countries in recent years. The large average number of patients seen per day in the Emergency Room presents unique difficulties for emergency care in developing countries. According to the Quality Improvement Team reports and exit interviews, patients at the Khunyangu hospital frequently expressed frustration with the length of their waits in the emergency department. Objectives of the study were to examine individual factors influencing patient waiting time at the emergency Department, to assess health facility factors influencing patient waiting time at the Emergency Department and to assess healthcare workers factors influencing patient waiting time at the Emergency Department of Khunyangu sub-county Hospital. Descriptive cross-sectional research design guided the conduct of this study. Data collection was conducted on 191 patients and healthcare workers over a period of four weeks using an interviewer administered pretested structured questionnaire. Both descriptive statistics and inferential statistics were used for data analysis. To establish associations between the independent variable and dependent variables, correlations and cross tabulations were used. Analysis of variance (ANOVA) was used to determine the influence of independent variables on the dependent variable. The findings demonstrated an R-squared value of 0.368. It was observed that there was a weak positive correlation that was statistically significant ($r=.281$, $N=191$, $p=.000$) between availability of health care workers at their work stations and waiting time. There was a weak positive correlation that was also statistically significant ($r=.228$, $N=191$, $p=.002$) between communication on waiting time in areas where there was no health worker to attend to the patient and the waiting time. In conclusion, the influences on waiting time are varied and interconnected. By implementing suitable workflow procedures, enhancing communication, and boosting equipment/supply availability, many of these problems could be mitigated. The findings can be utilized to set waiting time guidelines and enhance emergency department waiting. This study advises that hospital administration address the identified sources of delay in order to provide patients with timely care. Additionally, health care professionals should be present at their work stations. Additional research is required to evaluate the emergency department's impact and utility.

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LIST OF ABBREVIATIONS AND ACRONYMS

A&E	Accident and Emergency
ATS	Australasian Triage Scale
BP	Blood Pressure
CCC	Comprehensive Care Centre
DHIS	District for health information system
ED	Emergency Department
ESS	Emergency Symptoms and Signs
HR	Heart rate
IHR	Irregular Heart rate
IOM	Institute of Medicine
IRB	Institutional Review Board
KSCH	Khunyangu Sub County Hospital
QI	Quality improvement
QIT	Quality Improvement team
WIT	Work Improvement team

CHAPTER ONE

INTRODUCTION

1.1 Overview

This chapter describes the background, statement of the research problem, purpose and objectives of the study. It also presents the research questions, justification and the theoretical framework.

1.2 Background to the Study

Waiting times in the Emergency department (ED) are a problem in every healthcare system throughout the world. One of the most common complaints from emergency department visitors is the lengthy wait periods. Patient satisfaction may drop significantly if waiting times are prolonged, maybe because of increased frustration and a diminished feeling of agency on the part of patients. In addition, disorganization of the process and disdain for waiting can be shown in excessively long waits, which can increase anxiety and stress levels for patients and their loved ones (Fontova-Almató et al., 2019). There has been a huge increase in the number of patients entering EDs at any time of day due to the combined effects of consistent expansion of ED visits due to ageing of the population, fewer inpatient beds, and stricter cost-containment regulations (American College of Emergency Physicians, 2016). When the need for care in an emergency department exceeds the available resources, overcrowding occurs (McCarthy et al., 2008). Emergency department patient flows and the quality of care are impacted by discrepancies between ED capacity and the demand for patient triage, diagnostic pictures, laboratory tests, and specialty consultations (Yarmohammadian et al., 2017). Wait times, treatment delays,

ambulance rerouting, and financial losses all rise when emergency departments are over crowded. Overcrowding and service delays may also have unfavorable effects on ED staff, raising the probability of mistakes made by humans and the likelihood of staff burnout.

Because of the huge variety of patients who show up at hospitals every day, emergency medicine is one of the busiest fields. Overcrowding and extended wait times in the emergency department are a worldwide concern that is having a negative impact on patient satisfaction and outcomes.

The Emergency Room is the most important element of any healthcare facility. Patients who present themselves at the Emergency Department typically have to wait for some time before they may receive medical attention. The triage process required for hospital admittance, patient "boarding" (waiting for a bed), a lack of health care staff, and a surge in emergency patients as a result of local accidents and disasters all contribute to the length of time spent waiting. After analyzing data from over 20 million patients who attended Ontario emergency rooms over the course of 5 years, Fontova-Almató et al. (2019) concluded that waiting times in the ED are associated with an increased risk of mortality and readmission to the hospital. They found that a reduction in emergency service waiting times from two hours to one hour might save the lives of 150 people every year (Muro et al., 2016). Hospitals should prioritize minimizing patient wait times because delaying treatment of patients who need immediate medical care due to excessive wait times at the ED. Overcrowding in the emergency department (ED) occurs when the number of patients waiting for treatment exceeds the capacity of the facility, measured in terms of beds and/or staff. Patient dissatisfaction, increased mortality, and subpar results have all been linked

to excessive ED wait times (MOH, 2016).

According to a study conducted by Newcomb et al., (2017) on 11,352 ambulatory patients of a private medical centre system in the United States, patient satisfaction with waiting time was influenced more by the quality of interactions between patient-care providers than by the actual length of time spent waiting. The emergency department is the first point of contact in a health care organization, handling accidents, injuries, and acute illness. The ED must be open 24/7/365 and ready to respond immediately and appropriately to any circumstance deemed life-threatening. Adding more EDs helps guarantee everyone, regardless of income, has access to essential medical care. Time spent from patient admission to triage, from triage to physician visit, from physician visit to examination and medical treatment, and finally, from physician visit to patient discharge, are all important benchmarks for gauging the efficacy of emergency care and should be factored into quality-of-care evaluations using a time-measuring indicator (Newcomb et al., 2017). No matter the patient's reason for visiting the ED, staff members work hard to treat them as quickly as possible.

Emergency departments are distinct because the vast majority of patients who go there do not have an appointment and must be evaluated right away. There are occasions when quick decisions and prompt action are required for medical care (Thompson et al., 2016). The world over, emergency rooms are consistently overflowing with patients. Public sector emergency departments in South Africa are under immense pressure because to high patient volumes, inadequate staffing levels, and lengthy wait times, all of which contribute to the global epidemic of ED overcrowding.

According to research, hospitalized patients spend a significant amount of time waiting for the care they need from doctors, nurses, and other medical staff. The total amount of time a patient has to wait to be seen by a medical professional is known as the "patient waiting time," and it is calculated by adding the waiting times for each department together (Ibid).

The quality of medical care can be assessed by observing how smoothly patients are moved from one area to another, a phenomenon known as "patient flow." Fontova-Almató et al. (2019), states that patient flow encapsulates the healthcare system's capacity to swiftly and efficiently serve patients at all points throughout the continuum of care. Negative effects on patient outcomes can result from even the smallest delays in the delivery of care, which can be caused by any halt or delay in the process. At least 90% of patients should be seen within 30 minutes of their planned appointment time, according to the Institute of Medicine (2016). However, multiple studies have demonstrated that this is not the case in most underdeveloped nations, where patients sometimes wait two to four hours in emergency rooms before being seen by a clinician.

The length of time a patient must wait in the emergency department is often used as a proxy for the quality of care provided. Overcrowding of emergency departments is a growing concern in hospitals all over the world due to high wait times. A number of negative outcomes can result from this situation, including discontent among medical staff, people leaving without being seen, and even physical violence. Some researchers have advocated operating or lean management strategies to help hospital administrators deal with the third and fourth sets of factors influencing ED wait times (Lungu et al.,

2019). The Kenyan government acknowledges that despite significant quantitative improvements in health care services, there are nevertheless serious inadequacies in emergency departments that degrade patient outcomes, such as the amount of time patients must wait to obtain health care.

The emergency room at Khunyangu Hospital has significant holes, as detailed in the hospital's 2016 audit report, which increase patients' wait times and negatively impact the quality of care they receive. Because of this, the researchers at Khunyangu hospital set out to investigate what causes patients to have to wait for treatment. In particular, the length of time a patient spent waiting at various sites of care (several sections) and the factors that affected that wait were quantified in this study.

In the past, researchers have relied on the assumption of a patient flow to define queueing features based on their own prior expertise. Senderovich et al., (2017) use predictors that incorporate patient information, such as prior visits and other associated information, with congestion measurements, such as the present number of patients and recent lengths of stay. The proposed prediction method outperformed the state-of-the-art methods. Unfortunately, due to the nature of healthcare systems or the quality of the data collection, attributes that indicate the current condition of the ED, and thus reveal the crowding level of the ED's operations, are sometimes absent or extremely difficult to extract automatically (Ferreira et al., 2015; Senderovich et al., 2016). Process Mining is a novel technique that can solve this problem by mining event logs for details about running processes. So far, Process Mining has been successful in uncovering, monitoring, and analyzing functional processes by gleaning insights from event logs (Dansky & Miles,

2017). The real patient-flow and current situation (e.g., queueing and waiting times) of the ED can be uncovered by process mining (Muro et al., 2016).

1.3 Statement of the Problem

Locally and internationally, considerable attention has been paid to the topic of patient wait times in various health care settings. On the other hand, further research should be conducted on the arrival time of patients and the length of time required to access various services at emergency departments. Information on patient wait times in a facility facilitates the making of informed decisions to reduce patient wait times and enhance patient outcomes. Dansky and Miles (2017) discovered that the average wait time for patients in the Emergency Department (ED) is strongly associated with service delays and poor outcomes.

The everyday presence of lengthy patient lines in hospital Emergency Departments is further evidence of the extended wait times for services. In an effort to avoid lengthy ED wait times, some patients arrive at the facility very early in the morning, typically before the official opening time (for those not operating 24 hours). Unfortunately, some patients do not receive the requested health treatments, while others receive a comprehensive package of services quite late in the day. Waiting time is a crucial factor in assessing the quality of care and can be a useful instrument for gauging patient satisfaction. Prior research has demonstrated a correlation between a lengthy waiting period and low patient satisfaction (Saether et al., 2020). Attempts to alleviate the problem of waiting time in emergency departments necessitate an investigation of the reasons generating increased waiting time. Numerous causes of high wait times and overcrowding in the emergency

department have been recognized and recorded. A research conducted at Kenyatta National Hospital's Emergency Department revealed that 33.7% of respondents experienced delays while waiting for a physician's evaluation. Therefore, minimizing wait times has become a crucial concern not just for patient satisfaction but also for enhancing healthcare quality (Sther et al., 2020).

Exit interviews conducted in 2016 at the emergency department of Khunyangu hospital revealed that patients' overall satisfaction with the facility's outpatient services was closely related to their satisfaction with waiting time (Khunyangu Health Facility Report, 2016). However, few studies have evaluated the length of time patients wait and examined any empirical correlations between patient waiting time and outpatient care. The Quality Improvement Team has documented recurrent complaints from patients seeking care in the Emergency Department of Khunyangu Hospital regarding wait times. The comments written in the complaints book at the customer service desk and the reports generated from the suggestion box indicated that clients and patients seeking services in this facility were dissatisfied with the services, particularly the wait times in the emergency department's various sections (Khunyangu Health Facility Report, 2016).

Comparable research on ED wait times have concentrated on regions where integrated health care systems were already in place, unlike Kenya, where patients attending Khunyangu hospital in Busia County lack a primary care physician. In addition, overseas studies may not necessarily be appropriate to our practice environment in Kenya because to variances in context, illness pattern, and culture. Therefore, the purpose of this study was to investigate and document the factors that influence the waiting time for patients seeking care at Khunyangu Hospital's emergency department.

1.4 Broad Objective

To investigate factors influencing patient waiting time at the Emergency Department of Khunyangu Sub County Hospital.

1.5 Specific Objectives

1. To examine individual factors influencing patient waiting time at the Emergency Department of Khunyangu Sub – County Hospital.
2. To assess healthcare workers' factors influencing patient waiting time at the Emergency Department of Khunyangu sub-County Hospital.
3. To assess health facility factors influencing patient waiting time at Emergency Department of Khunyangu Sub – County Hospital.

1.6 Research Questions

1. What individual factors influence patient waiting time at the Emergency Department of Khunyangu Sub – County Hospital?
2. Which healthcare workers' factors influence patient waiting time at the Emergency Department of Khunyangu sub-County Hospital?
3. Which health facility factors influence patient waiting time at Emergency Department of Khunyangu Sub – County Hospital?

1.7 Justification

The ED is the primary access point for patients and members of the community to all medical facilities. Patient satisfaction with the amount of time they spent in the emergency room is reflective of the level of treatment provided throughout the hospital. Many of the

existing research in this field have relied on patients' own accounts of how long they had to wait for care, which raises concerns about the potential for bias in the collected data. In addition, most of the research on patient wait times at Kenya has been done in private hospitals or outpatient centers.

This research was motivated by the belief that the majority of these difficulties are amenable to management through the application of the Donabedian model to the analysis of waiting time performance indicators like the average arrival rate of patients, the average service rate of patients, and other factors contributing to long waiting times. Various stakeholders, including facility managers and CEOs, would benefit from this information as they devise strategies to reduce patient wait times, especially in the Emergency Room, across the healthcare system. Improving quality of care and patient outcomes is directly tied to reducing unnecessary wait times in healthcare settings like hospitals. Finally, this research will help to strengthen local knowledge in this area, which in turn will improve decision making and have an impact on policy.

1.8 Limitations of the Study

In this study, a descriptive cross-sectional design was utilized to collect data at a single moment in time. Consequently, the conclusions of the study cannot be generalized. This issue was overcome by employing a representative sample of the target population. Second, the sample size consisted of only 191 cases. The researcher addressed issue by employing a systematic sampling procedure to choose study participants, so ensuring that all study participants had an equal chance of being included in the study. Lastly, the single location may provide findings that are context-specific.

1.9 Conceptual Framework of the Study

Donabedian's input-process-output model served as the conceptual basis for this study's framework. Patient factors (input), operational or procedural factors (process), hospital factors, and waiting time (output) that have an effect on the quality of care. Patient-related demographic and clinical factors will comprise the input level.

The Donabedian model is a conceptual framework for analyzing health services and assessing the quality of healthcare. According to the model, information regarding the quality of treatment may be extracted from three categories: "structure," "process," and "outcomes." Triage is an intervention used to choose patients who are gravely ill and move them to the front of the line. From the patient's perspective, the number of patients at any given moment mostly affects the work load, causing the majority of lines. External factors are hospital-associated factors that are intimately related to the process/operational factors.

Depending on the policies that govern them, every hospital handles patients differently. In this instance, the design of the facility is influenced by the (direct or indirect) movements of patients, the distance between portions, and the accessibility of service points. There are also amenities shared with other departments. This would raise demand and the number of people obtaining care, resulting in higher wait times.

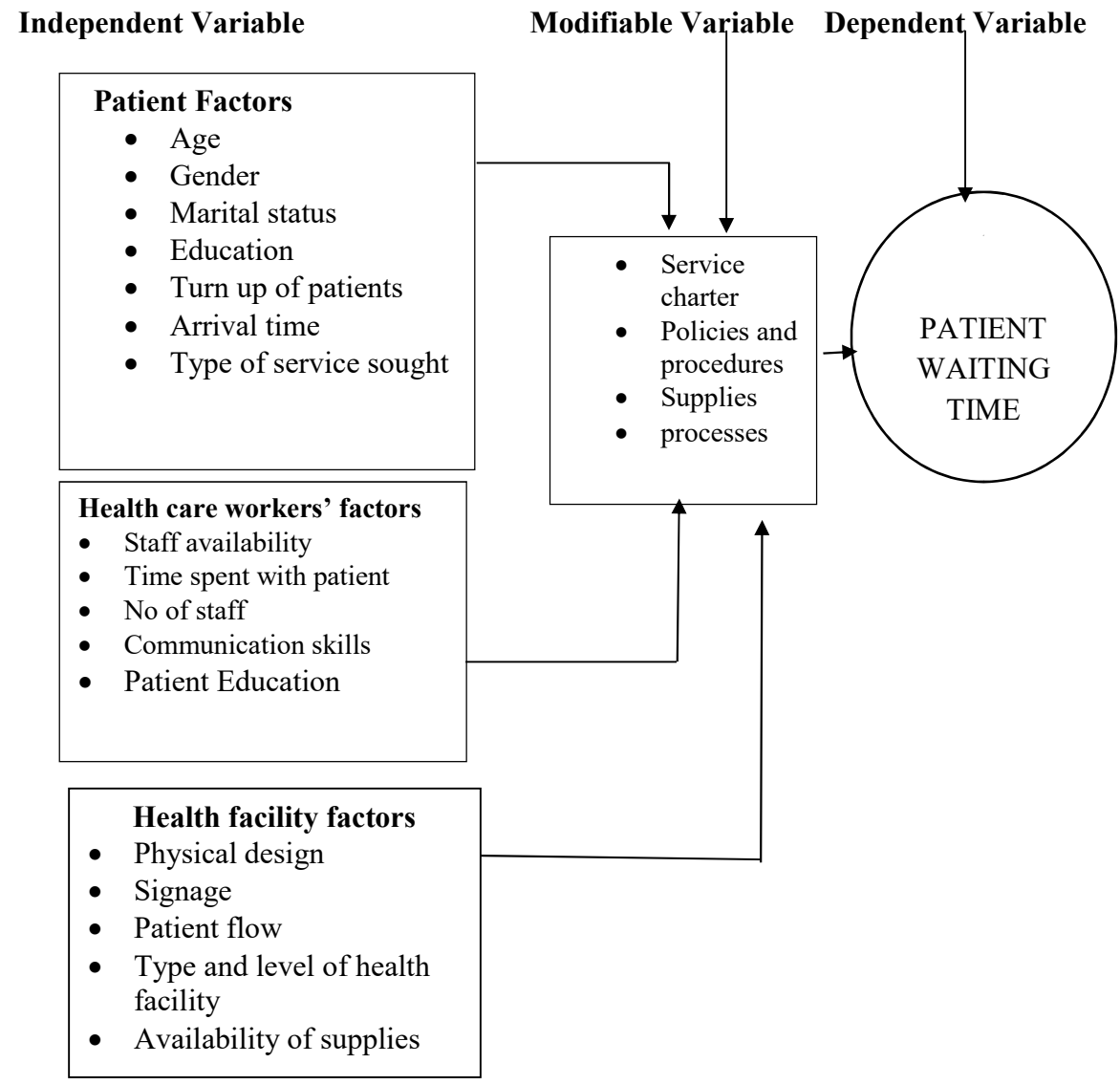

Figure 1.1: Conceptual framework of the study

1.10 Operationalization of Variables

Actual service time Describes the entire amount of time a patient spent receiving treatment during their hospital stay. This total represents the cumulative time the patient spent getting all health care services, from the commencement of the first service until the end of the last service.

Actual visit duration is the total amount of time a patient spent in the hospital, calculated from the moment they checked in to the moment they were discharged after receiving all necessary care.

Actual waiting time Refers to the total amount of minutes a patient waited during his or her hospital appointment. This figure indicates the total amount of time the patient waited in line for all health care services, from the moment of registration until the moment of receiving the care service, or from the conclusion of one care service until the beginning of the next.

Accessibility to services refers to how easy it is to use the services, including how long you have to wait, how complicated the process is, and when you can get help.

Arrival time This is the time at which the patient seeks treatment by presenting to the evaluation center.

Departure time	This is the point at which the patient leaves the assessment center, with or without further hospital admission.
Emergency care	Hospital care, both in and out of bed, that is absolutely crucial to the patient's survival and recovery from a catastrophic health crisis.
Patient	One who is in the process of getting, or has plans to get, medical care.
Patient flow	Illustrates the steps patients take from the moment they enter a clinic to the moment they are either released by a medical staff member or leave voluntarily on their own will.
Patient satisfaction	Described how a person felt after receiving care at a hospital.
Patient Waiting Time	Total waiting time, which includes all service points' wait times combined together. Time spent in various service delivery sites, such as the laboratory, radiography, and consultation, is included.
Service point	This refers to the numerous locations within the clinic where patients receive specialized services.
Sub county hospital	Health care delivery jurisdictions within a county

Total waiting time	That's the aggregate of all the wait times in each individual section.
Waiting time	The sum of all the time a patient must wait before receiving service, broken down by individual departments. This research defined "waiting time" as the amount of time a patient waited to obtain assistance at each stage of their emergency department visit.

CHAPTER TWO

LITERATURE REVIEW

2.1 Overview

This chapter discusses patient waiting times in the emergency department, Arrival, Waiting Line or Queue, Queue Discipline, Service Mechanism, Single-server, Multiple-phases System, Capacity of the System, Departure. In addition, there are Factors influencing Patient Waiting Time, Type of service sought by patients, Arrival time of patients, Physical design, Staffing, Health Worker factors – Specialization Level of Education, Working Hours, Experience and conclude with the summary.

2.2 Emergency Department

There has been little consideration of the fact that EDs now account for one-third of all health care spending as primary entry points for patients in need of care. Hospital admissions from emergency departments increased by 50% between 1993 and 2006. (from 11.5 million to 17.3 million). Consequently, the percentage of inpatient admissions that began in the ED rose from 34% to 44%. (Truong et al., 2019).

Despite the obvious need of emergency rooms, many hospital administrators view their ED as a "loss leader" (Kyriacou et al., 2016). Accounting practices that assign inpatient income to the admitting service, rather than the department where the admission originated, contribute to this misconception. The financial burden of uncompensated treatment that EDs are legally compelled to provide also plays a role. Treatment is given immediately if a patient's life is in danger or is about to be in risk. The first step is an assessment of the patient's immediate medical needs. Patients who are classified as urgent

or emergent receive priority care in the ED. Patients are seen by professionals from a wide range of medical fields, therefore they may have to wait significantly different amounts of time for each specialty.

In the healthcare system, emergency medical services (EMS) and out-of-hospital care play a crucial role by treating patients in need of immediate attention and transporting them to hospitals or other specialized facilities. Improving emergency treatment is a pressing issue on a global, as well as a national, scale. Patient safety is a priority in Finland, however there have been few studies of emergency treatment. According to Finnish law, an EMS system consists of a variety of non-hospital services coordinated by hospital districts and designed to determine whether or not a patient requires immediate admission to a hospital for acute care (Kyriacou et al., 2016). All risk management and safety planning in health and social service companies must begin with patients and the provision of safe, high-quality treatment, as per the Ministry of Social Affairs and Health Decree.

Delays in health care supply are costly not just in terms of direct expenses, but also in terms of the potential costs of decreased patient satisfaction and bad outcomes; hence, waiting time is an essential factor of service quality.

Health care systems have increased their focus on resource efficiency in response to the pressure to provide high-quality care while working with a constrained budget. Long wait times in the Emergency Room can be frustrating for both patients and their loved ones, and they can have a negative impact on the efficiency of clinical services.

Therefore, reducing delivery times to maximize patient access and use is a critical operational challenge in the healthcare industry. According to studies, overcrowding in public hospitals' emergency rooms causes patients to wait longer to be seen or to be referred to private health institutions, decreasing public access to healthcare and raising the operational cost to hospitals.

There are a number of outpatient units within the hospital, and the patients who use them see doctors at different times. One element influencing the use of health care services is the length of time a patient must wait before being seen. Over the course of three months, most patients with sepsis and AR are treated in emergency rooms, where they receive immediate attention and where management decisions are most important. They have to deal with an influx of new patients, a rise in the severity of existing patients, and a shortage of beds in the intensive care unit and on the ward, all of which might slow down the adoption of evidence-based methods. There is a correlation between these wait times and poor outcomes after admission.

Truong et al. (2019) conducted an observational research of adults who regularly visit an ED at a set time of day and found that patients view lengthy waits for care as a deterrent. Patient wait times are becoming more of a selling point for clinics in today's health care market, where competition is fierce. Waiting time, measured from the moment a patient or client enters a hospital's waiting area or consulting room to the moment they leave, is a major factor in determining the level of satisfaction they have with the care they received (Ferreira et al., 2015; Senderovich et al., 2016b). Existing customers' loyalty might be affected by wait times as well. A patient who is happy with their service is more likely to

think that the company can meet their health care expectations and needs. Annually, emergency rooms in the United States admit about 3 million people who are suffering with sepsis and/or acute respiratory failure (ARF). These people are some of the most expensive for the American healthcare system because they require intensive care unit admission, have a high chance of death, and require lengthy hospital stays. Waiting times to visit a doctor are connected with patient satisfaction, according to a study conducted in the United Kingdom (Spaite et al., 2002). However, another study indicated that patients deserted outpatient departments in large numbers due to wait times (Senderovich et al., 2016a).

This study sought to examine patient waiting time and factors influencing waiting time in outpatient departments since such an investigation is essential for public understanding of the health care system's operational environment. Hospital managers might use the study's findings to improve their facilities' human resources, logistics, infrastructure, and other internal processes. This would help ensure that patients receive high-quality care.

Patients with potentially life-threatening conditions, such as various types of head injuries and heart failures, are funneled through EDs where they receive prompt and efficient diagnosis, urgent attention, primary care, and inpatient admission around the clock, every day of the year. Due to their increased significance, EDs are now often referred to as the "backbone" of the healthcare safety net (Hitti et al., 2020). Finally, EDs serve a significant societal function by providing care to those with and without health insurance. More than half of all hospital activity occurs in outpatient settings, further demonstrating their significance in the healthcare system. As a "care hub," it also serves as a meeting place for locals and medical professionals.

However, even in affluent nations, some major issues have become evident in EDs and must be addressed completely to ensure that early mortality and complications are low, patients are satisfied with their care, they receive it promptly, and they have a minimal chance of developing a long-term morbidity (Omidi, M et al., 2017). As a result, hospitals are under more financial duress than ever before, and their earnings are narrowing as healthcare prices rise. Further exacerbating the negative consequences indicated above and placing EDs under constant strain is the predicted steady and significant increase in demand for ED services in the near future (Ortiz-Barrios et al., 2019). Thus, there is an immediate requirement for vigorous enhancements via the effective utilization of in-patient resources and the introduction of operational adjustments in healthcare service.

2.3 Waiting time

Waiting time is the amount of time a patient must wait in the emergency room before being seen by a doctor. The length of time a patient has to wait while receiving treatment is a key performance factor for healthcare facilities. Patient wait times are an important indicator of satisfaction with healthcare providers. Long wait times are seen as an impediment to service access by patients. It's stressful for both the patient and the medical staff if they have to wait around for too long. Patients will value the length of their wait time more than the expertise of their healthcare providers. Few statistics are available on ED waiting times across Iranian state hospitals providing care for patients, however Karstensen and EK (2019) found a standard average time between the triage and treatment phase in a study they carried out at one of Tehran's hospital sites. Karstensen and EK (2019) conducted research and concluded that having an emergency resident doctor on

staff and having a committee to determine patients' illnesses were both important factors in the length of time patients had to wait for treatment in the Emergency Department at Tehran Firoozgar Hospital.

Excessively long wait times are sometimes interpreted as a sign of insufficient resources. However, research has failed to find a correlation between waiting times and hospital resources alone, and countries that invest in increasing output and decreasing wait times generally report little lasting effect. There does not appear to have been an increase in the number of patients waiting in Norway, and the annual number of new referrals to secondary healthcare has been rather consistent over the last few years (Karstensen & EK, 2019). A steadily growing waiting list is consistent with insufficient resources and consistent referrals. Consequently, the current state of affairs is indicative of adequate capacity to satisfy demand.

Waiting times may also be affected by factors besides capacity, such as patient logistics, cumbersome booking procedures, and inefficient utilization of resources (Naiker et al., 2018). Appointment allocation rules in secondary healthcare may have a larger impact on wait times than was previously thought.

Most of the research done on patient and physician wait times in hospitals has focused on outpatient settings. Studies of this nature have indicated that consultation and waiting times are affected by a variety of factors, including the patient's perception of the wait time, the patient's willingness to wait, the patient's appointment status, the patient's status as a new outpatient, and so on. (Truong et al., 2019).

Budgetary allocations and ability for provision of excellent health care to suit the demands of patients, including adherence to standard patient waiting time, are often inadequate in developing nations like Kenya, Uganda, Tanzania, Ethiopia, Somali, Zimbabwe, Malawi, Nigeria, and Ghana. This is partly attributable to low incomes, stagnant economies, and rising populations, all of which have a negative impact on health care spending and delivery. While several nations in Sub-Sahara Africa are working to put in place sustainable health care finance policies and strategies in response to rising demand for health services, few have been successful so far (Ferreira et al., 2015; Senderovich et al., 2016b). Time spent from patient admission to triage, from triage to physician visit, from physician visit to examination and medical treatment, and finally, from physician visit to patient discharge, are all important benchmarks for gauging the efficacy of emergency care and should be factored into quality-of-care evaluations using a time-measuring indicator (Spaite et al., 2002).

Kenya's health care infrastructure has expanded greatly since the country gained independence in 1963. The government's ability to offer adequate health services has been overwhelmed by rising healthcare costs and an ever-growing patient population. However, the Government of Kenya, through the Ministry of Health (MOH), is dedicated to ensuring that the people of Kenya have access to quality health care that doesn't break the bank (Ortiz-Barrios et al., 2019). It was subsequently mandated that public institutions decentralize these services by instituting quality assurance systems at their facility to assure continual quality improvement to a level that satisfies their clients' or patients' needs, such as by having an allowable patient waiting time. The vast majority of people

in many nations still have restricted access to high-quality health services, despite continual efforts to improve the system (Karstensen & EK, 2019). Because of the shortage of personnel and materials, there is a significant risk to the health and safety of the mothers and their newborns due to the unsanitary environment. Patients were forced to wipe down hospital beds and wrap their newborns in their own clothes or filthy linens due to a paucity of hospital bed linens and a lack of cleaning between deliveries. According to Senderovich et al. (2016c), the changing cultural, economic, demographic, social, and technical climates have a significant impact on patients' evolving requirements. Only by constantly evaluating these demands through patient satisfaction surveys can health systems undergo continual change to meet the priorities of consumers and provide them with access to high-quality health care.

The length of time a patient had to wait for treatment was also linked to their impressions of non-medical parts of their care. In one study by Spaite et al. (2002), they found that patients who waited shorter amounts of time were more likely to view the staff as friendly and kind. Longer wait times, according to research by Chu et al. (2019), can make patients doubt the doctors' abilities and cause them to lose faith in the healthcare they receive. Xie and Calvin. (2017) discovered that the length of time a patient had to wait before receiving care had a significant impact on how confident they felt that their providers would be in their capacity to provide safe and effective care.

Significant work has been done to identify the causes of wait times and find solutions to the issue. Insufficient personnel, scarce resources, excessive demand because of seasonal illnesses, and unneeded trips to medical institutions are often cited as the root causes.

Scheduling system overhauls and improved personnel management are two methods used to lessen patients' wait times and boost their satisfaction with care (Spaite et al., 2002). However, because of staffing shortages and rising patient volumes, extended wait times are more common. This demand and supply issue is obviously challenging to resolve with the current level of available resources.

Long wait times and patient dissatisfaction have been looked at by certain researchers from a psychological standpoint. They have been working on reducing patients' frustration with long wait times by using psychological and perceptual strategies (Spaite et al., 2002). Methods include alerting patients in the waiting room of the estimated length of their wait time, giving patients with activities to occupy their time, offering clear instructions through public information systems, and educating patients about their medical conditions and treatment options.

However, if patients are less likely to consult with medical personnel because of lengthier waits, this could lead to later diagnoses and delays in treatment, which could negatively affect health outcomes despite the fact that waiting time is typically seen as an unavoidable part of the patient experience (Xie et al., 2019). Patients' health is more at risk when waiting lists are based in part on health insurance status rather than entirely on the urgency of disease, especially in more critical cases where treatment is time-dependent and patients need emergency care. Some populations are particularly at risk when waiting times are prolonged; for example, elderly U.S. veterans. Differences by health insurance status have the potential to worsen preexisting social and health disparities in Germany because more vulnerable patients are more likely to be SHI holders (Xie et al., 2017).

Experimental studies (where patients actually make appointments by calling a medical facility) and secondary data (where individuals are asked about their wait times after the fact) have investigated the correlation between health insurance and waiting times. Several controlled experiments have shown that patients with private health insurance typically had shorter wait times than those with standard health insurance (Fan et al., 2019).

2.3.1 Waiting time for patients in Emergency department

The World Health Organization (WHO) has designated patient wait times for healthcare services as one of the most important indicators of a timely healthcare system. The length of time that patients wait at healthcare facilities before being seen by a healthcare provider for an evaluation or procedure is known as the patient waiting time (Valentine et al., 2003).

The report "Crossing the Quality Chasm" from the United States (US) Institute of Medicine provides a framework of six guiding principles for excelling in an increasingly competitive healthcare delivery system. The ability to offer care in a timely manner and to minimize potentially detrimental delays is one such principle (Liu et al., 2017). All patients must be seen within 30 minutes of their scheduled appointment time, according to the UK government's Patient's Charter. No one anywhere disputes that waiting extended periods between medical appointments is unacceptable. Patients' displeasure with long wait times has persisted and grown over time, suggesting that this is a significant factor contributing to overall dissatisfaction with healthcare (Xian, 2017). Numerous studies

have shown a robust inverse association between patient satisfaction and waiting time. An increasing emphasis is being placed on patient happiness as healthcare solutions become more individualized and consumer-driven.

The lengthy wait for patients to be seen by doctors after their scheduled appointments is another source of frustration. Long waits for consultations were the top reason for dissatisfaction among outpatients in China's 2015 National Patient Survey, which surveyed 136 public tertiary hospitals. The primary reason for this is that the demand for medical services is growing at a quicker rate than available facilities can accommodate.

2.3.2 Emergency Department queuing model

The queueing paradigm in an emergency department has been linked to longer wait times for treatment. The input and output processes that patients go through in the ED's patient queuing model are defined. The patient's arrival is outlined in the input procedure. These Patients check in at the front desk and then wait in line. According to the rules of queue discipline, a waiting customer is chosen at random. When the patient's service is complete, they will be released from the waiting system (Heizer et al., 2018). Output process refers to the process of providing services according to predetermined guidelines and releasing patients. Lessening patients' wait times in the ED is one benefit of a well-organized system that adheres to triaging principles.

Queueing theory states, "Queuing is an event when individuals or things will through a process from arriving to entering the queue, waiting, and receiving the service" (Azriel et al., 2019). Depending on the current system load, the queue length may be constrained (constrained) or unconstrained (unconstrained). A queueing or waiting system consists of

a group of people or goods waiting to be served. One can break down a queue into its constituent pieces, which include: (a) Arrivals or inputs to the system, which include things like population size, behavior, and distribution. b) Discipline in the waiting line/the queue itself: The queue's length and the rules that govern its members, such as "First in, First Out," are two defining features (FIFO). (c) The service facility's architecture and the statistical distribution of service time are examples of characteristics. There are four distinct models of queuing behavior: the single-channel model, the multi-channel model, the multiple-channel model, and the many-channel model.

Waiting in line is a common occurrence in today's culture. Waiting When there is more demand than supply, people begin to wait in lines. Healthcare at hospitals typically requires patients to wait for various amounts of time (minutes, hours, days, or months) before receiving treatment. Some people's discontent with a service can be traced back to their experience in a queue (Azriel et al., 2019). Poor patient outcomes are just one of the many unintended consequences that might result from the frustrating experience of waiting in line. Efforts are being made to reduce patient wait times by expanding the range of medical treatments offered by hospitals. To improve both their corporate productivity and the quality of their medical services, they have implemented EMR systems. Nonetheless, public hospitals, which face fewer threats from commercial ones, are lagging behind in the adoption of EMR (Kim et al., 2018). It's common knowledge that the adoption of EMR decreases the length of time that patients must wait to see an outpatient provider. Due to the elimination of the need to transport charts manually from storage to the medical office, many adjustments have been made to the way charts are managed in the course of EMR's implementation.

2.3.2.1 Waiting Line

When a service facility is momentarily busy, patients form a waiting line, also known as a queue. Pandya-Wood, R., et al., (2017) define the capacity of a queue as the largest possible number of patients who can wait in line to be seen. The term "infinite" or "finite" is used to describe a queue's length in relation to this number. When it comes to receiving medical attention, an infinite queue is one in which an infinite number of people can be detained indefinitely.

According to studies of queuing models, the time spent waiting in line can be directly translated to a monetary cost for both individuals and organizations. Service providers including hospitals, airlines, banks, and modern businesses work hard to reduce client wait times and costs (Azriel et al., 2019). In the emergency department (ED), where every second matters in terms of patient outcomes, the urgency with which services are provided is becoming increasingly important.

2.3.2.2. Waiting line Discipline

Discipline in the waiting line refers to the method by which those in line are chosen to receive service. First-in, first-out, or a series of patient classes with various priorities: these are the two common queue disciplines in healthcare settings, unless an appointment system is in place. A novel approach is offered that groups ED visits into broad severity categories in an effort to target policymakers and health system administrators' efforts where they would have the greatest impact on patient outcomes and expenditures. Waiting in line is a common occurrence in today's culture. When there is more demand than available service, customers must wait in line. The length of time a patient must wait

(minutes, hours, days, or months) to receive medical attention in a hospital can vary widely (Phillips et al., 2019). Some clients find the practice of queuing or waiting in line to be frustrating. An unpleasant line-waiting experience can have a lasting negative impact on a customer's overall satisfaction with a business. The long-term success of any organization is directly tied to how its managers approach the queueing problem. Client care plans (a specific management plan implemented when the client attends the ED) and assertive case management strategies (involving ongoing clinical interaction which extends beyond the hospital and into the community) are two of the most common types of approaches reported to have been developed internationally to target frequent ED attenders with SUD (Phillips et al., 2019). According to this framework, emergency departments would save more money if they prioritized preventing unnecessary hospital admissions and, to a lesser extent, enhancing the care they provide for patients with "intermediate or complex conditions," rather than focusing on diverting low-acuity visits to cheaper ambulatory care facilities (Morley et al., 2018).

2.3.2.3 Service Mechanism in the Emergency Department

The patient's care is outlined by the service mechanism. There may be several servers in a single server system, but each patient is only ever dealt with by a single server. Service times tend to be sporadic and highly variable (Azriel et al., 2019). The number of servers is also specified by the service mechanism. According to the well-known first-come, first-served principle, the first patient in the shared queue will be assigned to the first available server. Although first-come, first-served (FIFS) is the industry standard, emergency departments should use a triage system to better treat patients who need immediate care.

2.3.2.4 Single-server, Multiple-phases System

Figure 2.2 depicts such a system, in which patients still wait in a single queue but are provided with multiple types of care before leaving the queue. When visiting the hospital's outpatient department, patients must first check in at the registration counter, complete any necessary paperwork, and then wait in line to see a nurse for any necessary ancillary services before finally meeting with the consultant (clinician). Every step along the way, patients must wait in line. Here, a programmable central controller monitors traffic and its routing, making regular choices that adjust the routing based on the observed load in the network switches in an effort to minimize congestion (Czachórski et al., 2021).

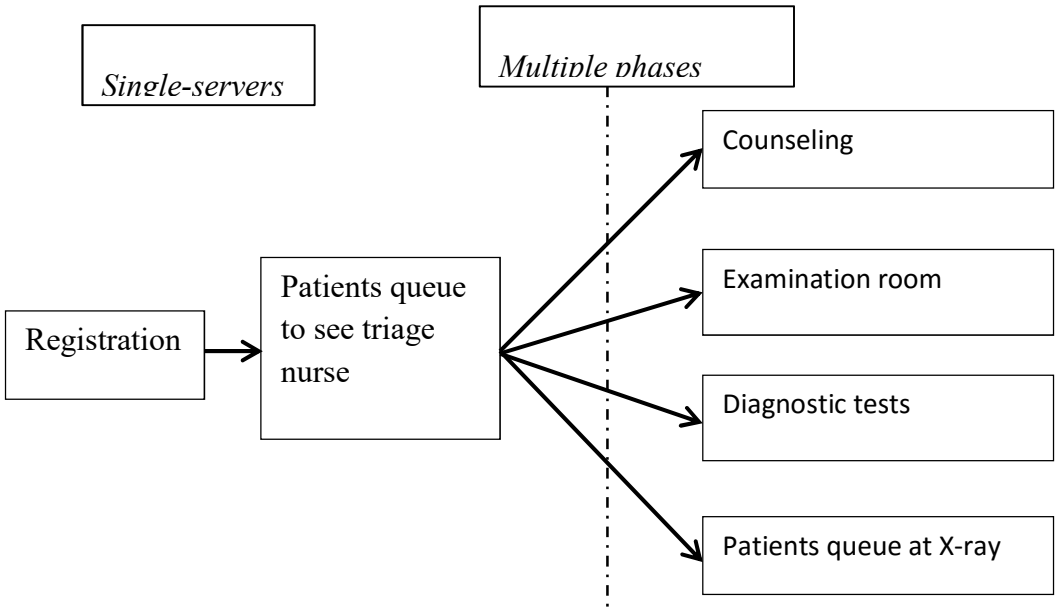

Figure 2.1: Queuing discipline showing a single -server and multiple phase system

2.3.3 Departure

After receiving care in the ED, patients can leave by a variety of exits. A patient may be admitted, provided with the expected service, and discharged back to their original community; another patient may experience delays and choose to seek out similar services elsewhere; and a patient may at any time be advised by a health care provider to seek out services elsewhere due to capacity issues.

When a customer is finished being attended to, they leave. According to, there are two possible outcomes upon customer termination: (a) the customer returns to the source population and immediately becomes a competing candidate for service again; and (b) the possibility of re-service is low (Stordahl, 2017).

There may be both direct and indirect influences on patients' choices of where to seek treatment. Because of this direct connection between the factor and the decision at hand,

causal factors can be thought of as independent predictors of a given care provider. Patient-perceived symptom severity, patient-beliefs about care options, patient-knowledge of care options, patient-accessibility, advice/referral, and simplicity of use are all examples of potential causative factors.

2.4 Factors Influencing Waiting Time at the Emergency Departments

There are a number of factors that influence how often people use medical care, and patient wait times is one of them. Due to factors such as an aging population, the prevalence of several chronic diseases, and a lack of primary and acute care resources, EDs around the world are seeing an increase in patient visits that is having a detrimental effect on patient flow and outcomes (Yarmohammadian et al., 2017). Long wait times are seen as a deterrent to patients seeking care. Current urban emergency medicine is characterized by overcrowded emergency departments (EDs), lengthy wait times, patient care delays, and a lack of resources. Patient length of stay (LOS) is an important indicator of ED congestion. Improved ED management processes, such as protocol-driven evaluation systems and reorganized clinical teams, can significantly decrease LOS, and previous research has shown that overcrowding, prolonged waiting times, and protracted lengths of stay increase the proportion of patients who leave without being seen by a physician. Since patients' satisfaction with their healthcare facilities may be measured in terms of their average waiting time, this metric has become more essential as a proxy for the quality of care provided. Engaging stakeholders who receive or deliver health care has become increasingly important, as suggested by Lennox et al. (2019), in order to determine determinants of implementation based on experiences of care and to

comprehend routes to safer and more effective patient care.

There are a number of outpatient units within the hospital, and the patients who use them see doctors at different times. Patient wait times are becoming increasingly relevant to an emergency department's capacity to boost patient outcomes in today's aggressively managed health care market (Cassarino et al., 2019). Existing customers' loyalty might be affected by wait times as well.

2.4.1 Patient Factors influencing Waiting Time at the Emergency Department

The length of time it takes a patient to receive health care depends on a number of factors, including the patient's age, gender, marital status, education, presenting conditions, comorbidities, the type of service sought, the patient's arrival time at the health facility and the ED, and the patient's wait experience (Van den Oetelaar et al., 2018).

Age, gender, and level of education are major predictors of patient satisfaction with health care services in general, and with waiting times in particular. Wait times for patients may be affected by various factors. Numerous patient characteristics have been proven in studies to negatively impact access to care (Campbell et al., 2016). Some examples of these are getting older, having financial difficulties, having health issues that persist over time, and belonging to a certain ethnic group. Patient visits decrease when accessibility declines.

Wells et al. (2018) found that older age, higher levels of education, and formal employment were associated with positive care experiences, including shorter wait times, as were higher levels of economic development in the region, a more generous insurance

benefits package, and a higher degree of coordinated care. Interventions focusing on communication and relationships between staff and patients made significant contributions to the enhancement of that aspect of care. Improvements in patient experiences for farmers and those who seek out traditional Chinese medicine treatments, who together make up a disproportionate share of the population in certain areas, merit particular governmental focus.

Patients above the age of 65 were seen and treated more quickly than those under the same age bracket for all 27 health care services (Cook et al., 2017). Another study found that men used ED services for shorter durations than women. People with higher levels of education, in contrast, are better able to think critically and have higher expectations in all areas of life, including access to health care services. In addition to keeping patients informed of their wait times, patient education is a crucial part of the waiting experience (Stordahl, 2017).

There were many asthma patients who qualified for referral to a specialist, but only a fraction of them actually received one; many others had to wait a long period to be referred. Results show significant gaps in asthma referral, which could lead to avoidable harm; findings may influence how services are structured to fill these gaps (Bloom et al., 2018).

People with different levels of authority interact with one another through the act of waiting. The weak wait for the strong, and the strong do not need to wait for anything at all because they make the weak wait. As the author puts it, this is a dominant process that "recreates the existent dis-symmetry between urban inhabitants and state actors, and

subjugate the former" (Van den Oetelaar et al., 2018). According to research by Van den Oetelssr et al. (2018), the ability to make others wait is a form of privilege since it allows some people to control or alter the behavior of others. Real or perceived superior social status can also underpin such privilege. For instance, Van Den stated that "middle class" family structure models were less inclined to wait while their cases were reviewed in the aftermath of Hurricane Katrina. The unpredictability of the wait time is one factor that contributes to the stress of waiting. In an effort to improve efficiency, medical institutions have become highly bureaucratized; nonetheless, the institution's complicated and ever-changing rules and highly developed divisions of work may generate delays, similar to those seen in welfare offices. Unforeseen circumstances, including as emergency cases, and the necessity for personnel to prioritize care based on need can also cause delays for patients. Patients have limited influence over their wait times due to bureaucratic and unexpected delays in the healthcare system.

2.4.1.1 Turn up of Patients at the Emergency Department

Patients typically arrive in groups at the ED, so when multiple people show up at once, it can take a while for everyone to be attended (MOH, 2016). If 20 people show up at once to the ER, the first one would have to wait zero minutes if the ED were empty, but the second would have to wait for however long it took the personnel to attend to the first. Overcrowding occurs when a large number of patients arrive in the ED at the same time. The congestion of emergency rooms is viewed as the biggest single barrier to providing safe and effective emergency care in Australia and New Zealand.

There is a direct correlation between the length of time a patient spends waiting and their sense of helplessness. A patient may feel overwhelmed by the presence of other people who are also stressed and apprehensive. Unfortunately, even after being admitted to an examination room, patients may have to wait for some time before being seen, which can further erode their self-esteem, make them feel helpless, and make them feel neglected. Studies by Ansah et al. (2021) show that patients are unhappy when nursing care is inadequate or delayed.

When compared to other areas of the healthcare system, the Emergency Department (ED) typically has a higher patient volume and fewer available resources. Overcrowding in emergency departments has been shown in international studies to lower the quality of care provided to patients. Patients may have to wait longer for care, workers may feel stressed out, patients may want to leave the facility, the number of medical mistakes made will increase, and productivity and patient outcomes will suffer.

Health care facilities should expect a large influx of patients during times of mass casualty or public health disaster. Hospitals are particularly important in times like these because of the care they provide to patients. In addition to bearing the brunt of the aforementioned disasters, hospitals must maintain or even expand their services to keep up with the surge in patients brought on by these incidents. The ability of a health care system to assess and treat a patient population that greatly exceeds or challenges the system's normal rate of use is referred to as its "medical surge capability" (Ansah et al., 2021). Tasks like intensive laboratory studies or epidemiological examinations of viruses and vaccinations may be necessary to meet the demands of a surge in addition to direct patient treatment. Many patients' first contact with the healthcare system is in the emergency department (ED),

which is also the first area of the hospital to reach capacity in times of public health emergencies.

2.4.1.2 Type of service sought by patients

The ambulatory care model is used by the majority of EDs, which has a direct impact on the services that patients seek out at hospitals. When it comes to health policy, timely access to healthcare treatments, such as specialist visits and surgery, remains a top priority in Canada and other nations with publicly funded healthcare systems. Long wait times are consistently cited as the primary impediment to care in the United States. However, people only have an issue with waiting for care if they feel they have to wait too long for treatment. Understanding the elements that influence patients' perceptions of the acceptability of their wait times is crucial for resolving the problem of unacceptably long waits for care.

Outpatient departments (OPDs) in public hospitals in Tanzania have long wait times for patients registering, seeing doctors for consultations, and receiving other services including pharmaceutical prescriptions and specimen collection for lab tests. Multiple studies have found that patients and users of healthcare facilities in numerous countries find the length of their wait to be one of the most unsatisfactory aspects of their experience (Umar et al., 2011).

Patients want care that is tailored according to their requirements. To provide each patient with individualized treatment that takes a holistic approach means to treat them as an entire person, with due regard for their unique set of circumstances, including their rights, dignity, and need for privacy. The capacity to form compassionate relationships that

address the patient's immediate concerns and needs is crucial in emergency department (ED) nursing (Wu et al., 2017).

Most tertiary hospitals' emergency rooms in India are overcrowded, understaffed, and underutilized. Longer than necessary wait times are experienced by patients due to the difficulties of congested EDs and poorly managed patient flow and admission processes.

2.4.1.3 Choice of facility by patient

According to the results of a study done in Uganda, people who don't go to the local hospital for any other reason than an emergency usually have to wait longer to be seen. Conversely, those who voluntarily visited the nearest hospital and those who did not visit the nearest hospital for any reason both reported greater wait times.

When patients and their loved ones have to wait for a long time to be seen by a doctor, they often stay in the waiting area outside the examination room out of fear of being misunderstood as uninterested or out of fear that they will miss something important (Li et al., 2017). Patients are often reluctant to bother nurses with even the most basic needs, such as going to the restroom or speaking to visitors, out of fear of appearing to be a burden. When patients see that nurses are overworked and understaffed, they feel they have no right to bother them about their most fundamental needs.

Investments in China's healthcare system have increased dramatically since the turn of the millennium. The number of hospitals had risen to 29,000 by November of 2016, and the number of primary care clinics had reached 930,000. (Wu et al., 2017). However, the increase in demand, especially for advanced medical facilities, continues to outpace the increase in supply. The congestion of specialty hospitals and underuse of primary care

clinics that results reduces the health system's efficacy and efficiency (Chao et al., 2017). Hospitals are defined as "medical facilities having more than 20 beds" in China, and there are "3 tiers and 10 classes of hospital system" within the country's healthcare infrastructure. There is no gatekeeping system in place that prevents the general public from accessing any hospital or clinic of their choosing. Primary care and public health services are provided through community clinics and township health centers (THCs) in rural regions. Community health centers (CHCs) and community health stations provide these services in metropolitan areas (Li et al., 2017).

2.4.1.4 Arrival time of patients at the Emergency Department

The time a patient presents oneself at the initial point of service, usually the registration desk, within a healthcare facility is considered their "arrival time" (Whyte & Goodacre, 2016). To determine how long it takes to receive a facility's full service, start timing from the moment a patient enters the building. Patient's scheduled appointment time or the time when they really require the service will be equated to this arrival time. Evidence suggests that both the patient's total time with the doctor and the clinic's efficiency suffer when patients are late for appointments.

Even if appointments are given on an ad hoc basis, if they are not adequately arranged, patients may have to wait for quite some time. Single block scheduling is the bare bones of outpatient management. All patients are scheduled to check in at the same time under the single block regulation. Each patient is attended to in the order in which they arrive. Today, the individual block rule has replaced other appointment scheduling methods. Separate appointment times for each patient are scheduled throughout the duration of the

clinical session. A manager's decision to implement an appointment system should take into account research showing that the entrance of patients at random in the ED has a little impact on wait times and that the day of arrival has a significant impact on wait times at a certain institution (Cayirli, & Emre, 2013).

In the emergency room, time is of the essence as doctors work quickly to save patients' lives, yet patients may have to wait for quite some time. After assessing the severity of the patient's condition, a priority rating is assigned upon arrival at the clinic, with lower priority patients receiving less urgent nurse attention. All patients, regardless of medical priority, have the right to reasonable expectations of nurse care during waiting times. The patient's wait time and the actual wait time are two independent components of the total waiting time. Patients in the ED have two layers of experience throughout their wait: the psychological and the physiological. Waiting times are often misperceived as being longer than they actually are due to factors such as physical discomfort, stress, and uncertainty. The emotional needs of patients and the attitudes of ED staff members toward them are two examples of the qualitative aspects of care that are commonly overlooked.

2.4.1.5 Waiting Experience

Patients are seen in a variety of departments across the hospital, but a sizable fraction of them will go to the pharmacy. This causes a fluctuating stream of customers to flood the drugstore at once, disrupting the prescribed order of events. Cote (2014) argues that several variables affect health care operations' efficiency and the development of bottlenecks.

Patient satisfaction with their medical care is proportional to the length of time they had to wait in the emergency room. The patient's wait time and the actual wait time are two different measures of this same phenomenon. There are two dimensions to the experience of waiting in the ED that patients face: the psychological and the physiological. Waiting times are often misperceived as being longer than they actually are due to factors such as physical discomfort, stress, and uncertainty.

Care for patients' emotional needs and positive staff attitudes toward patients are examples of qualitative features of ED care that aren't often prioritized. The length of time a patient spends waiting in the ED depends on how they fared in their triage (Whyte & Goodacre, 2016). When a patient has to wait for a health evaluation, it is important that they are able to communicate effectively with staff and receive accurate and complete information about their condition. When a patient's symptoms and concerns are given little importance, the patient may feel that they are being disregarded. Patients are outraged by expressions of apathy or lack of concern, which adds to their pain. When patients have bad experiences with medical staff, it makes them feel even more helpless and vulnerable, which in turn increases their pain.

Unfortunately, even after being admitted to an examination room, patients may have to wait for some time before being seen, which can further erode their self-esteem, make them feel helpless, and make them feel neglected.

Patients want care that is tailored according to their requirements. To provide each patient with individualized treatment that takes a holistic approach means to treat them as an entire person, with due regard for their unique set of circumstances, including their rights, dignity, and need for privacy. The nurse's ability to establish rapport with the patient and

attend to his or her immediate emotional needs is crucial in an emergency department setting.

Expert services that not only cater to the needs of the patients but also account for the perspectives of all parties involved are synonymous with high-quality emergency care. The shared dedication of the care professionals to completing each and every task for the benefit of the patients is what is believed to be at the root of the concept of quality care. Similar to how it is in other nations. Health care providers in Finland are required by law to use practices supported by scientific evidence (Senderovich et al., 2016b). The future of this challenge is essential to any discussion of the state of out-of-hospital emergency care.

Finland, like many other countries, is seeing a substantial increase in its elderly population (Tiwari et al., 2014). There will be a rise in the number of elderly persons requiring emergency medical care who have several health problems. More and more people are receiving care at home rather than in an institution. Those who work in emergency rooms will increasingly see patients in poor condition. Treatment recommendations will need to be outlined. Care workers may occasionally have to weigh the benefits and risks of withholding aggressive treatments, but they will also be expected to provide comprehensive care right where it's needed.

Geriatric acute care specialists will be in high demand in the years to come (American College of Emergency Physicians, 2016). Furthermore, for those struggling with alcoholism, social isolation, or mental health issues, emergency care services may be their sole point of contact with the healthcare system. Networks of cooperation involving

primary care, emergency social services, home nursing, drug misuse services, and emergency medical services (EMS) must be established and kept in good working order.

2.5 Health Facility factors influencing Patient Waiting Time at The Emergency Department

A health facility's physical design, signage, patient flow, operational efficiency, staffing, health worker factors, and lack of equipment all affect how long people have to wait. These variables lengthen patients' wait times in emergency units. Appropriate deployment of personnel across multiple shifts reduces patient wait times.

2.5.1 Physical design of the emergency department

The quality, efficiency, and effectiveness of healthcare delivery in outpatient settings are all significantly impacted by the physical environment. It is essential to comprehend the patient's path through the department in order to fully grasp this idea. The relationships of visibility between and across spaces, as well as how they are related and altered by the direction changes enforced by the circulation system, can significantly influence a visitor's physical experience (Capolongo et al., 2019). Therefore, ease of access plays a crucial role in maximizing the efficiency of patient flow and overall operations.

Researchers proved that the healthcare facility's physical setting plays a significant role in the quality of care patients receive. A high-quality health service that aims to improve people's health and well-being should, in part, be the result of thoughtful consideration given to the building's architecture and layout. Structure, which includes "physical and organizational qualities where health care occurs," is the third domain in which healthcare quality is reflected, as stated by the Donabedian quality assurance model. In the West,

well-established systems (like Joint Commission International) are crucial to the process of quality measurement and improvement, with criteria and indicators spanning the clinical, organizational, and management domains. However, the built environment is rarely discussed, and no indications are offered for gauging the quality of healthcare facilities (Miedema et al., 2019). Evidence-based design is a developed theoretical framework with roots in evidence-based medicine. To make the most informed design decisions possible, evidence-based design seeks to make the most of the best available evidence from a variety of sources or parties. Medical facilities that follow supportive design principles are thought to reduce stress for patients. Exposure to nature and art, as well as proper ceiling design, acoustics, and color, are all important design aims (Cartland et al., 2018).

2.5.2 Signage in the Emergency Department

New or remodeled EDs should have their service sections strategically located next to one another in order to minimize the amount of time spent walking between them. Patients should be able to move quickly and easily through the facility, from the point of entry to the point of departure, and every step in between, including the information desk, the triage area, the patient registration desk, the pharmacy, and the relevant stream of care, must be carefully planned. The patient records area must be conveniently located close to the register so that valuable time is not wasted searching for files. Placement of signs clearly pointing the way to various service areas is essential.

Patients' impressions of care quality, comfort, and contentment may all rise if the waiting area is big and well-designed. On the other hand, a crowded waiting area might make

patients more irritated and enhance the intensity of their suffering (Xuan et al., 2021). However, the design of waiting areas must also take privacy into account. A huge room may seem too public when only a small group of people needs to be there. Users prefer waiting areas equipped with self-service family resource centers and children's play places to better accommodate the emotional and developmental requirements of young patients, according to research.

2.5.3 Patient flow

Patient flow denotes the capacity of a healthcare system to serve patients swiftly and effectively as they progress through various stages of care. The efficiency with which services are provided can suffer if bottlenecks lengthen wait times and decrease throughput (Lee et al., 2020).

Short wait times for registration, examination, diagnostic testing, pharmacy, and discharge are indicators of smooth patient flow. Therefore, enhancing the efficiency of patient movement is a means toward better healthcare. Issues with the flow: Patients are present, and there is staff ready to see them, but their care is being impeded by a lack of timely access to another service. Although there were no customers in the waiting area, there were employees there.

Poor patient flow is often blamed for creating unnecessary congestion. Important patients are attended to without needless delay according to the hospital's streamlined patient flow system. However, the issue of long, unmoving lines is exacerbated by a lack of effective patient flow. Reduced waiting times and a steady outflow of patients are essential for efficient patient flow. Once a patient arrives at the emergency department, he or she may

have to wait several times before being seen. These waits might stretch for hours or even days.

It has been widely reported that patient satisfaction with the ED is at an all-time low due to long wait times. Cook et al. (2017) identified the reduction of "waits" as the most essential area for improvement in the ED. Research has linked delays in the procedure to negative outcomes and increased violence in emergency departments. Wait times are affected by many variables, such as the number of patients served and the availability of staff. This upstream bottleneck will also create treatment delays if the outflow of patients from ED is impeded (either by transfer out or by discharge).

Hospital administrators can minimize patient wait times, boost efficiency, and alleviate crowding in the EOPD by analyzing flow patterns.

Patients waiting for care in a pediatric department may need access to the restrooms, drinking fountains, child-friendly areas, and other ancillary services. The optimum hospital design shortens the distance patients must be transferred. One of the most popular design toolkits in this area is space syntax, which is meant to make navigating hospitals and other medical facilities easier for patients. It's vital to consider the number of junctions and the length of the walk between the lobby and the doctor's office when planning your route. Symbols, permanent signage, written materials, landmarks, and architectural characteristics all play a role in facilitating orientation. Users may find it easier to navigate the building and find what they're looking for if the interior is filled with vibrant colors (Lee et al., 2020).

2.5.4 Queue Related Problems

This happens when employees don't take care of patients in the sequence in which they arrived at the service desk. This means that early birds have to wait their turn while others are seen before them, regardless of when they arrive. Each patient's wait time is significantly impacted by cases of illogical queuing (jump queue). Patients' sense of helplessness increases the longer they have to wait in the waiting area (Senderovich et al., 2016b). A patient may feel overwhelmed by the presence of other people who are also stressed and apprehensive.

2.5.5 Type and level of health facility

There is a mix of state and private hospitals and clinics in Nigeria's health care system. In the public sector, hospitals fall under the jurisdiction of the federal (tertiary hospitals and some hospitals in federal institutions like universities), state, and local levels of government (primary health care centres and health posts). They can be broken down into three major groups in the private sector: primary care (general practitioners), secondary care (specialists), and tertiary care (both primary and secondary) (Whyte & Goodacre, 2016). There are also a number of non-governmental organizations and facilities run by donors. Health care in Nigeria is not uniformly free, unlike in many affluent countries. It is estimated that 98% of women and 97% of men do not have access to health insurance, and must pay out of pocket for medical care (Whyte & Goodacre, 2016). Because of this, people who need health care services must decide where to go for treatment based on a number of considerations. Health care consumers typically consider six different factors when deciding which health care facility to use: service quality, availability of providers (both hospitals and physicians), out-of-pocket costs, health providers' communication

skills, patient-provider interactions, and administrative burden. However, the utilization of the health care facility is mostly determined by the patients' judgments of the quality of treatments offered (along with cost effectiveness).

2.5.7 Availability of supplies

Many low and middle-income country health systems struggle with a lack of essential medications and equipment for emergency care. Because of this, fewer people receive adequate medical care, and some even end up dying as a result. Nearly all human deaths happen in underdeveloped nations, and the majority of those are in rural areas (Lau & Leung, 2017). If people had ready access to health care, especially good emergency treatment, many of these deaths could be prevented.

Providing high-quality emergency care has been hailed as a cost-effective strategy for lowering mortality rates in recent years. The concept of emergency care like (EmOC) is founded on the idea that complications are unpredictable and can occur in approximately 15% of deliveries of cases encountered. In the presence of trained medical personnel, life-saving medications, and other emergency medical equipment, deaths caused by these problems could be avoided (Crist, 2020).

Lack of pharmaceuticals and medical supplies is rarely emphasized by policymakers or researchers when addressing the reasons of inadequate health services, despite its relevance in providing quality Emergency Care. The importance of trained medical staff and an efficient referral system has been a primary focus of excellent Emergency Care research (Lau & Leung, 2017). In addition, the availability of care coverage has been compared to the number of health facilities or departments, without considering the

quality of treatment offered at these locations. Although this may give the impression that emergency treatment is better covered, in reality, shortages of essential medications and medical supplies make it difficult for people to really take use of these services. Previous reports on drug shortages in underdeveloped countries have mostly been on diseases like malaria, TB, and HIV/AIDS, and very few research have explored the implications of drug availability on health care. Problems within health systems that obstruct patients' ability to get their hands on necessary medications and equipment must be fixed.

Since decentralization occurred in Tanzania in the early 1990s, LGAs have been in charge of funding district health centers (district hospitals, health centres, dispensaries). In any case, it was still the responsibility of the Ministry of Health and Social Welfare (MoH & SW) to pay for necessary medicines and equipment. The Medical Store Department (MSD), a branch of the Ministry responsible for overseeing the distribution of medications and medical equipment, is in charge of dispersing these money to local health facilities (Walters et al., 2020). The Community Health Fund (CHF) is a group insurance program funded in part by contributions from community members that is used to pay for pharmaceuticals and medical supplies.

Quarterly, Integrated Logistic System is used to order pharmaceuticals and medical supplies (ILS). Through the ILS, the District Medical Officer's (DMO) office can place orders for pharmaceuticals and medical supplies on behalf of the facilities, and the zonal MSD will then supply facility-specific packs directly to the facilities (Lau & Leung, 2017).

According to the World Health Report in 2010, anywhere from 20-40% of healthcare funding is mismanaged. Improper medication administration, an inadequate distribution of human resources, excessive or wasteful use of resources, corrupt practices, and inadequate capital expenditures all contribute to the inefficiency of service delivery. The prevalence and intensity of procedures and care across regions that is not warranted offers an indirect assessment of overuse and, by extension, inefficiency. While only 43% of antibiotics are used to treat acute diarrhea in public institutions in India, this number jumps to 69% in private hospitals. Overutilization and other sources of wasteful health care have deleterious effects on population health.

Waiting times are sometimes attributed to resource limitations, particularly the fluctuating or dearth of human resources in the health sector. However, resource constraints aren't the main cause of high wait times; issues like poor planning and management, a chaotic workplace, and cumbersome registration procedures also play a role. Time is defined as "a work measurement technique consisting of careful time measurement of the task with a time measuring instrument, adjusted for any observed variance from normal effort or pace and to allow adequate time for such items as foreign elements, unavoidable or machine delays, rest to overcome fatigue, and personal needs" throughout this paper. Institution of Industrial Engineers. According to some research, patients spend the vast majority of their time at OPDs waiting to be seen by a doctor. As a major contributor to patient satisfaction and a benchmark for health care quality, shorter wait times in OPDs and ERs have been the subject of research in a number of nations. The data gathered from them was used to develop and implement plans to cut down on people having to wait. Lean management techniques, when applied to a specific unit or department of a hospital

in a developed country, have been demonstrated to decrease patient waiting times. It is challenging to generalize findings from those research because they were conducted just at one hospital.

2.6 Health Care Provider Factors influencing patient waiting Time at Emergency Departments

2.6.1 Socio-Demographic Characteristics

It is of tremendous interest to health services researchers and healthcare budgeting to understand the physiological and psychological effects of waiting for medical treatment prior to, during, and after an interaction with a healthcare provider. There is evidence to suggest that longer wait times increase both the average duration of stay and the risk of death in the short term (Nez et al., 2018). Literature detailing the real influence of consumer trust while waiting for medical care in Australia's health system is few, despite the fact that many areas of hospitals are under public review, including access to hospital services, the quality of care, funding and management systems.

Changes in popular culture have led to new perspectives on traditional gender roles in the workplace (Benevento et al., 2021). Institutional work-family policies that are not designed around dual earner and care giving couples limit this option, despite the fact that most young men and women espouse egalitarian gender ideals regarding the sharing of unpaid and paid labor obligations (Vanbrabant et al., 2019). Health care is only one field where researchers have observed gender inequalities in care labor. According to research by Vanbrabant et al. (2019), women make up 64% of the ED medical staff. 83% of the slower service providers were female.

Socioeconomic status affects the nature of time limitations that women encounter

compared to males (SES). Additionally, there is a racial divide in how long it takes female healthcare workers to see a patient on the second shift. Black women, on average, work fewer hours overall than White, Asian, and Hispanic women, thus they have less time to put toward the second shift (Liu et al., 2019). Women, and Black women in particular, have less spare time than men due to care work demands and paid employment commitments. As a result of this time scarcity, which varies depending on one's social position, waiting time is an essential object of analysis, as it is typically seen as a waste of people's limited free time.

2.6.2 Availability of Health Care Provider at the Work Station

How quickly a patient obtains the necessary services depends in large part on the presence of a health professional at their work station when the patients arrive at each service point (Senderovich et al., 2016a). While many studies have looked at how staffing levels and patient wait times are connected, there is less written on how the availability of health care workers at their stations impacts patient wait times. Researchers found that having an emergency medicine resident on staff significantly reduced patients' wait times in the ER. It is hypothesized that absenteeism contributes to the already severe shortages in healthcare in developing nations, lowering demand, quality, and efficiency (Chicoine & Guzman, 2017). Those health professionals who consistently show up for work bear the brunt of the extra workload, and they may even be asked to do tasks for which they aren't adequately trained, while their coworkers are frequently absent (MacPhee et al., 2017). Health care quality and quantity have both increased thanks to efforts aimed at reducing absenteeism. Previous research has been mostly quantitative in nature, providing an estimate of the absence rate and a knowledge of relevant causes. As a result, there is a

dearth of data on the more nuanced causes and consequences of absenteeism in healthcare settings, as seen through the eyes of those who provide direct patient care (Brock et al., 2018). The necessity to discover cost-effective models of care, whether through the optimization of the workforce (through things like skill mix or fast-track systems), has been brought to light by calls for ED quality improvement measures (Hall et al., 2018).

2.6.3 Area of Specialization

The literature study found that nurse specialists are more likely to prescribe than general nurses (Ling et al., 2021). This has the added benefit of decreasing patient wait times and enhancing service quality. In the United States, nurse specialists are required to have a master's degree or above; in China, however, this is not the case. Accreditation as a nursing specialist is granted to those who have completed a minimum 6-month full-time training course, during which they have acquired expert knowledge and passed the evaluation at the end of core training.

All ages and medical conditions are treated at emergency rooms. Patients with primary care issues are also seen. Most patients are still seen by senior house officers, frequently in their first post-registration position, despite the increasing number of consultants and intermediate grade doctors. It should come as no surprise, then, that emergency treatment has room for improvement. There is little proof that experts perform better, so it is important to teach staff to increase their talents and decrease patient waiting times. Many studies have compared emergency room care to a hypothetical "ideal" established by specialists, but there is scant evidence that actual care meets even the "ideal" suggested by the professionals. Only one of six studies comparing emergency physicians to

specialists found that the experts performed better (Padula et al., 2019). There is also no proof that these specialists could handle these illnesses better than a general practitioner in an emergency room setting.

However, there is promising evidence suggesting the potential benefits of diversifying the ED workforce in terms of promoting interdisciplinary work and expanding the scope of practice of health and social care professionals (HSCPs), whose specialized skills can improve decision making and the quality of care, as well as reduce patient waiting time, especially when working within a multidisciplinary team. HSCP teams that operate out of the emergency department are more common in other countries, such as Australia, where they have been shown to improve patient outcomes (Zaree et al., 2018).

Nurses make up the bulk of a hospital's workforce, and studies have shown that having more highly educated nurses results in faster care for patients. For instance, Grasselli et al. (2020) found that hospitals with higher nurse-bed ratios had better outcomes. They also found a strong correlation between the percentage of registered nurses with a BSN and the percentage of deaths avoided, as well as other nurse-sensitive indicators such as the average length of stay. Specialized personnel able to assess and rebuild healthcare systems in light of the needs of complex patients and the avoidance of difficulties are essential to the systematic changes in quality improvement infrastructure.

Many healthcare organizations have strong leadership in place and regularly make investments in data science and other forms of technological enhancement. However, staffing is often misunderstood or undervalued within this paradigm, as it is commonly believed that just adding more clinicians at the point of care can fix any and all problems.

However, there is a wide range of personnel that must be employed in order to raise quality, making the contribution of trained experts all the more crucial. Care for difficult patients, system planning, quality assurance, staff education, and bedside care all fall within the purview of these professionals (Tang et al., 2021). When a hospital views investments in quality improvement infrastructure as costs rather than investments, it will be difficult to hire a workforce of skilled specialists who are more expensive than bedside clinicians and to observe their direct impact on patient care in reducing patient waiting times.

From 28% in 1997 to 77% in 2006, the percentage of EDs with APPs like PAs and NPs on staff climbed dramatically.

According to a 2015 poll of university EDs, the majority (74%) use APPs in their offices. In 2009, 6% of ED visits were seen exclusively by PAs/NPs, which helps reduce patient waiting time because 15% of ED visits were staffed by 2 PAs/NPs but 40% of these visits were not seen by an attending physician (Aledhaim et al., 2019). In addition, APPs are used significantly more frequently in rural EDs because of a lack of on-site physicians. Pressure to address a nationwide physician shortage, limits on residency work hours in academic institutions, the need to cut expenses, and the advocacy of APP professional organizations to achieve full autonomy as clinicians all point to the continuation of these tendencies (Chekijian et al., 2018). Requirements for entering medical school, gaining clinical experience, and completing advanced degrees vary greatly between physicians, physician assistants (PAs), and nurse practitioners (NPs). To best provide a collaborative, supportive, and instructive context within which PAs/NPs can operate effectively as part

of a care team, it is crucial that we, as supervising physicians, patients, hospital administrators, and legislators, grasp the differences. Concerning PA and NP competence, duties, and physician supervision, as well as billing and care outcomes, medicolegal, and other relevant concerns, there are relevant professional associations (Klauer et al., 2018).

Aledhaim et al. (2019) proposed a holistic approach and found five defining aspects of nursing workload: the quantity of nursing time spent on nursing care, known as patient acuity; the level of nursing competency; the weight of nursing intensity (direct patient care); all the physical, mental, and emotional efforts; and the nurse's ability to adapt the plan (complexity of care) necessitates nurse specialization in many fields of study. Workload can be broken down into three categories: unit-level workload, which takes into account the equilibrium between patient acuity and staffing; job-level workload, which encompasses the general and specific demands of the job, such as the amount and difficulty of the work and the amount of concentration required to do it; and task-level workload, which is related to the demands and resources for a specific task, such as medication preparation. There are several different types of workload, each of which raises the average patient wait time and has its own unique effects on burnout, job satisfaction, and the chance of prescription errors.

In intensive care units, patients are frequently exposed to potentially harmful adverse events. The ability to recognize, respond to, and even cause adverse events may depend on the expertise and judgment of clinicians. There may be a link between nurses' speciality certification and their level of clinical knowledge, according to the available research. It is a new topic of study in nursing to determine how specialized certification affects the

clinical competence of RNs and patient safety (Kuo et al., 2020). An AP, who may be a friend, family member, or coworker, often comes with patients to the ED when they need medical attention. Although the AP's precise function will depend on the nature of their relationship with the patient, in most cases they will be expected to comfort the patient and act as an advocate for them during this difficult time. Patient and AP satisfaction with the health service as a whole will be influenced by their time spent in the ED.

Upon entering the emergency department, all patients will be met by a nurse who will triage them based on their symptoms and history. Scientific knowledge and technological advancements form the basis for the establishment of new specialties, which in turn give rise to new subspecialties. Because that's how progress works. Author and coworkers make no distinction between specialists and those in a certain field (Tang et al., 2021). Doctors choose to specialize because of personal interest, the influence of mentors, and the unique requirements of the field. Triage systems based on standardized five-point scales have been adopted in a number of developed nations, including Australia, Canada, and New Zealand.

Primary care provides many benefits, including high levels of service efficiency, cheap costs, less utilization of urgent and emergency care, and happy patients. It's an efficient strategy for dealing with future health threats to patients and addressing the underlying causes of disorders. The underlying heart of the generalist versus specialist dispute is the wage gap between primary care physicians and specialists, which has unfortunately been created due to the avarice of a few members of the medical profession and the way the

United States pays physicians. Most Americans assume that all doctors make a comparable salary to their own (Swami et al., 2018).

Quality nursing care in the Emergency Department relies heavily on the knowledge and abilities of the nurses who provide it (ED). It is widely held that proficiency in both triage and emergency nursing is positively related to one another. It's been pointed out that just having information isn't enough to get reliable clinical results. Therefore, Ling et al., (2021) verify that the efficacy of triage is ingrained in the knowledge and skills of the emergency professionals. Practices and procedures for triage decision-making can be improved and addressed with the help of simulations, "thinking aloud" approaches, introspection, and the decision rules of seasoned emergency nurses. Since training on triage is a crucial part of emergency nursing education, it is imperative that nurses working in emergency triage have the appropriate education and skill in emergency triage, decision making, and emergency nursing care.

2.6.4 Communication on waiting time

It is the triage assessment that decides how long a patient will have to wait in the ED. Those who have to wait for a health assessment deserve respectful, prompt, and thorough communication from medical staff. When a patient's symptoms and concerns are given little importance, the patient may feel that they are being disregarded. Attitudes that convey apathy or lack of sympathy are offensive to parents and add to their pain. When patients have bad experiences with medical staff, it makes them feel even more helpless and adds to their pain while they wait for treatment. A vital component of high-quality emergency care is efficient two-way communication between the healthcare professional

and the patient. Healthcare providers and patients need to communicate well in order to develop a trusting connection. On the other hand, patients decide not to use a health center's services when they have a negative experience communicating with their healthcare providers (Okonofua et al., 2017).

This will ensure that everyone is hearing and comprehending each other with regard to the waiting period. When healthcare providers take steps to avoid shouting and rudeness, encourage two-way dialogue, bridge any social gaps between themselves and their patients, effectively use verbal and non-verbal communication, give patients plenty of time to tell their illness story, and display upbeat attitudes, they can improve the quality of their interactions with their patients and improve the quality of care they provide (Balde et al., 2017). Negative health outcomes can be attributed to inadequate service delivery if healthcare providers and patients are unable to effectively communicate. Efficacious interactions between healthcare practitioners and patients are crucial in health care settings, according to empirical research. This is because both parties need to fully comprehend the other's perspectives and objectives in order to give the best care possible.

Several reports from Malawian studies have shown the difficulty some ED doctors have in conveying vital information to their patients. One possible cause of the delays and complexities in service delivery in Malawi is the country's poor communication infrastructure. Kifle et al. (2017) advocate teamwork training, which teaches crucial communication skills and team behaviors, as a way to enhance the standard of care provided in the ED and reduce patient wait times. The majority of the research and writing on health care team training to date has concentrated on "closed environments" like ERs,

ICUs, and operating rooms. All caregivers in such places consider themselves to be part of a "unit-based" system.

The complicated nature of the work in ED makes it a high-pressure workplace. In order to deliver high-quality care to critically ill patients, EDs mix humanistic methods to caring with considerable dependence on the most current technology (Almansour & Razeq, 2021). Because patient care entails extensive use of technologies, which can supersede other components of care and generate emotions of alienation, the risk of technological dehumanization is an issue. Because of their inability to speak for themselves, doctors and nurses must approach the care they provide for patients who are unconscious or on mechanical ventilation (MV) in a slightly different way than they would for other patients (Mahvar et al., 2020). Since the concept of caring is multifaceted and abstract, nursing care falls within its umbrella. There is a need for intrapersonal, interpersonal, and transpersonal communication among all members of the emergency department's health care team, not only the patient and their loved ones (Holm et al., 2021). Therefore, the type of care the someone requires or the nature of communication may be part of the care that is communicated and cared for.

2.7 Summary of Literature Review and Knowledge Gaps

Due to the difficulty of providing high-quality services with limited resources, health care systems have placed a larger emphasis on resource efficiency. Increasing use and access through eliminating delivery delays is, thus, one of the most crucial operational concerns in health care delivery. Several factors can influence the efficiency of health care operations and the establishment of bottlenecks. These include the daily volume of

patients seen, the sorts of patients treated in terms of stage of treatment or sickness, clinic policies about the frequency of patient visits, the type of provider they should see, the number and makeup of the providers, and the staffing model.

Following deficiencies were identified: Even though staff members are present at the service point, they may not be able to attend to patients properly because they are preoccupied with something else. Patients may be waiting to be seen, and staff may be ready to see them, but they are unable to do so owing to a shortage of equipment, rooms, or other logistical considerations.

CHAPTER THREE

METHODOLOGY

3.1 Overview

This chapter introduces the research methodology to be used in this study. It encompasses the research design, study site, target population, sampling procedure, sample size, ethical considerations, data collection, data analysis and presentation of the findings.

3.2 Research Design

Research design refers to the arrangement of conditions, strategies, and processes for research, such as data collection and analysis methodologies, in order to acquire information pertinent to the research purpose. In this study, a descriptive cross-sectional research design was utilized. This structure is useful for distinguishing aspects of an observed phenomenon. This strategy is ideal for this study because, as In, J., Kang, et al. (2020) explain, descriptive research designs are meant to offer statistical information regarding characteristics of the research subject that may be of interest to policymakers. This study's data was collected at a single point in time between April 3 and May 25, 2018.

3.3 Study Area

The research was conducted in the Khunyangu Sub-County Hospital in Busia, Butula Sub-County, Marachi Central Location, and Kingandole Sub-location. However, the primary sub county hospital for Butula Sub County is Khunyangu Hospital. The hospital can accommodate up to 50 in-patients and more than 400 out-patients every month (Khunyangu Health and Information Records, 2017). Maternity, inpatient, MCH, CCC, VMMC, outpatient, pharmacy, laboratory, and physiotherapy are only few of the services

offered at this facility. The emergency room is one of nine services listed under the outpatient unit. This research was limited to the emergency department.

Khunyangu Sub-County Hospital is a category IV facility. As the primary referral facility for Butula sub-county, Khunyangu sub-County Hospital was chosen to perform the study. What's more, a 2016 survey of patients in the emergency department of Khunyangu hospital found that waiting time had a direct correlation with their satisfaction with the facility's outpatient services (Khunyangu Health Facility Report, 2016). Nobody has ever bothered to study how long people have to wait to get help. There are a total of 14 dispensaries and 14 community health facilities in the Butula sub-county. The hospital serves a population of around 25,154, as of the midpoint of 2016. High unemployment and a rural designation characterize Butula Sub County. Currently, the Khunyangu hospital's ED is located in a cramped area because an expansion project is still in the works. The Khunyangu's emergency room sees an average of 366 people each month, or 14 patients per day.

3.4 Target Population

Participants in this study were adults who had come to the Emergency Department of the Khunyangu sub-County Hospital for medical attention. Data were also obtained from health care professionals who provided direct care to patients in the Emergency Department of the Khunyangu sub-County Hospital.

3.5 Sample Size Calculation

In this study, the unit of sample was the patients seeking care. A sample is a subset of the target population that has been procedurally selected to be representative of that

population (In et al., 2020). According to the records officer at KSCH, fourteen patients are registered daily on average. In April 2020, the ED at K.S.C.H. saw 400 patients. Yamane (1967) presents a basic formula for calculating sample size. This formula was used to determine the sample sizes in the sample frame when doing quantitative data research. The sample size (n) was calculated as follows:

$$n = \frac{N}{1+N(e)^2}$$

Where n is the sample size, N is the population size and e is the level of precision.

Therefore, N= 366 patients seen at Khunyangu emergency department per month.

$$n = \frac{366}{1+ 366\ (0.05)^2}$$

$$= 191.04 \sim 191$$

n= 191 The sample size of 191 was used for this study.

3.6 Sampling procedure

Systematically, all patients who met the inclusion criteria and were seen in the ED were sampled for the study. Systematic sampling, which is a probability-based sampling technique, gave all study participants an equal opportunity to participate. The researcher identified every nth patient for inclusion in the study using the register at the ED where patients are triaged and entered as they arrive. In a given month, the emergency department sees a total of 400 patients, which equates to an average of (14 patients) every day.

The sampling interval was obtained by dividing the population size (400) by the intended sample size (191), which resulted in a value of 2.09. As a result, the nth (sampling interval)

for this study was every 2nd patient seen in the ED throughout the study period. Health professionals working in the Emergency department were purposefully chosen for the study.

3.7 Inclusion and Exclusion Criteria

3.7.1 Inclusion Criteria

The researcher used the following criteria to include participants into the study:

1. Patients who were 18 years of age and above seeking services at Khunyangu emergency department.
2. Adult patients who gave consent to participate in the study.

3.7.2 Exclusion criteria

1. Patients who did not consent.
2. Patients who had mental impairment

3.8 Study variables

3.8.1 Dependent Variable

The dependent variable was time spent waiting. It is a continuous variable measured as the total and average waiting time per section. The total average waiting time was a continuous variable generated by summing the waiting periods for each sector. The total waiting time represented the length of time a patient must wait to obtain service.

3.8.2 Independent Variable

The independent variables comprised patient-specific characteristics, facility-specific variables, and healthcare provider-specific variables. The variables that may be modified

included the service charter, policies and procedures, and processes.

3.9 Data Collection Tools

Patients' quantitative information was gathered using a standardized questionnaire. A key informant interview plan was used to acquire qualitative data from health care employees. This instrument was used to collect staff opinions on patient waiting time and factors that influence it at the ED, as well as any recommendations or solutions that could reduce waiting time at the ED.

3.10 Validity and Reliability of the Research Instrument

The data gathering tools were pilot tested at Alupe sub county Hospital in Teso south sub county in Busia county. Ten patients and two medical staff members were interviewed for the pilot study. Cronbach's Alpha, a measure of the internal consistency of items for use in comparing those based on expectation and those based on observation, was calculated, and it was found to be 0.80. Most social science studies will accept a Cronbach's Alpha of 0.70 or higher as an adequate measure of reliability (Cronbach & Shavelson, 2004).

3.11 Data Collection Procedure

The research assistants received two days of training on the study's concepts, methodology, and how to use the tool. The data was gathered in two stages, from patients and healthcare providers. Patient From the time a patient checked into the emergency department (ED) to the time they were either transferred to the ward, referred to other facilities, or discharged, their wait times at the ED and at various service points were recorded. Time in the ED was broken down into two categories: service time, or the amount of time a patient spent interacting with a healthcare provider, and waiting time, or the amount of time a patient spent waiting to be seen. Health care providers at each service point were tasked with recording the timestamps of patient arrival and departure in the patient's record. Research assistants would collect the file at the end of service in ED, make a note of the timestamps at each point of service, and then calculate the time it took to move between each service point to determine how long patients waited at each section. Trained Research assistants conducted the interviews with patients after they were discharged from the ED.

3.12 Data Management

At the end of each day, all questionnaires were reviewed for completeness and consistency, cleaned, and those found to be missing information or containing errors were amended. After collecting all of the data from the completed surveys, it was entered into SPSS 26 for analysis. The researcher was the only person who had access to the completed surveys, guaranteeing the participants' anonymity and confidentiality.

3.13 Data Analysis

Data was encoded, which signifies that educational materials were categorized and allocated numbers. Descriptive statistics, including frequency counts and percentages, were used to examine the quantitative data gathered via questionnaires. In order to calculate how much each independent variable influenced the outcome, we used correlation and multiple regression analysis. The research questions informed the thematic analysis of the qualitative data collected.

3.14 Ethical Considerations

The researcher addressed each potential participant individually, informed them of the study's objectives and methods, and offered them to participate in the interview after obtaining their signed informed consent. The researcher fostered an informal environment and promoted open dialogue. Participants' confidentiality and anonymity were maintained by the use of codes instead of their names. Prior to the interview, verbal and written consent was obtained from all participants. Patients were advised that participation was voluntary, and those who chose not to participate were guaranteed that they would not be discriminated against or treated poorly in relation to the service they will receive. Patients were also advised that they may withdraw from the study at any time without having to provide an explanation to the researcher.

3.14.1 Beneficence

Participants were guaranteed protection from any kind of physical, mental, financial, or social harm in accordance with this guiding concept. It was mitigated by asking questions in a considerate, nonjudgmental way. Patients who had been in critical condition were

interviewed after they had made a full recovery. Participants were told they could leave the interviews at any time if they felt uneasy, and that if necessary, new dates would be arranged.

Participants would be protected from exploitation by not being placed in unsafe or unanticipated settings. Before beginning the interview, the respondent was given detailed instructions on how to participate in the study. Participants were advised that there would be no immediate perks to taking part in the study, but that the data collected could be used by healthcare professionals and policymakers to develop plans to enhance the standard of care in emergency departments.

3.14.2 Respect for Human Dignity

The rights to autonomy and transparency were foundational ethical principles that upheld the worth of every person. Participants in this study would be given the opportunity to ask questions and make a fully informed decision about whether or not to participate in the study. Individuals must be given all relevant information before they may make a fully informed, free decision about participating in a study. The pre-interview informed consent document reflected this information accurately.

3.14.3 Justice

Rights to privacy and equal treatment are included in this guiding concept. Participants were selected in a nondiscriminatory manner, all procedures were strictly followed, participants were given the researcher's contact information so they could ask questions at any point during the study, and participants were treated with respect and courtesy at all times. The respondents' right to privacy was protected by using codes instead of writing

their names on the questionnaire. This ensured that the sources of the information remained concealed. All returned questionnaires were securely locked up, with only the lead researcher having the key.

3.14.4 Confidentiality

Confidentiality was maintained to safeguard respondents' answers. The confidentiality of the participants' responses was protected throughout this investigation. In order to protect the anonymity of the participants, they were all given numbers rather than names. All of the RAs who had any kind of interaction with the research data also signed nondisclosure agreements. Only the lead researcher, the interviewers, and the reviewers of the data collected would have access to the completed questionnaires, and they would not release the material to anyone else without the participants' express consent.

3.14.5 Informed Consent

Participation was entirely voluntary, and participants were given the option to withdraw from the study at any time without repercussions. This study adhered to the four tenets of informed consent.

3.14.6 Ethical Approval

MMUST's Institutional Ethical Review Committee was consulted and gave its blessing for the study to proceed. An application for approval to perform the study was submitted to NACOSTI, and approval was given. Research in KSCH was approved after being approved by the Hospital Health Management group.

CHAPTER FOUR

RESULTS

4.1 Overview

This chapter gives the results of the collected data. The response rate was presented initially to see if the data were sufficient for data analysis. Second, the demographic information of respondents was presented, followed by study objectives-driven findings.

4.2 Response Rate

In this study, 191 patients at the emergency room of the Khunyangu sub - county hospital in Kenya filled out questionnaires. All 191 surveys were returned by patients for a perfect response rate. According to Mugenda & Mugenda (2003), a response rate of 50% is sufficient for data analysis and reporting, a response rate of 60% is good, and a response rate of 70% or more is great. This response rate was adequate. Best and Khan (2006) state that returns in excess of 60% are regarded as excellent.

4.3 Social Demographic Characteristics of Respondents

This information comprised of gender, age distribution, marital status, education level and occupation of the patients, the results show that majority of patients seen at this facility are females (n=108, 56.5%). Majority of the respondents were between 25-31 years (n=67, 35.1%). It was also observed that majority of the respondents were married (n=122, 63.9%). Additionally, majority of the respondents (n=61, 31.9%) had finished secondary school and 36.6%(n=70) indicated that they were unemployed. See summary on Table 4.1

Table 4.1: Socio demographic characteristics of the Respondents

Socio-demographic characteristics	n	%

Gender	Male	83	43.5
	Female	108	56.5
Age in years	18-24	38	19.9
	25-31	67	35.1
	32-38	33	17.3
	39-45	30	15.7
	46-52	14	7.3
	53-59	7	3.7
	Above 60	2	1.0
Marital status	Single	53	27.7
	Married	122	63.9
	Widow	3	1.6
	Separated	13	6.8
Education level	Illiterate	22	11.5
	Finished primary school	52	27.2
	Finished secondary school	61	31.9
	Finished vocational school	33	17.3
	Finished bachelor degree	22	11.5
	Others	1	0.5
Occupation	Unemployed	70	36.6
	Government employed	27	14.1
	Labor employed	14	7.3
	Non-government employed	29	15.2
	Agriculture	28	14.7
	Student	18	9.4
	Others	5	2.6

4.4. Patient waiting time

On average patients take 55.3 minutes at the ED. With regard to waiting time at the different sections, the longest waiting time is at the clinician's area (13.1 minutes) as shown in table 4.2

Table 4.2: Average waiting time at different service points

Service point	Average waiting time (Minutes)
Records office	5.8
Nursing station	7.8
Clinicians' area	13.1
Pharmacy	5.5
Average time spent at the facility	55.3

4.4.3 Patient rating of waiting time at service points

Respondents were asked to rate their waiting time at various points in the office. Findings revealed that majority of the respondents (n= 112, 58.6%) reported to have waited fairly long at the records office. At the nursing office most respondents (n=76, 39.8%) reported that the waiting time was appropriate, however in the doctor's room majority of the respondents (n=92, 48.2%) reported that they waited fairly long. At the pharmacy, majority of the respondents reported that they waited too long (n=95, 49.7%). A summary of the findings is found in Table 4.3.

Table 4.3: Waiting time at various sections

How would you rate the waiting time at each of these points?	Appropriate		Fairly long		Too long	
	N	%	n	%	n	%
Records office	54	28.3	112	58.6	25	13.1
Nursing office	76	39.8	66	34.6	49	25.7
Doctors room	44	23.0	92	48.2	55	28.8
Pharmacy	25	13.1	71	37.2	95	49.7

Respondents were also asked how they thought the patient waiting time could be reduced and majority of the respondents (n=103, 53.9%) reported that improving staff availability at their stations would help, some (n=58, 30.4%) said that increasing staff per shift could help control, while a few (n=16, 8.4%) said that increasing service points would help reduce waiting time. Results from the key informant interview supported this through the following extracts, "*pharmacy, triage, laboratory and clinicians' rooms are the sections that cause a lot of delays for most patients*" (KII 1)

"Delays are caused by ….others may come in as friends, the so called socialism" (KII 2), Said by the ED nurse.

4.4.4 Overall computed waiting time

The overall computed waiting time mean score were calculated by getting a mean score from all the total responses from the four Likert scale items. The overall mean score was 1.9 (±0.317) (±SD). This score was used to rank respondents on overall perception of waiting time. The overall computation revealed that generally majority of the respondents (n=102, 53.4%) found the waiting time to be too long (see figure 4.1).

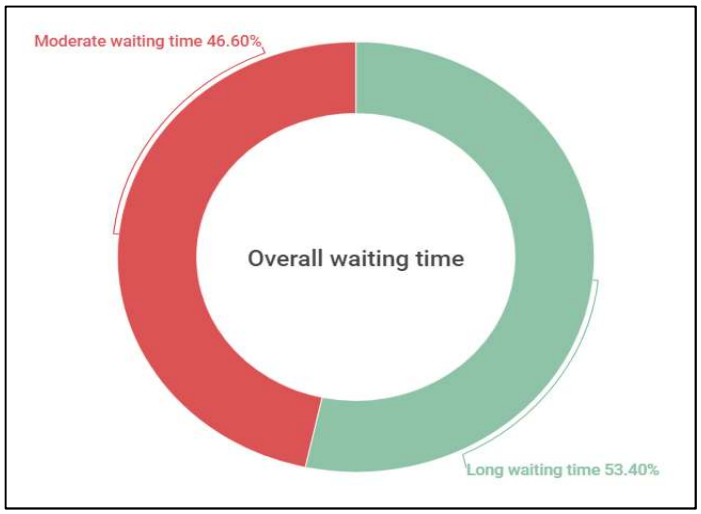

Figure 4.1. Overall computed waiting time.

4.5 Individual factors association with overall computed waiting time

Results from the chi-square statistics showed that there was an association between overall computed waiting time and occupation. The variables occupation ($\chi 2(df=6) = 14.147$, $p=0.028$) was statistically significant while the rest of the socio demographic variables were not statistically significant. A summary of finding is in Table 4.3

Table 4.4: Association between socio-demographic characteristics and overall computed waiting time

Socio-demographic characteristics		Computed overall waiting time				
		Long		Moderate		
		N	%	N	%	$\chi 2$, p
Gender	Male	39	20.4	44	23.0	2.428

	Female	63	33.0	45	23.6	P=0.119
Age	18-24 years	23	12.0	15	7.9	1.648
	25-31 years	35	18.3	32	16.8	P=0.949
	32-38 years	16	8.4	17	8.9	
	39-45 years	17	8.9	13	6.8	
	46-52 years	7	3.7	7	3.7	
	53-59 years	3	1.6	4	2.1	
	Above 60 years	1	0.5	1	0.5	
Marital status	Single	27	14.1	26	13.6	7.370
	Married	71	37.2	51	26.7	P=0.061
	Widow	0	0.0	3	1.6	
	Separated	4	2.1	9	4.7	
Education level	Illiterate	14	7.3	8	4.2	10.463
	Finished primary school	33	17.3	19	9.9	P=0.063
	Finished secondary school	34	17.8	27	14.1	
	Finished vocational school	12	6.3	21	11.0	
	Finished bachelor degree	8	4.2	14	7.3	
	Others	1	0.5	0	0.0	
Occupation	Unemployed	42	22.0	28	14.7	14.147
	Government employed	8	4.2	19	9.9	P=**0.028**
	Labor employed	5	2.6	9	4.7	
	Non-government employed	13	6.8	16	8.4	
	Agriculture	20	10.5	8	4.2	
	Student	11	5.8	7	3.7	
	Others	3	1.6	2	1.0	

4.6 Healthcare workers Related Factors

The respondents were also asked about health care workers related factors. Results showed that majority of the respondents (n=58, 30.4%) disagreed that the clinician spent enough time when examining them. Majority (n=69, 36.1%) also disagreed that there were enough medical personnel in the emergency department, moreover, majority (n=58, 30.4%) disagreed that nurses showed good communication skills. When probed further, majority (n=77, 40.3%) cited that pharmacist didn't explain the medicines clearly. In addition, majority (n=84, 44%) disagreed that there was enough registration staff in the emergency room. With regards to the waiting time for receiving OPD cars/ registration,

majority (n=71, 37.2%) disagreed that it was appropriate for the. Finally, Majority (n=54, 33.5%) disagreed that the waiting time for getting the prescribed drugs from the pharmacy was appropriate for them. A summary of the findings is in Table 4.5.

Results from the chi-square statistics showed that there was an association between overall computed waiting time and only one healthcare provider-related facility factor. The results showed that there was an association between respondents' responses on nurse' communication and overall computed waiting time ($\chi 2(df=4) = 10.140$, $p=0.038$), the rest of the factors were not significant (see Table 4.5).

Table 4.5: Influence of Health care provider factors on computed overall waiting time

Healthcare workers related factors		**Total**	**Computed overall waiting time**				**χ2, p**
			Long		**Moderate**		
			n	**%**	**n**	**%**	
The clinician spent enough time when examining you	Strongly disagree	47(24.6%)	32	16.8	15	7.9	8.391 P=0.078
	Disagree	58(30.4%)	24	12.6	34	17.8	
	Neutral	38(19.9%)	19	9.9	19	9.9	
	Agree	44(23.0%)	24	12.6	20	10.5	
	Strongly agree	4(2.1%)	3	1.6	1	0.5	
There were enough medical personnel in ED	Strongly disagree	57(29.8%)	28	14.7	29	15.2	1.290 P=0.863
	Disagree	69(36.1%)	40	20.9	29	15.2	
	Neutral	33(17.3%)	17	8.9	16	8.4	
	Agree	29(15.2%)	15	7.9	14	7.3	
	Strongly agree	3(1.6%)	2	1.0	1	0.5	
From your experience, nurses showed good communication skills	Strongly disagree	14(7.3%)	5	2.6	9	4.7	10.140 **P=0.038**
	Disagree	58(30.4%)	24	12.6	34	17.8	
	Neutral	48(25.1%)	26	13.6	22	11.5	
	Agree	50(26.2%)	32	16.8	18	9.4	
	Strongly agree	21(11.0%)	15	7.9	6	3.1	
From your past experience, pharmacist explained the of medicines clearly	Strongly disagree	28(14.7%)	16	8.4	12	6.3	1.727 P=0.786
	Disagree	77(40.3%)	42	22.0	35	18.3	
	Neutral	24(12.6%)	10	5.2	14	7.3	
	Agree	45(23.6%)	24	12.6	21	11.0	
	Strongly agree	17(8.9%)	10	5.2	7	3.7	
From your experience, there was enough registration staff in ED	Strongly disagree	63(33.0%)	31	16.2	32	16.8	4.487 P=0.344
	Disagree	84(44.0%)	46	24.1	38	19.9	
	Neutral	25(13.1%)	17	8.9	8	4.2	
	Agree	16(8.4%)	6	3.1	10	5.2	
	Strongly agree	3(1.6%)	2	1.0	1	0.5	

The waiting time for receiving OPD card/registration is appropriate for you,	Strongly disagree	37(19.4%)	21	11.0	16	8.4	2.954 P=0.566
	Disagree	71(37.2%)	37	19.4	34	17.8	
	Neutral	45(23.6%)	23	12.0	22	11.5	
	Agree	36(18.8%)	21	11.0	15	7.9	
	Strongly agree	2(1.0%)	0	0.0	2	1.0	
The waiting time for getting the prescribed drugs from pharmacy is appropriate for you	Strongly disagree	37(19.4%)	20	10.5	17	8.9	0.801 P=0.938
	Disagree	64(33.5%)	32	16.8	32	16.8	
	Neutral	35(18.3%)	19	9.9	16	8.4	
	Agree	44(23.0%)	24	12.6	20	10.5	
	Strongly agree	11(5.8%)	7	3.7	4	2.1	

4.6.1 Availability of Health Care Workers

The study also sought to determine the availability of various health care workers in various service stations; records officers were available (n=154, 80.6%), nursing station was having personnel available (n=134, 70.2%), a doctor was available in the doctor's room (n=122, 63.9%) and pharmacy also had an attendant (n=109, 57.1%).

When probed if they received communication on how long they would have to wait in the various stations' majority reported as follows; in the records room they received communication (n=102, 53.4%), in the nursing station they received communication (n=109, 57.1%), however in the doctor's room (n=161, 84.3%) and pharmacy (n=159, 83.2%) they did not receive communication (see Table 4.6). Further results on influence of availability of staff at their work stations on patient waiting time, revealed that respondents agreed that it did (n=148, 77.5%). Further when respondents were asked if staff at the clinic were available when needed almost half agreed that they are always available when needed (n=94, 49.2%). Finally, when asked what reasons they thought made staff to not be available respondents reported; lateness/absenteeism (n=75, 39.3%), shortage of staff (n=50, 26.2%) and many idle movements (n=26, 13.6%).

Results from the chi-square statistics showed that there was an association between overall computed waiting time and four healthcare provider-related facility factor related to availability and communication. The results showed that there was an association between respondents' responses on nursing officer availability ($\chi2(df=1) =18.152$, $p=0.000$), pharmacist availability ($\chi2(df=1) =6.636$, $p=0.010$) and overall computed waiting time. The responses on communication on waiting time for nursing station($\chi2(df=1) =6.636$, $p=0.010$) and pharmacy($\chi2(df=1) =7.205$, $p=0.007$) were also significant. The rest of the factors were not significant (see Table 4.6). results from the key informant interview supported this through the following extracts;

"*…a clinician may order for several investigations and after the patients have come back from the investigations, they do not normally wait but sometimes since we (nurses) are few, a patient will join the queue. You may find that the clinician has a long queue of patients with investigation results and another of new patients but some clinicians may not consider that*." KII 3

"*… at the triage, the patients go to the clinicians' room, thereafter depending with their conditions they are sent to various diagnostic departments like laboratory and X-ray, as he/she continues to see other patients the one sent for investigations return… so he has to finish those ones before he asks the nurse to usher in other patients. That is why the patients who come at about 10,11,12 delay here*." KII4

"*The county government should employ more staff especially nurses to help reduce the workload and balance staff-patient ratio*." KII 5

Table 4.6: Influence of Availability of health care workers on overall computed waiting time

Availability of health workers		Total	Computed overall waiting time				χ2, p
			Long		Moderate		
			N	%	n	%	
Records Office	Yes	154(80.6%)	83	43.5	71	37.2	0.078
	No	37(19.4%)	19	9.9	18	9.4	P=0.781
Nursing Station	Yes	134(70.2%)	85	44.5	49	25.7	18.152
	No	57(29.8%)	17	8.9	40	20.9	**P=0.000**
Doctor's Room	Yes	122(63.9%)	70	36.6	52	27.2	2.143
	No	69(36.1%)	32	16.8	37	19.4	P=0.143
Pharmacy	Yes	109(57.1%)	67	35.1	42	22.0	6.636
	No	82(42.9%)	35	18.3	47	24.6	**P=0.010**
Communicated to, on how long you will wait before the staff is available							
Records Office	Yes	102(53.4%)	56	29.3	46	24.1	0.198
	No	89(46.6%)	46	24.1	43	22.5	P=0.657
Nursing Station	Yes	109(57.1%)	67	35.1	42	22.0	6.636
	No	82(42.9%)	35	18.3	47	24.6	**P=0.010**
Doctor's Room	Yes	30(15.7%)	20	10.5	10	5.2	2.515
	No	161(84.3%)	82	42.9	79	41.4	P=0.113
Pharmacy	Yes	32(16.8%)	24	12.6	8	4.2	7.205
	No	159(83.2%)	78	40.8	81	42.4	**P=0.007**

4.7 Health facility related factors

The study also assessed health facility related factors and findings revealed that majority of the respondents (n=58, 30.4%) disagreed that signage was well done to ease getting direction, many (n=81, 42.4%) also disagreed that physical design facilitated good patient flow, while majority (n=54, 28.3%) disagreed that emergency department registration process was easily accessible. A summary of finding is in Table.

Results from the chi-square statistics showed that there was no association between overall computed waiting time and all health-related facility factors. The results were; Signage was well done thus ease getting direction ($\chi2$ (df=4) =4.161, p=0.385), Physical design facilitates good patient flow ($\chi2$(df=4) =4.017, p=0.404) and Emergency Department registration process ($\chi2$(df=4) =6.938, p=0.139) see Table 4.4.

Table 4.7: Influence of Health facility factors on computed overall waiting time

Health facility factors		Total	Computed overall waiting time				χ2, p
			Long		Moderate		
			n	%	n	%	
Signage was well done thus ease getting direction	Strongly disagree	53(27.7%)	26	13.6	27	14.1	4.161 P=0.385
	Disagree	58(30.4%)	29	15.2	29	15.2	
	Neutral	32(16.8%)	20	10.5	12	6.3	
	Agree	37(19.4%)	23	12.0	14	7.3	
	Strongly agree	11(5.8%)	4	2.1	7	3.7	
Physical design facilitates good patient flow	Strongly disagree	36(18.8%)	19	9.9	17	8.9	4.017 P=0.404
	Disagree	81(42.4%)	43	22.5	38	19.9	
	Neutral	46(24.1%)	29	15.2	17	8.9	
	Agree	21(11.0%)	8	4.2	13	6.8	
	Strongly agree	7(3.7%)	3	1.6	4	2.1	
Emergency Department registration process was easily accessible	Strongly disagree	54(28.3%)	30	15.7	24	12.6	6.938 P=0.139
	Disagree	40(20.9%)	21	11.0	19	9.9	
	Neutral	37(19.4%)	25	13.1	12	6.3	
	Agree	49(25.7%)	23	12.0	26	13.6	
	Strongly agree	11(5.8%)	3	1.6	8	4.2	

Results from key informant interview supported this through the following extract.

"…*there is so much back and forth movement of patients and their relatives in this facility, how i wish signage would be done and the physical design worked on to help get smooth patient flow*." (KII 5)

CHAPTER FIVE

DISCUSSION

This study sought to assess patient waiting time at the emergency Department, specifically to examine individual factors, health facility factors and healthcare provider factors influencing overall computed patient waiting time at the Emergency Department of Khunyangu Sub-County Hospital.

5.1 Socio-Demographic Characteristics

The majority of respondents in this study, 35.1% (n=67), were aged 25 to 31, which is younger than the mean age of 45 reported in a comparable survey performed in Karachi, Pakistan (Jawaid et al., 2009). Our study's lower mean age may be explained in part by the fact that more than half of the participants were younger than forty. One hundred and eighty-nine (56.5%) of the 191 respondents were female. Sixty-three percent (n=122) of respondents were married, while 27.7 percent (n=53) were single and 6.8 percent (n=13) were separated. Of the patients, 31% (n=61) had completed some level of secondary education. About a third of those polled (n=70) were now without gainful employment. While employment was shown to have a positive correlation with the overall computed waiting time (P = 0.028), none of the other sociodemographic characteristics were found to be statistically significant in this investigation. No association between gender and the length of the waiting period was identified in Arnesen's study (Bamgboye & Jarallah, 1994). Findings are consistent with those of earlier research conducted in Northwest Ethiopia and other underdeveloped nations (Taye et al., 2014).

5.2 Waiting time in emergency department

A patient's wait time or length of stay is the total amount of time they spend in the emergency department (ED) before being admitted to the hospital or discharged. Patient satisfaction is a key indicator of healthcare quality (Cassarino et al., 2019). Studies show that patients have the lowest levels of satisfaction when waiting times are longer than expected, moderate satisfaction when waiting times are regarded as being on par with expectations, and high satisfaction when waiting times are perceived as being less than expected. Among the findings: 58.6% of respondents experienced excessive wait times at the records office; 48.2% of respondents experienced excessive wait times at the doctor's office; and 49.7% of respondents experienced excessive wait times at the pharmacy. Results from Ibadan and India, on the other hand, revealed significantly higher levels of satisfaction with the studied services (Prasanna et al., 2009). This difference could be the result of a number of factors, including the hospital's social and cultural atmosphere and the availability of medical care.

Human resources, equipment availability, the registration process, and an oversupply of patients were similarly found to be major contributors to lengthy wait times in Malaysia (Labonte, 2004). An overwhelming majority of patients (80.2%), identified the clinic's lack of resources (too few doctors) as the reason for their extended wait time. Given the exponential increase in population without a corresponding increase in medical personnel, this is to be expected. In addition, the overall computed waiting time mean score was calculated for this study using the Likert scale. 53.4% of people said the waiting time was too long. That's consistent with the findings of a research by Cassariono et al. (2019), who

found that people felt the time spent in line to access their records was excessive. In terms of the Records division or office, this amounts to 78.6 percent of the total vote.

The majority of respondents (53.9%) believe that increasing the number of available workers at each station/point of service will help minimize patient wait times. The majority of respondents (8.4%) and (30.4%) believe that more service points and/or additional workers per shift can help minimize wait times. For the purpose of reducing patient wait times and more evenly distributing resource utilization, the current study focuses on developing work shift plans that make the most of available resource capacity. By rearranging the shifts of various employees across departments, Sinreich et al. (2012) found that they could reduce patient wait times by an average of 20–45 percent. These waits may be indicative of the situation in many third world nations, where a lack of medical professionals leads to an inadequate doctor-to-patient ratio. Long wait times for patients are common in developing nations because of a lack of medical professionals to treat them. As a result, health care facilities in these areas often fail to satisfy recommendations from the Institute of Medicine (IOM), which state that 90% of patients should be treated within 30 minutes of their planned appointment time (Valentine et al., 2003).

5.3 Individual factors associated with overall computed waiting time at Emergency Departments

A disparity between the number of health care professionals and patients might lengthen patient wait times. Without a corresponding growth in the number of medical professionals, the healthcare needs of a growing population have gone unmet. WHO

recommends a ratio of 1 doctor per 1000 people. Nez et al. (2018) found that in the world's 25 poorest countries, including Nigeria, the number of physicians to patients is only 1 in 25,000. This pattern ensures that wait times in our GOPDs will always be expressed as a decimal.

While this research was being conducted, the ED was staffed by two doctors at all times. Each day, one of these two doctors on call takes care of the most seriously ill patients. This doctor or nurse practices in the emergency room. Once in a while, when there were no unstable patients, she would treat those who were doing fine. In the setting of Kenya's public health facilities, having three clinicians on duty for an average of 15 ED patients each day appeared fair. However, this number of physicians becomes insufficient to avoid overcrowding in the ED and, in turn, reduce patient waiting time as patient problems become more complex and clinicians attempt to conduct all minor operations simultaneously. There was a significant decrease in reported patient wait times at emergency departments where more healthcare staff were present, according to the available research (Chicoine & Guzman, 2017).

Both developed and developing countries have been recognized to have long wait periods for patients, although wait times may vary from one country to the next and even from one hospital to the next within the same region (MaddiNeshat et al., 2015). Similarly, this was found in this research. Our responders' most popular explanation for the lengthy wait times was an insufficient number of healthcare staff to deal with the throngs of patients waiting to be seen. The Holy Family Hospital in Tuchman, Ghana, has the longest average waiting time at records, at 74.5 minutes, according to a survey (Appiah, 2019). Long lines are commonplace at Ethiopia's hospitals and clinics. Research at the Jimma University

specialized hospital indicates that patients often wait 4.5 hours before being seen (Assefa, 2011).

5.4 Health Care Provider Factors affecting overall computed waiting time at Emergency Departments

This study found that the availability, specialization, and communication skills of healthcare providers had an effect on estimated patient wait times. Nasiri et al. (2012) found that patients and their caregivers perceive high patient volume, lack of timely physician presence, poor communication, and insufficient manpower as the primary causes of patient wait times. The primary reasons for medical treatment delays include patient restlessness, a lack of guiding signs, poor communication, and a shortage of staff, as stated by MaddiNeshat et al. (2015). Patient wait times are affected by several factors, but some of the most important ones have been identified by other research as a lack of staff and equipment, an increase in the number of patients visiting emergency rooms, financial challenges for patients, and a distance between hospital wards.

According to Tabibi et al. (2009), there are discrepancies in patient waiting times between the institutions that were analyzed. On the subject of how long patients waited to receive care at the hospitals in question, the current study's results are consistent with those of Masoumpour et al. (2013). (the screen and triage wards). Research by Bukhari et al. (2014) on decreased patient wait times at the Al-Nour Specialized Hospital in Mecca corroborated the findings of the current study. Results from the current study are consistent with those from a study by Horwitz et al. (2010a) that examined the reduction of patient wait times at an emergency room in Saskatchewan, Canada. The availability of

healthcare practitioners, their expertise, and good communication have all been linked to long wait times and patient stays in emergency rooms, according to studies conducted in various regions of the world.

This study's findings of long wait times are likely linked to the overcrowding of healthcare facilities and personnel in developing countries. Patients in Nigeria would have to wait longer to see a doctor until the disparity in the number of doctors and patients is corrected. Our respondents identified a shortage of medical personnel as the primary reason for the lengthy wait times. This is a common occurrence across the board in Kenyan hospitals due to a shortage of medical personnel. Similar factors were uncovered in the studies conducted at Nigeria's Jos University Teaching Hospital (JUTH) (Galluch, 2015). If there were an excessive number of patients or healthcare workers, wait times for patients would increase. The number of people needing medical treatment has increased dramatically over time, but the number of doctors and nurses has not. The World Health Organization (WHO) recommends at least one physician for every 1,000 residents. Just one physician serves every twenty-five thousand citizens in the world's 25 poorest countries, including Nigeria. If this trend continues, our GOPDs will have an average waiting time for patients that is a decimal.

5.5 Health facility factors affecting overall computed waiting time at Emergency Departments

Many respondents apparently disagreed, sometimes strongly, that the current physical characteristics at the healthcare institution facilitated good patient flow. For example, 30.4% of people polled didn't think the signs were enough, and 27.7% of those people

were strong naysayers. Horwitz et al. found that inefficient workflow between the three stages of a patient's arrival at the emergency unit, the provision of services, and the patient's release contributed to the long waiting time and stay of patients in emergency units in other parts of the world (2010b).

According to Dalili et al. (2020), a lack of direction signs, poor communication, a lack of manpower, and impatient patients are the most significant causes of delays in receiving medical services. In addition, other studies have identified factors such as the distance between hospital departments, the financial difficulties of patients, the number of patients visiting the emergency units, and the lack of human resources and equipment (provided by the health facilities) to serve patients as major contributors to patient waiting times. The results of the current study were supported by the findings of a study conducted by Benning et al. (2017) on decreased waiting time of patients in the emergency unit of Al-Nour Specialized Hospital of Mecca in 2015. Consistent with the present study's findings are the findings of a study by Cassarino et al. (2019) on the shortened wait times in the emergency unit of Saskatchewan in Canada.

CHAPTER SIX

CONCLUSION AND RECOMMENDATIONS

6.1 Overview

This chapter presents the conclusion and recommendations of the study.

6.2 Conclusion

The overall conclusion from this study is that patients wait longer to receive services in different departments in this facility.

6.2.1 Individual factors associated with waiting time at Emergency Departments

According to this study, occupation of the patients influenced the overall waiting time significantly while the other factors such as gender, age, marital status and education level did not influence patient waiting time to receive services in the Emergency Department.

6.2.2 Health Care Provider Factors affecting waiting time at Emergency Departments

According to this study, availability of healthcare workers in different service station influenced the patient waiting time. In addition, communication on waiting time was not well done as there was a disagreement that nurses showed good communication skills, while the other healthcare provider factors did not influence the patient waiting time.

6.2.3 Health facility factors affecting waiting time at Emergency Departments

According to this study, all the health care facility factors to include signage, physical design and Emergency Department registration process did not influence the patient waiting time.

6.3 Recommendations

Patient waiting time can greatly be improved if the health facility management adopts the following recommendations.

6.3.1 Individual factors associated with waiting time at Emergency Departments

The health facility management should ensure that all healthcare providers exercise the patients' bill of rights without any discrimination against, age, gender, occupation marital status of education level

6.3.2 Health Care Provider Factors affecting waiting time at Emergency Departments

The health facility should increase the number of healthcare workers and ensure that the health care workers are available all round the clock to offer services to patients as this will help reduce the long waiting time.

6.3.3 Health facility factors affecting waiting time at Emergency Departments

The health facility should work on putting signage within the hospital to help show direction and reduce delays in patient seeking services. The hospital management should equally work on restructuring the physical design of the patient in order to improve patient flow.

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APPENDICES

APPENDIX I: CONSENT FORM

Introduction:

Good Morning/afternoon Sir/Madam. My name……. from Masinde Muliro University of Science and Technology. We are conducting a study to measure the duration and factors associated with patient waiting time. You have been selected as a participant and to give your views about your experience about the timeliness of services you will receive

Procedure

You will be given a card for identification purposes and followed from a distance by a research assistant as you go through the assessment process. At the exit point/ discharge, a short questionnaire will be administered to you by the research assistant who will read to you the questions. You will tell the researcher your answer to the question. The interview will take not more than 5 minutes. We shall be grateful for your participation.

Benefits and risks

The information provided by you was used only for the purpose of this study and will also be used by hospital administration to identify the bottlenecks in services delivery. Apart from the extra time you will spend with the research assistant for the interview, there are no risks expected.

Confidentiality

All the information obtained from you during the study will remain confidential and only accessed by the principal investigator. You name will not be recorded anywhere during

the study or report findings. So please feel free to participate and answer the questions.

Voluntary consent

Your participation in this study is completely voluntary. Feel free to ask any questions before or after the interview. You are also free to withdraw from the study at any time or decline to participate in the study and you will not be penalized if you decide to do so.

I have read the above or the above has been read to me and I have understood it. I hereby do agree to participate in the study.

Respondent's signature: _____ Date: ___ / ___ / ____

Interviewers Signature: _____ Date: ___ / ___ / ____

For more information about the study, please contact **Prudence Yawetsi** on 0720806605

APPENDIX II: QUESTIONNAIRE: Waiting time in emergency department services

Your response will be for purpose of research and will not be exposed to anyone for any other purpose. The information provided will help in improving the service of health care. Therefore, honesty on part of the response is expected.

Serial no…… Date of interview: / / **(dd/mm/yy)**

Name of interviewer: …….

PART A: SOCIO–DEMOGRAPHIC FACTORS

Please check (√) the appropriate answer in the boxes or fill in the blanks as required.

1. What is your Gender? ☐ Male ☐ Female

2. What is your Age (in years)? ……

3. What is your marital status ☐ Single ☐ Married

Widow ☐ Separated ☐

4. What is your highest Education Level?

Illiterate ☐ Finished primary school ☐ Finished secondary school ☐

Finished vocational school ☐

☐ Finished bachelor degree others (specify)…….

5. What is your current occupation?

☐ Unemployed ☐ Government Employed

☐ Labor Employed ☐ Non- Government Employed

☐ Agriculture ☐ Student

☐ Others (specify)……

PART B: PATIENT WAITING TIME

6. How would you rate the waiting time at each of these points?

Service point	Appropri ate	Fairly long	Too long
Records office	[ ]	[ ]	[ ]
Nursing station	[ ]	[ ]	[ ]
Clinicians room	[ ]	[ ]	[ ]
Pharmacy	[ ]	[ ]	[ ]

7. Which area(s) in the clinic contribute to or made you take long in the facility today?

a) Records office [ ]

b) Nursing station [ ]

c) Clinicians room [ ]

d) Pharmacy [ ]

8. **How do you think the patient waiting time can be reduced?**

a) Increase staff per shift [ ]

b) Improve staff availability at their status [ ]

c) Introduce appointment system [ ]

d) Increase service points [ ]

e) Don't know [ ]

f) Other (Specify)…….

9. **How do you feel about the overall time spent in the facility today?**

a) Acceptable [ ]

b) Not acceptable [ ]

PART B: HEALTH WORKERS RELATED FACTORS

10. Did you find a health worker to attend to you at each of the following stations when you arrived?

a) Records Office Yes [ ] No [ ] b) Nursing Station Yes [ ] No [ ]

c) Doctor's Room Yes [ ]No [ ] d) Pharmacy Yes [ ] No [ ]

11. If No, in any of the above, were you clearly communicated to, on how long you will wait before the staff is available to serve you?

a) Records Office Yes [ ] No [ ] b) Nursing Station Yes [ ] No [ ]

c) Doctor's Room Yes [ ] No [ ] d) Pharmacy Yes [ ] No [ ]

12. Do you think availability of staff at their work stations affects how long a patient waits in the clinic?

a) Yes . [ ] b) No. [ ] c) Not sure [ ]

13. In your opinion what reasons may cause staff not to be available at their work stations?

a) Lateness/Absenteeism [ ] b) Shortage of staff [ ] c) Many idle movements [ ]

d) Don't know [ ]

PART C: HEALTH FACILITY FACTORS AFFECTING PATIENT WAITING TIME.

Degree of Agreement	**Strongly disagree**	**Disagree**	**Neutral**	**Agree**	**Strongly Agree**
	1	2	3	4	5
I) Signage was well done thus ease getting direction					
ii)Physical design facilitates good patient flow					
iii)Emergency Department registration process was easy accessible					

Experience of patient about waiting time in Emergency/ Outpatient Department

Physical Facilities	**Strongly disagree**	**Disagree**	**Neutral**	**Agree**	**Strongly Agree**
	1	2	3	4	5
Health Care Worker Services					
i)From your experience, the clinician spent enough time when examining you					
ii)From your experience, there were enough medical personnel in ED					
Nurse services					
iii)From your experience, nurses showed good communication skills					
Pharmacy services					

i)From your past experience, pharmacist explained the of medicines clearly					
Registration service					
i)From your experience, there was enough registration staff in ED					
Accessibility to Emergency services in terms of waiting time					
i)The waiting time for receiving OPD card/registration is appropriate for you,					
ii)The waiting time for getting the prescribed drugs from pharmacy is appropriate for you					

OVERALL IMPRESSION

15. Was the main reason you went to the Emergency Department dealt with to your satisfaction?

☐ Yes, completely ☐ Yes, to some extent ☐ No

16. How well organized was the Emergency Department you visited?

☐ Not at all organized ☐ Fairly organized ☐ Very well organized

17. Overall, did you feel you were treated with respect and dignity while you were at the Emergency Department?

☐ Yes, all of the time ☐ Yes, some of the time ☐ No

18. Overall, how would you rate the care you received at the Emergency Department?

☐ Excellent ☐ Very good ☐ Good ☐ Fair ☐ Poor ☐ Very poor

19. Would you recommend this Emergency Department to your family and friends?

☐ Yes, definitely ☐ Yes, probably☐ No

20. While at the hospital, did you ever see any posters or leaflets explaining how to complain about the care you received?

☐Yes ☐No ☐ Don't know / Can't remember

END

APPENDIX IV: APPROVAL LETTER FROM DIRECTORATE OF POSTGRADUATE STUDIES

MASINDE MULIRO UNIVERSITY OF SCIENCE AND TECHNOLOGY (MMUST)

Tel: 056-30870
Fax: 056-30153
E-mail: deansgs@mmust.ac.ke
Website: www.mmust.ac.ke

P.O Box 190
Kakamega – 50100
Kenya

Office of the Dean (School of Graduate Studies)

Ref: MMU/COR: 509079 **Date:** 12th October, 2016

PrudenciaYawetsi Shisundi
HNR/G/50/2014
P.O. Box 190-50100
KAKAMEGA

Dear Ms. Shisundi,

RE: APPROVAL OF PROPOSAL

Following communication from the Departmental Graduate Studies Committee and the Faculty Graduate Studies Committee, I am pleased to inform you that the Board of the School of Graduate Studiesmeeting held on 4th August, 2016considered and approved yourMasters proposal entitled: ***'Factors Influencing Patient Waiting Time in Emergency Care Department at Khunyangu Sub-County Hospital of Butula Sub County, Kenya"*** and appointed the following as supervisors:

1. Prof. Elijah Nyangena - Department of Clinical Nursing - MMUST
2. Ms. Doreas Maina - Thematic Area Medical Surgical Nursing- UON

You are required to submit through your supervisor(s) progress reports every three months to the Dean SGS. Such reports should be copied to the following: Chairman, School of Nursing and Midwifery Graduate Studies Committee and Chairman, Clinical Nursing and Health Management. Kindly adhere to research ethics consideration in conducting research.

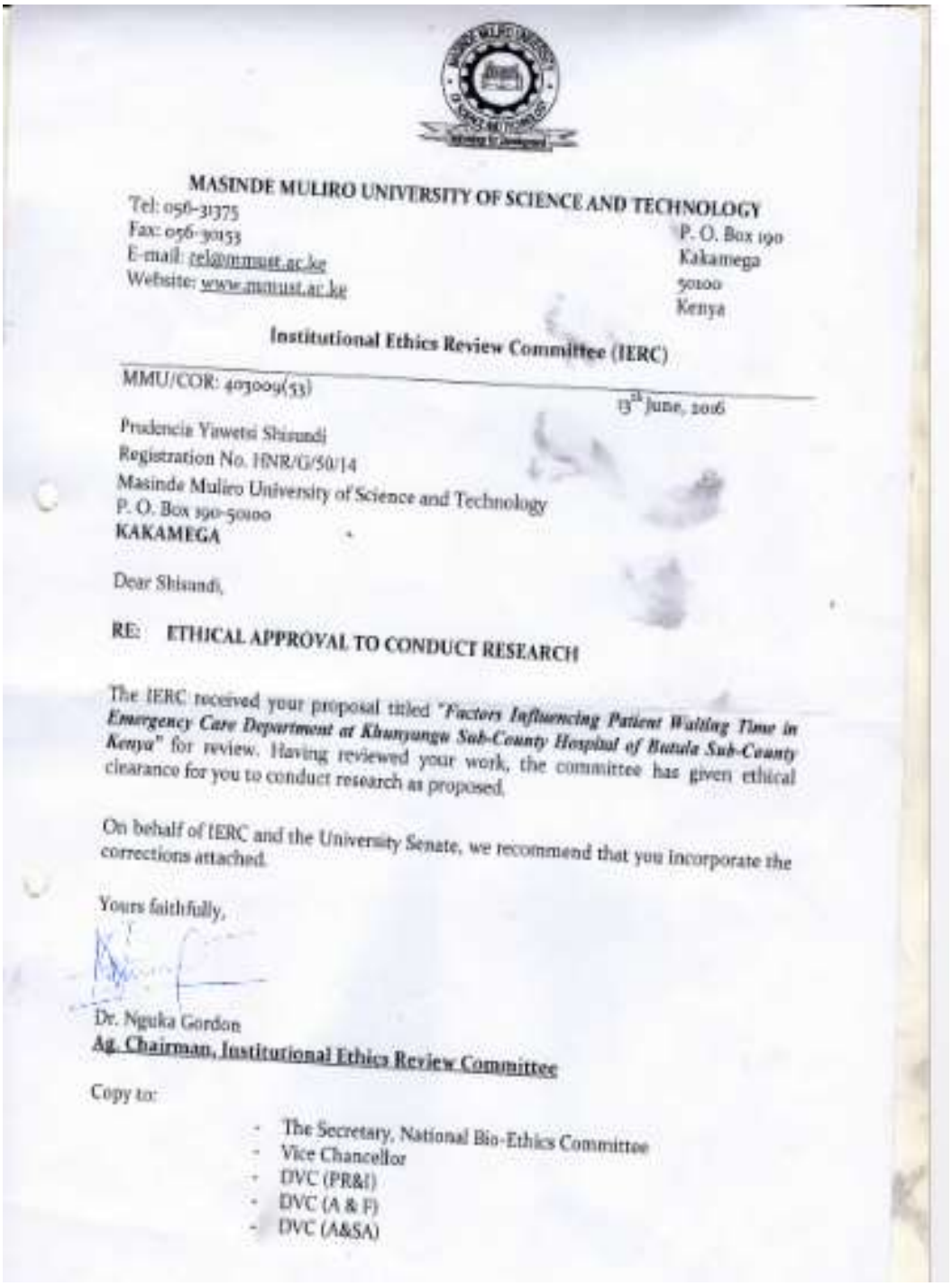
It is the policy and regulations of the University that you observe a deadline of two years from the date of registration to complete your Masters thesis. Do not hesitate to consult this office in case of any problem encountered in the course of your work.

We wish you the best in your research and hope the study will make original contribution to knowledge.

Yours Sincerely,

PROF. HENRY KEMONI
EXECUTIVE DEAN, SCHOOL OF GRADUATE STUDIES

APPENDIX V: APPROVAL LETTER FROM INSTITUTIONAL ETHICS RESEARCH COMMITTEE



MASINDE MULIRO UNIVERSITY OF SCIENCE AND TECHNOLOGY

Tel: 056-31375
Fax: 056-30153
E-mail: rel@mmust.ac.ke
Website: www.mmust.ac.ke

P. O. Box 190
Kakamega
50100
Kenya

Institutional Ethics Review Committee (IERC)

MMU/COR: 403009(53)

13th June, 2016

Prudencia Yiwetsi Shisundi
Registration No. HNR/G/50/14
Masinde Muliro University of Science and Technology
P. O. Box 190-50100
KAKAMEGA

Dear Shisundi,

RE: ETHICAL APPROVAL TO CONDUCT RESEARCH

The IERC received your proposal titled ***"Factors Influencing Patient Waiting Time in Emergency Care Department at Khunyangu Sub-County Hospital of Bungoma Sub-County Kenya"*** for review. Having reviewed your work, the committee has given ethical clearance for you to conduct research as proposed.

On behalf of IERC and the University Senate, we recommend that you incorporate the corrections attached.

Yours faithfully,

Dr. Nguka Gordon
Ag. Chairman, Institutional Ethics Review Committee

Copy to:

- The Secretary, National Bio-Ethics Committee
- Vice Chancellor
- DVC (PR&I)
- DVC (A & F)
- DVC (A&SA)

APPENDIX VI: RESEARCH AUTHORIZATION

NATIONAL COMMISSION FORSCIENCE, TECHNOLOGY ANDINNOVATION

Telephone:+254-20-2213471, 2241349,3310571,2219420
Fax: +254-20-318245,318249 ,
Email: dg@nacosti.go.ke
Website: www.nacosti.go.ke
When replying please quote

9th Floor, Utalii House
Uhuru Highway
P.O. Box 30623-00100
NAIROBI-KENYA

Ref: No. **NACOSTI/P/17/89019/18729** Date: **12th September, 2017**

Prudencia Yawetsi Shisundi
Masinde Muliro University of
Science and Technology
P.O Box 190-50100
KAKAMEGA.

RE: RESEARCH AUTHORIZATION

following your application for authority to carry out research on ***"Factors influencing patient waiting time in emergency care department at Khunyangu Sub-County Hospital of Butula Sub County, Kenya"*** I am pleased to inform you that you have been authorized to undertake research in **Busia County** for the period ending **12th September, 2018.**

You are advised to report to **the County Commissioner, the County Director of Education and the County Director of Health Services, Busia County** before embarking on the research project.

Kindly note that, as an applicant who has been licensed under the Science, Technology and Innovation Act, 2013 to conduct research in Kenya, you shall deposit **a copy** of the final research report to the Commission within **one year** of completion. The soft copy of the same should be submitted through the Online Research Information System.

GODFREY P. KALERWA MSc., MBA, MKIM
FOR: DIRECTOR-GENERAL/CEO

Copy to:

The County Commissioner
Busia County.

APPENDIX VII: RESAERCH PERMIT

Permit No : NACOSTI/P/17/89019/18729
Date Of Issue : 12th September,2017
Fee Recieved :Ksh 1000

THIS IS TO CERTIFY THAT:
MISS. PRUDENCIA YAWETSI SHISUNDI
of MASINDE MULIRO UNIVERSITY OF SCIENCE AND TECHNOLOGY, 84-50404 Bumala,has been permitted to conduct research in *Busia County*

on the topic: *FACTORS INFLUENCING PATIENT WAITING TIME IN EMERGENCY CARE DEPARTMENT AT KHUNYANGU SUB-COUNTY HOSPITAL OF BUTULA SUB COUNTY, KENYA*

for the period ending:
12th September,2018

.....
Applicant's Signature

.....
Director General
National Commission for Science, Technology & Innovation

CONDITIONS

1. The License is valid for the proposed research, research site specified period.
2. Both the Licence and any rights thereunder are non-transferable.
3. Upon request of the Commission, the Licensee shall submit a progress report.
4. The Licensee shall report to the County Director of Education and County Governor in the area of research before commencement of the research.
5. Excavation, filming and collection of specimens are subject to further permissions from relevant Government agencies.
6. This Licence does not give authority to transfer research materials.
7. The Licensee shall submit two (2) hard copies and upload a soft copy of their final report.
8. The Commission reserves the right to modify the conditions of this Licence including its cancellation without prior notice.

REPUBLIC OF KENYA

NACOSTI

National Commission for Science, Technology and Innovation

RESEARCH CLEARANCE PERMIT

Serial No.A 15724

CONDITIONS: see back page