ASSESSMENT OF CARDIOVASCULAR PATIENTS' SATISFACTION AND ITS ASSOCIATED FACTORS AT OUTPATIENT CLINIC IN JAKAYA KIKWETE CARDIAC INSTITUTE

Kuluthum Said Mohamed (BSc,N)

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Kuluthum Said Mohamed

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A Dissertation Submitted in Partial Fulfilment of the Requirements at

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June 2024

CERTIFICATION

These undersigned certify that /he has read and hereby recommend for examination by the Muhimbili University of Health and Allied Science this research project titled "**Assessment of Cardiovascular Patient's Satisfaction and its Associated Factors at Outpatient Clinic in Jakaya Kikwete Cardiac Institute"** in partial fulfillment of the requirement for the degree of Master of Science in Critical Care Nursing and Trauma of the Muhimbili University of Health and allied sciences.

Dr FATINA RAMADHANI
(Supervisor)

18/07/2024
Date

MISS SOFIA SANGA
(Co-Supervisor)

18th July 2024
Date

DECLARATION

I, **Kuluthum Said Mohamed** declare that this dissertation is my original work and that it has not been presented and will not be presented to any other university for a similar or any other degree award.

Signature: ..... **Date**.....18/7/2024.....

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DEDICATION

I dedicate this dissertation to my devoted parents, in appreciation of his constant encouragement and support. Special dedication to my brother for continued support, love, and caring for me.

I'm grateful.

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LIST OF ABBREVIATIONS

AOR	Adjusted Odds Ratio
COR	Crude Odds Ratio
CVD	Cardiovascular Disease
HIV	Human Immuno-Deficiency Virus
JKCI	Jakaya Kikwete Cardiac Institute
LMIC	Low and Middle- Income Country
MUHAS	Muhimbili University of Health and Allied Science
SDG	Sustainable Development Goals
SPSS	Statistical Package for Social Science
SSA	Sub-Saharan Africa
UHC	Universal Health Coverage

OPERATIONAL DEFINITIONS OF KEY TERM;

Dissatisfaction	It refers to a state of being displeased or unhappy due to unmet expectations or unfulfillment of desire in a particular situation (1,2).
Patient Satisfaction	It can be described as the patient's subjective assessment, expectations, and impression of the real treatment received (3).
Quality of health services	refers to how well healthcare systems and practitioners fulfill the requirements and prospects of the patient (2).
Satisfaction	refer to a state of contentment of fulfillment of one's expectations, desires, or needs in various contexts (4).
The level of satisfaction	Is the position or status of pleasure obtained from such fulfillment of desire?
Cardiovascular diseases	A wide array of medical conditions can arise within the cardiovascular system, which includes the following 4 entities: coronary artery disease (CAD) which is also referred to as coronary heart disease (CHD), cerebrovascular disease, peripheral artery disease (PAD), and aortic atherosclerosis(5)

ABSTRACT

Background: Cardiovascular Diseases are the leading cause of death worldwide, accounting for about 17.9 million deaths in 2019, which represents 32% of all global deaths and 80% for Low and Middle-Income Countries. Patient satisfaction reflects quality care. Factors like good interaction, respect, and low waiting time improve care. Tanzania is on a project to expand cardiovascular care but lacks data on patient satisfaction.

Aims: To comprehensively assess the dynamics of cardiovascular patient satisfaction with multifaceted factors associated with their contentment within the outpatient setting at Jakaya Kikwete Cardiac Institute.

Materials and methods: The quantitative analytical cross-sectional design was employed in this study with 273 participants. Data was collected using close-ended questionnaires. Data was analyzed using SPSS Version 25. Frequencies were obtained for descriptive statistics. Satisfaction domains were categorized as satisfied or unsatisfied using a cut-off point of 3, where >3 was termed as satisfied and < 3 unsatisfied. The overall satisfaction level was obtained by calculating the mean percentages of the categorized satisfaction domains. A bivariate analysis was carried out with $p<0.2$ was deemed fit for a multivariate analysis which set the p-value <0.05 as statistically significant.

Results; In a study of 273 participants, the majority were aged 35-55 (46.5%), with 52.4% male and 63.7% employed, though only 18.3% had high income. The majority 224 (82%) were satisfied and 49 (18%) dissatisfied with outpatients' services. Satisfaction was highly rated on cleanliness and staff communication, but low for waiting time (31.2%). Key factors influencing satisfaction included Living in Dar Es Salaam (AOR = 1.411, p = 0.016), higher income (AOR = 1.500, p = 0.044), and uninsured (AOR = 1.846, p = 0.014).

Conclusion: Despite cardiovascular patients in JKCI being satisfied overall with outpatient services study findings highlight there might be room for improvement in outpatients' services, especially in regards to reducing waiting time/adequacy staffing and addressing socioeconomic disparities towards quality cardiovascular outpatients' services.

CHAPTER ONE

1.0 INTRODUCTION

1.1 BACKGROUND

CVDs remain the leading cause of death globally, claiming approximately 17.9 million lives in 2019, which constituted 32% of all global fatalities. LMICs bear the majority of this burden, accounting for about 80% of CVD-related deaths. Projections suggest that by 2030, CVD-related deaths could rise to 23.6 million if appropriate preventive measures are not implemented, posing a significant health risk worldwide (6). Among non-communicable diseases, CVD accounts for 13% of global deaths, emphasizing the urgency of addressing this issue (7). Lifestyle modifications and an efficient healthcare system play a pivotal role in mitigating CVD-related mortality (8).

In response to the escalating burden of CVDs, the Tanzanian government has prioritized the enhancement of cardiac services and the overall quality of patient care as part of its healthcare improvement initiatives (7-8). While traditional assessments of healthcare quality have historically focused on professional standards, there is now a paradigm shift towards incorporating patients' perspectives as a crucial indicator of service quality (9–11). Patient satisfaction is increasingly recognized as a critical measure of healthcare quality, influencing treatment adherence, healthcare utilization, and clinical outcomes (5,12). Dissatisfied patients may be less likely to adhere to treatment recommendations and may seek alternative healthcare options, which can undermine the effectiveness of healthcare services at a given facility, (11-12).

Assessing the level of satisfaction of a patient with healthcare amenities is essential in determining the quality of care they receive (12). Patient satisfaction surveys are vital tools that provide insights into the quality of care from the patients' viewpoint, helping healthcare providers identify areas needing improvement (11-12). Assessing patient satisfaction encompasses evaluating specific domains, such as communication, accessibility, waiting times, staff behavior, and the overall environment, which directly affect the patient experience (12). These satisfaction domains are integral to understanding the overall level of satisfaction among patients and identifying factors that influence their perceptions of care quality.

In Tanzania, the healthcare sector is rapidly evolving to meet the growing demands of patients, driven by the goals of Universal Health Coverage (UHC) and the Sustainable Development Goals (SDGs) of 2030, which emphasize the need for high-quality healthcare services (9,13). However, dissatisfaction with healthcare services is still prevalent, particularly in LMICs like Tanzania, where healthcare quality often varies due to resource constraints (14). Studies conducted in Africa, including Tanzania and Malawi, indicate dissatisfaction among patients due to factors such as inadequate medical facilities and late staff reporting (1,15-16). Notably, caregiver dissatisfaction has been reported in a Tanzanian cardiac institute, with financial constraints and an unfavourable environment identified as significant challenges and leaving patient perspective unexplored (17).

Patient satisfaction in outpatient cardiac care is crucial, especially in settings where cardiac services face limitations and variable quality. Understanding satisfaction levels and the factors influencing them provides valuable insights into areas needing improvement (6). The Tanzanian government's efforts to enhance cardiac services involve collaboration with developed countries and allocating funds to expand services, underscoring the importance of incorporating patient satisfaction measurement into quality improvement initiatives (18).

This study aims to assess cardiovascular patients' satisfaction with outpatient services at JKCI and explore the factors influencing overall satisfaction levels. By examining specific satisfaction domains such as communication, waiting times, staff conduct, and facility environment, this study seeks to capture the patient experience and identify key determinants of satisfaction. The findings will contribute to the ongoing enhancement of healthcare services at JKCI, aligning with broader national efforts to improve cardiac care quality in Tanzania and providing evidence-based insights for future policy and practice improvements.

1.2 STATEMENT OF THE PROBLEM

The necessity for the healthcare sector to change and advance is shown in the growing concern around the world on patient satisfaction metrics. Among this transformation, a study reveals a significant dissatisfaction rate of over 60% among the population in low-middle-income countries accessing hospital facilities. This dissatisfaction is notably linked to the socioeconomic structure of the country (1).

In a qualitative study conducted at a JKCI, caregivers expressed dissatisfaction, particularly with the education provided by nurses and the condition of hospital toilets. However, the patient's perspective remains largely unexplored (17). Although research has been done in other regions of the world, such as Europe, America, Asia, and neighbouring African nations, there is a dearth of data available in Tanzania, and the JKCI has not released any published data.

Despite government efforts to improve cardiac services Tanzania's alarming premature mortality rate from CVD, mirroring statistics in Kenya and Mozambique, with 13% of all CVD deaths occurring in 2017. Notably, 16% of total deaths in the 25-64 age group are attributed to non-communicable diseases, with 13% specifically linked to CVD. Between 2015 and 2030, the number of fatalities from CVD in Sub-Saharan Africa, which includes Tanzania, is expected to increase from 17.9million to 23million if the quality of care is not addressed (6,18).

Recognizing patients as key evaluators of healthcare quality, it is crucial to undertake a comprehensive study at JKCI. The study is designed to assess the dynamics of cardiovascular patient satisfaction with multifaceted domains associated with their contentment within the outpatient setting at JKCI. Given Tanzania's ongoing collaboration with developed countries to expand cardiac services, insights from this study were instrumental in ongoing quality enhancement efforts. This research not only addresses the immediate need to reduce preventable mortality associated with CVD but also aligns with the Sustainable Development Goals of 2030. By understanding and transforming key aspects impacting patient satisfaction, this study contributes significantly to the broader objective of improving and revolutionizing cardiovascular outpatient care at the JKCI.

1.3 CONCEPTUAL FRAMEWORK

1.3.1 Conceptual Framework Description:

The satisfaction component about the quality of services received has been described using the WHO quality of care framework. The satisfaction items for each of the three Donabedian dimensions of care quality were defined using Srivastava's frameworks (19). The Donabedian model, which has been applied by previous researchers to describe the level of patient satisfaction with healthcare at the JKCI, was used in this study. Three elements make up the Donabedian model: structure, process, and outcome.

The structure of care: includes the facility's complete setting for providing care. This covers elements like the facility's hygiene, the quantity of employees, the accessibility and availability of medications, and the availability of cardiac equipment.

The process of care: refers to how care is delivered to the patient. This includes aspects such as communication, interaction between the patient and care provider, privacy, confidentiality, explanation of the treatment, respect, and waiting time.

The outcome of care: is determined by how satisfied the patient is with the treatments they received.

The extent to which patients are content with the care they receive at the JKCI is influenced by both structural and procedural factors. Furthermore, as prior research has shown, additional companion variables such as social demographics have been found to influence the degree of patient satisfaction with the services offered.

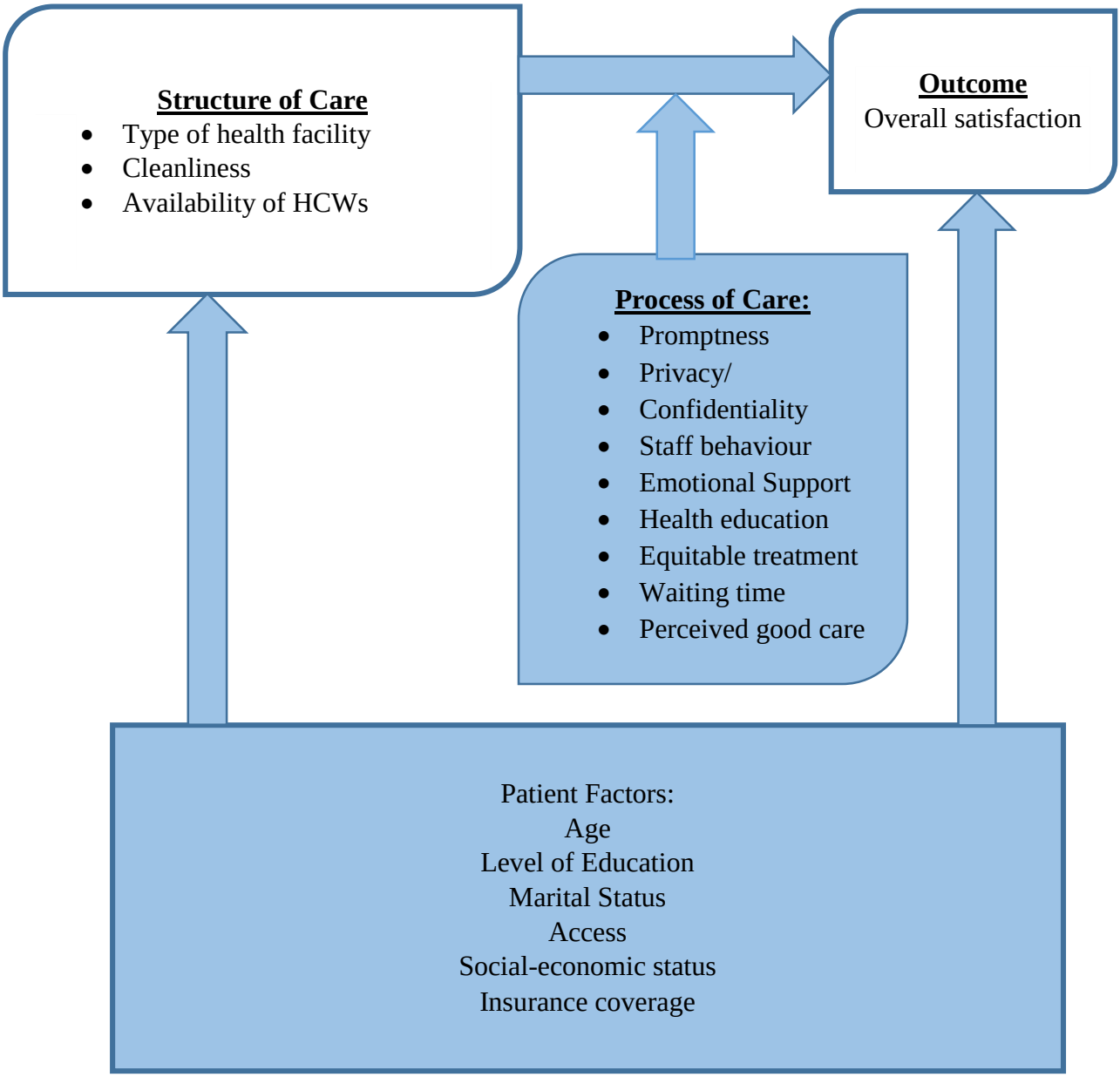


Figure 1. Conceptual Framework Identifying putative causes of patient satisfaction

1.4 RATIONALE

CVDs remain a leading cause of mortality in Tanzania, with JKCI playing a crucial role in providing specialized cardiac care. However, there is a notable gap in research regarding cardiovascular patients' satisfaction with outpatient services at JKCI, with no published data to guide quality improvement initiatives. Understanding patient satisfaction is critical because it directly affects treatment adherence, healthcare outcomes, and overall service perception. Addressing this gap is essential for improving care quality, aligning with the broader objectives of achieving UHC and the SDGs by 2030.

This study aims to assess the satisfaction levels of cardiovascular patients at JKCI and identify factors influencing their experiences with outpatient care. By examining specific domains such as communication, waiting times, and staff conduct, the study provides insights into areas needing targeted interventions. The findings might inform healthcare providers and administrators about how well current services meet patient expectations and highlight areas that require enhancement to improve patient satisfaction and reduce preventable CVD-related morbidity.

The results will benefit healthcare professionals, policymakers, and researchers by offering evidence-based recommendations to refine service delivery and healthcare policies at JKCI. This study might also serve as a valuable resource for future research on patient satisfaction in similar healthcare settings across Tanzania. Ultimately, understanding and addressing the factors influencing patient satisfaction might help improve the quality of cardiac care, enhance patient outcomes, and support national efforts to advance healthcare services.

1.5 OBJECTIVES

1.5.1 Broad objectives

To determine the level of satisfaction of cardiovascular patients with outpatient health services provided at JKCI in Tanzania.

1.5.2 Specific objectives

i. To determine the satisfaction domains of cardiovascular patients with outpatient health services provided at JKCI, Tanzania
ii. To determine the overall proportion of levels of satisfaction of cardiovascular patients with outpatient healthcare services provided at JKCI in Tanzania.
iii. To determine factors influencing overall level of satisfaction of cardiovascular patients with outpatient healthcare services provided at JKCI in Tanzania.

1.6 RESEARCH QUESTIONS

1.6.1 Main research question

What is the level of satisfaction of cardiovascular patients with outpatient health services provided at JKCI, Tanzania?

1.6.2 Specific Research Questions

i. What are the satisfaction domains of cardiovascular patients with outpatient healthcare services provided at JKCI, Tanzania?
ii. What is the overall level of satisfaction of cardiovascular patients with outpatient healthcare services provided at JKCI in Tanzania?
iii. What factors influence the overall level of satisfaction of cardiovascular patients with outpatient healthcare services provided at JKCI, Tanzania?

CHAPTER TWO

2.0 LITERATURE REVIEW

2.1 Overview

CVDs remain the leading cause of mortality globally, accounting for nearly 17.9 million deaths annually, which represents 32% of all global deaths (20). LMICs, particularly in Africa, bear the brunt of this burden, with approximately 80% of these deaths occurring in these regions (21,22). Tanzania, like many other LMICs, has been heavily impacted by CVDs, and the burden is expected to increase unless significant efforts are made to improve healthcare quality and access (23).

Patient satisfaction plays a crucial role in assessing healthcare quality. It is considered an essential indicator of the effectiveness of healthcare services, especially in managing chronic conditions such as CVD. Research shows that patient satisfaction influences healthcare outcomes, adherence to treatment, and patient retention rates (24). Healthcare providers have, therefore, shifted their focus toward understanding and improving patient satisfaction to meet patients' evolving expectations, especially in specialized healthcare settings like cardiovascular outpatient clinics (25,26).

In the medical industry, delivering high-quality care depends critically on patient satisfaction. It can forecast overall health outcomes and acts as a common gauge of the quality of healthcare (27). Not much is known about the JKCI in Tanzania, but patient satisfaction is still a major worldwide health problem that is driving an ever-growing demand for reforms in the healthcare system to fulfil the needs of the populace. This led to an increased burden of mortality rate in the country. Globally deaths associated with CVDs in sab Saharan countries account for about 80% including Tanzania. It is mostly associated with poverty, malnutrition, lifestyle, infection, and chronic diseases (7).

According to surveys conducted in developed nations, patients remained pleased with the overall care received. Including contact between nurses and patients, communication, privacy, and respect; waiting times; drug availability; explanations of treatments provided by doctors and nurses; facility cleanliness; service costs; and secrecy and privacy (28,29). The overall level of patient contentment with the quality of care provided is notably impacted by aspects such as age, level of education, and income

(14,21-22). This is explained by the social and economic framework of the nation's healthcare system.

However, in African sub-Saharan countries, patient satisfaction is not considered a public concern different studies show patients were somehow dissatisfied with the services (32,33). In Ethiopia 49.2% were satisfied with services, in Uganda patients living with HIV/AIDS were satisfied with the services, in Malawi only 8.3% satisfied with services. In Tanzania study done at Mwananyamala Hospital responded dissatisfied with the services similar to a study done on Ocean Road patients who explored dissatisfaction with nurses' services (3,15-16,20,23).

Furthermore, patients who are not happy with the health care they receive find better care elsewhere and are no longer relevant in the environment (35). Additionally, it worsened the patients' conditions because of poor drug adherence brought on by a lack of intuitive knowledge from the healthcare professional. This led to an increased mortality rate associated with the disease condition. As it stated death associated with cardiovascular disease rose from 8% to 13% higher than other sub-Saharan countries. If is quality of care is not well addressed it is expected to increase more than that (6,15).

To address this issue and bridge the gap between evidence-based patient satisfaction in the country and worldwide, it is necessary to understand the perspectives on patient satisfaction as Several scholarly works of literature have explored this subject to remodel the quality of care and attain the goals of SDGS to alleviate the burden of mortality rate associated with health-related issues.

2.2 Level of satisfaction of Cardiovascular Patients with outpatient healthcare services provided.

Most studies conducted in developed countries have repeatedly demonstrated that people were largely satisfied with their healthcare treatments. This may be explained by the nation's socioeconomic standing, which permits the government to provide its residents with high-quality healthcare.

Patient satisfaction in healthcare is a multi-dimensional concept, often assessed through various domains, including communication, waiting time, provider-patient interactions, facility environment, and access to care. One study found that communication between healthcare providers and cardiovascular patients is a critical determinant of satisfaction

(33). Patients who reported clear communication and involvement in decision-making were more likely to be satisfied with their care. Additionally, short waiting times and an organized outpatient system significantly improve patient perceptions of the quality of services (36).

Patient satisfaction with the clinic's services was assessed at Fraser Health heart function clinics in Canada. The findings indicated that respondents expressed a considerable level of satisfaction, averaging a score of 1 out of 10. Furthermore, a noteworthy 95% of the participants gave the service a rating higher than 6 out of 10, demonstrating a high degree of contentment with the rendered services (14).

To assess the degree of satisfaction among patients who used telecommunications as a useful tool for provider consultation, a thorough assessment was carried out in the USA. Most patients expressed satisfaction with the service; video communication had a higher satisfaction percentage (91%) than other kinds of communication. Some studies suggest that virtual consultations may be more effective than in-person consultations, while others found no significant difference between the two methods (37).

Research conducted in the United States aimed to investigate the significance and perception of patients with cardiovascular conditions regarding their satisfaction with healthcare services. The affordability, communication, and trustworthiness of healthcare providers were identified as factors linked to patient satisfaction. Notably, patients who had effective communication with their healthcare providers exhibited better medication adherence. Notably, 61% of the participants expressed excellent satisfaction with the services they received (38).

In a similar vein, another study conducted in the United States was designed to investigate the potential correlation between patient satisfaction and reported health consequences. The results indicated that 10.7% of the participants expressed low levels of satisfaction, while 61.1% reported moderate satisfaction, and 28.2% experienced high satisfaction. Interestingly, individuals with cardiovascular illness, older age groups, males, and members of the African-American community tended to be recognized as having a higher probability of expressing dissatisfaction with the services they received. (39).

In Germany, patients who underwent post-pacing cardiac implantation were found to be extremely content with the care provided. A staggering 97% of patients expressed satisfaction with the services rendered, while only 3% reported any form of dissatisfaction. Patients were particularly appreciative of the kindness displayed by their care providers, as well as the information provided to them post-surgery. However, the level of satisfaction with the preparation of discharge plans and medication information was comparatively lower. Recurrence of treatment was shown to be more common among satisfied patients than unsatisfied ones (40).

To assess patient satisfaction with co-morbidity in people 65–84 years old with more than three chronic illnesses, a study was done in Germany. Twenty-five general practitioners' satisfaction domains were evaluated in the study. Based on the data, over 81% of patients expressed satisfaction with the treatment provided by their primary care physician. Interestingly, female general practitioners were found to have higher patient satisfaction levels (31).

In Pakistan, one study aimed to evaluate the level of patient satisfaction amongst those getting medical care while hospitalized. This evaluation focused on factors such as waiting times, the accessibility of care, and the quality of interaction with healthcare providers. Findings from the survey revealed that 14% of patients expressed mixed feelings, another 14% were dissatisfied, while the majority, constituting 72% of patients, and reported being highly content with their experience. While the majority of patients expressed contentment with the services received, the researcher suggests additional research in the public sector to thoroughly examine the issue (41).

A study was carried out in Malaysia to assess the degree of contentment among caregivers at Tunku Azizah Hospital's paediatric clinic. According to the report, 49.5% of caregivers were not happy with the services given, while 50.5% were. Remarkably, the bulk of contented carers were from low-income homes and belonged to the Indian population. They were especially delighted with the staff's discipline, cleanliness of the restrooms, and politeness (11).

Nonetheless, a different study carried out in Turkey examined how satisfied patients were with the nursing care received while at the hospital. According to the findings, 63.4% of patients were pleased with the nursing care offered. Furthermore, an overwhelming 87.9% of respondents said they would suggest these services to their friends and relatives. Positive nurse-patient interactions and effective communication are essential for encouraging treatment compliance and general satisfaction with the services obtained (28).

The degree of satisfaction varies for developing nations, which may be attributed to social and socioeconomic aspects that are linked to the quality of care offered.

In Ghana hypertensive patients were reported to be highly satisfied with nursing care as their needs were promptly addressed, pain management was effective, confidentiality was maintained and there was efficient communication among nurses and patients. However, some patients report dissatisfaction pointing to disproportional nurse-to-patient ratio and inadequate resources with low morale among certain nurses were identified as contributing factors to suboptimal care (42).

In other settings, the aim of a research investigation conducted in both Bahrain and Ethiopia was to evaluate levels of satisfaction among patients regarding nursing care. Findings from the research showed 49.2% of the patients expressed contentment with the treatments they received. It's interesting to note that patients with lower educational attainment and a history of hospitalization showed noticeably higher levels of approval with nursing care services. The nurse's desire to attend to patients' needs, their privacy, and the information they supplied were the areas where patients expressed the least pleasure. (3).

In contrast, 46.2% of participants in a different survey on patient satisfaction with inpatient services conducted in Ethiopia expressed satisfaction with the care they received. Most patients expressed satisfaction with the relationship between them and their healthcare providers as well as the facility's general facilities and cleanliness. Furthermore, other elements that affect patient satisfaction include the accessibility of

radiology and laboratory services, efficient pain management programs, and high-quality inpatient pharmacy services (9).

In Nigeria, nursing care has been reported to have a higher level of satisfaction 81.7% of patients have reported factors such as acceptance by the nurses, kindness, reassurance, early discharge plan, and nurse's patient interaction contribute to their satisfaction level. moreover, in another study, TB patients reported being satisfied with the services especially counselling, health education, and altitude of staff in Uganda at Mpigi Health Centre in Mpigi district 58.3% of patients reported a higher level of satisfaction on different aspects of health services received (12,43,44) .

Patients with comorbidities in Kenya expressed great satisfaction with palliative treatment; the most frequently reported disease was hypertension (HTN). 87% of patients reported being content with the treatment they received. They were highly pleased with the knowledgeable assistance and beneficial recommendations provided by their caregivers. Prioritizing holistic treatment is advised since, in palliative care settings, it is essential to patient happiness (45). However, with a mean gap score of 66, patients in Uganda who received ARV, nevertheless, expressed great satisfaction with the quality of the care they received. The patient reported good interaction with a provider, timely management, and explanation of the treatment which contributed to good adherence to medication and recommend the facility to others. In Kenya, patients were pleased with the nursing care services offered, showing a satisfaction rate with a p-value of less than 0.005. However, only 8.4% of patients at a tertiary health facility in Malawi reported being content with the care they received, highlighting a significant shortfall in the quality of care offered by the public sector. (16,27,46).

So far, various studies have been conducted in Tanzania in different hospitals in different regions, and the hierarchical level of satisfaction from high to low from different perspectives. In a Dar es Salaam survey on satisfaction of the respondents and HIV/AIDS, care and treatment centres showed a greater satisfaction (92.3%), however in another study at Mwananyamala Hospital, patients expressed dissatisfaction with the treatments they received. Likewise, participants in qualitative research conducted on the

quality of cancer care in Tanzania were not pleased with multiple service components, indicating the necessity for enhancements in cancer care. (15,34,47)

2.3 Satisfaction level of Cardiovascular patients and satisfaction domain with the outpatient medical services offered.

Patients in Peru expressed great satisfaction with the internal medicine treatments offered by Daniel Alcides Hospital, empathy and safety seem to contribute greatly entity with the patient's level of satisfaction with 80.3% and 86.8% respectively. On the opposite patients reported less satisfaction with tangible and responsiveness with 57.1% and 55.5% respectively. A patient's degree of satisfaction can be attributed to various aspects, including but not limited to respect, privacy, the doctor-patient connection, communication, providing a clear explanation of the treatment, and conducting a thorough physical examination (48). Moreover, in Canada patients cited cardiac services as of good quality, and among 124 respondents 95% rated being satisfied with services. Factors like friendliness and responsiveness of staff were great entities of patient satisfaction contributing about 96% and 90% respectively. Others like respect 80%, and communication 77%, although 96% were satisfied with the information about disease provided only 27 % understood well the information (14).

The study done in England rated satisfaction domain on different perceptive from patients and nurses. Of the patients who reported confidence with the nurses and doctor 60 % reported excellent, neither 3% reported excellent, and only doctor nor nurses 16% reported excellent this suggests that patients reported confidence with their doctors and nurses during medical treatment. From the nurse’s perspectives care was measured in different areas of nursing care, 7% reported a lack of pain management to patients,11% missed procedures, 52% lacked time to educate family, and 65% to comfort family and relatives. Patients reported a high rate of confidence in nurses and doctors with an indirect proportion to the quality of nursing, this can be due to perceived proportionality between nurses and patients leading to a heavy workload (49)

Nonetheless, the SERVIQUAL questionnaire was used to survey 429 respondents in a paediatric clinic in Malaysia. The questions covered responsiveness, tangible,

dependability, professionalism, assurance, empathy, care services, and outcome as predictors of service satisfaction. The facility needs to cut down on waiting times, as indicated by the reliability cited mostly substantial satisfaction gap score of 50.5% satisfied and 49.5% dissatisfied with the services. Tangible factors contributed to the least amount of satisfaction gap score, Thus, it's crucial to uphold cleanliness and upkeep within the building. (11).

Even so, a study conducted in Ethiopia focused on patient and healthcare-provider interaction revealed that convenience facilities played a significant role in achieving a satisfaction score of approximately 96.4%. The study emphasized several elements that supported this favourable result, such as the availability of radiology and laboratory facilities, effective pain management therapies, and effective inpatient pharmacy services. High-quality hospital physician services were also noted. Additionally, the study discovered that elements including the availability of appropriate housing, the hygiene of the restroom facilities, along the provision of food services, greatly influenced the satisfaction levels of patients. (9).

Patients in a Kenyan study reported feeling very satisfied with the information given to them at arrival, the ward's orientation, and the standard of nursing care they experienced. A substantial p-value <0.005 was found by analysis, demonstrating the degree of this contentment. However, patients objected vehemently when asked if they would be prepared to be readmitted to the unit. However since the p-value was higher than 0.005, it's crucial to remember that this disagreement did not approach statistical significance (46).

Patients in Uganda have expressed great satisfaction with their adherence to ARV medication. It has been discovered that several variables, including technical and interpersonal abilities, mental well-being, and the standard of receptionist services, have a substantial impact on total patient happiness. Respectful treatment by providers was reported at 94%, careful listening by providers at 93%, spending time with patients at 90%, and providers knowing past medical history at 76%. However, patients reported dissatisfaction with timely attendance by providers within one hour at 62% and getting answers to medical problems on the day of the visit at 83%. Despite these concerns,

patients have shown good adherence to medication and have recommended the facility to others (27).

The cost of care was determined to be the area of satisfaction that patients saw as having the most beneficial impact in a different study conducted in Zambia to evaluate the satisfaction of the patients and their opinion of the level of healthcare provision (quality of care). However, fewer than half of the patients gave very good or excellent ratings for waiting times (46%) and facility spaciousness (46%), as well as the appropriateness of the medical equipment (44%). Conversely, the lowest rankings were for the accessibility of care and the sufficiency of resources and services (50).

Research conducted in Tanzania examined the aspects influencing the perceived excellence of HIV care and treatment. The results showed that the most satisfied clients were those who received care from public health institutions in terms of drug availability (99.5%), counselling (99.5%), physical environment (100%), and privacy and secrecy (100%). They also expressed great satisfaction (95.9%) with their time spent at the facility. Conversely, those who accessed care from faith-based healthcare institutions had the highest levels of satisfaction with their time spent there (99.5%) and the communication between the personnel and patients (99.2%) (47).

2.4 Social demographic characteristics with the level of patient satisfaction with the outpatient medical services offered.

Multiple factors influence the overall satisfaction of cardiovascular patients in outpatient settings. Socioeconomic status, health literacy, the availability of healthcare resources, and the organizational structure of healthcare facilities are among the most influential factors (51). Studies have demonstrated that higher levels of education and income correlate with higher satisfaction rates, as these patients are often more informed about their health and can afford better care options (52,53).

It has always been an intriguing subject to consider whether patients' sociodemographic traits and their degree of pleasure are related. Research carried out in Germany to gauge the level of satisfaction of patients with General Practitioner services, involving 265 patients, has revealed a noteworthy correlation between age and gender with overall

patient satisfaction. Compared to patients served by older, male general practitioners, younger, female general practitioners reported higher satisfaction with the healthcare services received. This could be attributed to the empathetic approach adopted by female General Practitioners (31).

According to a different study done in Turkey, college students were far more satisfied with the services they received than people without formal education. Furthermore, individuals with greater earnings demonstrated greater satisfaction with the services in contrast to those with a moderate income. The differences in expectations resulting from their educational backgrounds can be the reason for this discrepancy in satisfaction levels. Remarkably, there was no association discovered between age, gender, and overall pleasure (28).

Research conducted in Malaysia revealed an inverse association between education with satisfaction, indicating that individuals with lower levels of education tend to be more content with the services they receive in comparison to higher levels of education. One potential reason for this difference in satisfaction levels could be that individuals with higher educational attainment often have greater expectations. Interestingly, in this study, no notable correlation between age, gender, and levels of satisfaction was found, which differs from findings in other studies (11). As an example, a study in Ethiopia revealed patients with higher education levels were significantly more satisfied with the care they received than patients without any formal education.
Moreover, a research study conducted independently in Ethiopia discovered no notable link between satisfaction levels and social demographics. However, the study did find that individuals aged 34 and above, as well as those accompanied by a caregiver throughout their visit, expressed higher levels of satisfaction with the provided services. (9).

Age showed a strong link between satisfaction levels about the registration process and staff attitude in a different study that evaluated the satisfaction of patients with tuberculosis services in Southern Nigeria. In all three spheres, people under 40 showed lower levels of satisfaction, and women were less satisfied with the registration procedure. It's interesting to note that people with lesser levels of education expressed

greater satisfaction with access to care, suggesting that education status did not significantly correlate with overall satisfaction ratings (44).

A thorough investigation into women's satisfaction with prenatal treatment was carried out in Kenya, Malawi, and Tanzania. The results of this study showed that when it came to client satisfaction with prenatal treatment, age, and education had a negative link. Possibly because they had higher expectations, younger women who attended the clinic more than older women showed lower levels of satisfaction. Furthermore, women who had completed more education expressed less satisfaction than those who had not completed as much schooling (54).

CHAPTER THREE

3.0 METHODOLOGY

3.1 Study Design

An analytical cross-sectional study. It is appropriate for this study because, among other things, it is rapid, inexpensive, does not require participant follow-up, and requires fewer resources to undertake. This cross-sectional study's main goal is to find out how satisfied Tanzania are JKCI cardiovascular patients with the care they receive from medical professionals to improve the country's high-quality healthcare system.

3.2 Study Setting

The research was conducted at JKCI. The Tanzanian government’s continuous attempts to rally the services offered at the institute, which acts as the main hub for cardiac care in the nation, justify the choice to concentrate on this subject. Evaluating how satisfied patients are with the services was crucial to raising the standard of treatment at JKCI.

One specialized healthcare facility is the JKCI, which offers educational programs, state-of-the-art research, and comprehensive cardiovascular care. Established in October 2015 under the auspices of the Jakaya Kikwete Cardiac Instrument, this state-of-the-art institute is a collaboration between the government and the university. It comprises six directorates, namely Cardiology Facilities, Nursing Facilities, Clinical Support Programs, and Surgical Systems.

The JKCI acts as the primary destination for cardiology referrals nationwide. With a total of 103 beds and a dedicated team of 203 professional staff members, the institute is well-equipped to handle a significant number of patients. Every week, the institute attends to an average of 100 inpatients and 700 outpatients. The outpatient cardiology clinic, which operates six days a week (Monday to Saturday), sees a high volume of patients each day, including both returning and new patients. The estimated number of patients per clinic day ranges from 80 to 120, with an average of 40 patients who have been previously admitted.

3.3 Study Population

The study was conducted among adult cardiovascular patients attending outpatient department at JKCI clinic. All patients who are currently being treated for any cardiovascular disease, including hypertension, history heart attack, and valvular heart diseases among others at JKCI clinic during the study period made up the study population with about 700 outpatients per week.

3.4 Eligibility Criteria

3.4.1 Inclusion Criteria

Every Cardiovascular Patient who has consented to take part in the study during the designated time frame

3.4.2 Exclusion Criteria

This encompassed all Cardiovascular Patients with mental retardation, those who have visual and hearing impairments, as well as patients who are attending the clinic for the first time.

3.5 Sample Size Estimation

The formula below was used to obtain the sample size; (Cochran, 1977):

$n= Z^2*P\ (100-P)/\varepsilon^2$

Where:

Z=z-score, 1.96 at a 95% CI

n=Estimated sample size

ε=Accuracy degree (0.05),

P=Proportion of the population with desired characteristics (prevalence), i.e., patient's satisfaction with the quality of health services they have received, at 20% for this study as it was taken from a study conducted at Kilimanjaro to assess patients' satisfaction at the outpatient department (55).

e=Marginal error, set at 5% So,

n=1.962 * 20(100-20)/52 = 245

after adjustment of a 10% non-response rate

n= 273

So, the study required a minimum of 273 Cardiovascular Patients.

3.6 Sampling Selection

This study employed a systematic random sampling technique to select cardiovascular patients attending the outpatient clinic at JKCI. This involved selecting a starting point randomly and then picking every n^{th} patient based on a calculated interval.

Sampling Procedure

The JKCI cardiac clinic operates six days a week, providing 18 working days over the planned data collection period of three weeks. An average of 15 cardiovascular patients were interviewed each day, calculated as follows:

So, Number of cardiovascular patients interviewed per day

= Total amount of patients/ number of days

= 273/18 = 15

Hence 15 Cardiovascular Patients had to be interviewed for each session of the cardiac clinic.

To estimate the sampling interval (K),

the following formula was used: $K= \frac{N}{n}$ (Kothari, 2004).

Where: N= total number of patients was attended the cardiac clinic per session (day)

n = the anticipated daily enrolment rate of participants (15 patients) based on the study duration (18 days for all 3 weeks).

(150 is the minimum number of patients per session at the cardiac Clinic) K= 150/15= 10

So, the sampling interval was 10, This means every 10th patient was selected for the study after the first patient was chosen.

Selection Process

On each data collection day, the initial participant was determined using a random lottery method to ensure randomness. Fifteen pieces of paper were placed in a basket; one was labeled "START," and the rest were blank. The first 15 cardiovascular patients in the appointment book who met the inclusion criteria were asked to pick a paper before entering the consultation. The patient who picked the paper with "START" was the first to participate in the interview. After identifying the first participant, the subsequent patients were selected systematically by choosing every 10th patient on the list, ensuring a consistent sampling pattern. If a selected patient did not meet the inclusion criteria or met the exclusion criteria, the next patient in line was chosen instead.

This systematic random sampling approach allowed for an unbiased and representative selection of participants, ensuring the reliability of the findings and the efficient management of the data collection process within the planned timeframe.

3.7 Variables

3.7.1 Dependent Variables

- Overall Cardiovascular Patient's level of satisfaction with health services given by health care providers at JKCI in Tanzania. This was obtained after categorizing the satisfaction domains using a cut-off point from the Likert scale.

3.7.2 Independent Variables

- Social demographics, that is; Age, religion, Sex, Marital status, level of education, income, insurance coverage, and occupation.
- Satisfaction domains such as privacy, cleanness, confidentiality, communication, the interaction between patient and care provider, health education, availability of health care workers, promptness, emotional support, affordability of drugs, and staff competency.

Level of variable measurements

An ordinal scale: was employed to gauge the degree satisfaction of with cardiovascular outpatients' services (strongly agree, agree, neutrality, disagree, and strongly disagree), categorical characteristics. Monthly income level (high or low), level of education (high or low)

Nominal scale: was employed to quantify nominal factors such as gender, place of residence (Ubungo, Ilala, Kinondoni, Temeke, Kigamboni, or outside Dar es Salaam), marital status (married, single, divorced, widowed, or cohabiting), and sex (male or female).

Interval scale: was used to measure numerical variables such as age (years).

3.8 Data Collection

3.8.1 Data Collection Method

The exit interview was conducted to gather the necessary data. The purpose of the interview is to evaluate the cardiovascular patient's experience with the healthcare provided throughout their entire visit. The face-to-face interviews were carried out by the principal research investigator, who was assisted by two well-trained research assistants. One of the assistants directly assisted with the interviews, while the other helped in selecting participants for the study. The participants were selected using a systematic sampling technique, and the sampling frame consisted of a list of the cardiovascular patient's appointment schedules for today's clinic.

To determine the first cardiovascular patients to be interviewed, a lottery technique was employed. The cardiovascular patients who received the paper with the written notification were enrolled in the interview unless they did not meet the criteria, in which case the next cardiovascular patient was selected. The interviewer was provided with a questionnaire to be completed within a time frame of 10-15 minutes. with a specific focus on patients with limited literacy skills. Researchers acknowledged the potential challenges posed by traditional written questionnaires. To address this, the study employed a modified approach. Researchers directly read the questionnaire items to participants ensured comprehension and allowed participants (cardiovascular patients) to express their perspectives freely.

The researcher responsible for distributing the questionnaire was also collected to ensure no questionnaires were misplaced. The research team took measures to ensure that the participants comprehended the process of filling out the questionnaire. The goal of the study, confidentiality guarantees, and the respondents' ability to withdraw from the study were all explained to the participants.

3.8.2 Data Collection Tools

Self-Administered Questionnaires: The questionnaire was adopted from another study. To include both populations, the questionnaire was created in both Swahili and English (i.e., of those speaking Swahili and those speaking English). The satisfaction rating was determined utilizing a Likert scale (5-point), which includes options ranging from 1-strongly disagree to 4-strongly disagree. A comprehensive assessment of the literature and research evaluating a short questionnaire with patient healthcare experience in low-income countries served as the foundation for the questionnaire's development. Some changes were made to the questionnaire to make it more in line with the goals of the study (56).

Quality and accuracy of the data

The principal investigator closely oversees the daily transfer of data from the handwritten standardized questionnaires into SPSS, ensuring that the quality and accuracy of the entered information is maintained.

Reliability and validity of the tools

Reliability

To ensure reliability, the data collection instrument was carefully designed with straightforward, clear, and relevant questions that align with the study objectives. The questionnaire underwent pretesting on a small group of cardiovascular patients similar to the study population, allowing us to assess the consistency of responses. Based on the pretest results, necessary modifications were made to enhance question clarity and response accuracy. Data collectors were trained thoroughly on standardized data collection procedures, coding, and categorization techniques to maintain consistency across all data collection sessions. Moreover, daily checks were conducted by supervisors to monitor the uniformity of data recording, further ensuring that the instrument yields reliable results.

Validity

To ensure validity, the questionnaire was developed based on an extensive literature review and input from field experts, covering all relevant aspects of patient satisfaction and associated factors. Content validity was established by ensuring that the questions

adequately reflected the domains of patient satisfaction. Face validity was assessed through feedback from experts and supervisors, who reviewed the questionnaire for relevance and appropriateness. Construct validity was ensured by pretesting the tool, allowing adjustments based on participant feedback to accurately capture the intended constructs. The questionnaire was initially developed in English and translated into Kiswahili using back-translation techniques to maintain the accuracy of the questions' meaning. During data collection, daily checks by supervisors ensured completeness, accuracy, and clarity, further strengthening the validity of the collected data.

3.9 Data Analysis

Data was examined by SPSS25. Descriptive statistics, such as measures like mean, standard deviation, frequencies, and percentages, were computed for continuous variables.

Using the 5-point Likert scale, from very dissatisfied scored as 1 to very satisfied scored as 5. The neutral with a score of 3, was used as a reference, where all individuals scoring >3 were grouped in the satisfied category, and those scoring < 3 were grouped into the dissatisfied category. Therefore, the satisfied group combined satisfied and very satisfied responses, whereas the dissatisfied group combined dissatisfied and very dissatisfied responses.

A bivariate analysis was carried out to obtain values with $p<0.2$ which were deemed fit for a multivariate analysis. In the multivariable analysis, factors were statistically significant if the p-value <0.05.

In the modal below is the explanation of the interpretation of the odds ratio

When the reported group's OR exceeds 1, it indicates that the reported group is more likely to be satisfied than the inferred group.

With an OR of less than 1, the reported group's likelihood of being satisfied is lower than that of the inference group.

OR= 1 indicates that the reported group's likelihood is the same as the inference groups.

Bivariate analysis; a bivariate analysis was conducted to obtain variables with a p-value of <0.2 which was considered significant for the multivariate analysis.

Multivariate analysis: this was employed to determine the association between the variables, accounting for potential confounding variables. Predictor variables in this model are those with a correlation with the outcome resulting in a p-value below 0.25 from the bivariate analysis. This decision to use a p-value threshold of <0.2 for variable selection was made due to the limitation of the conventional approach (p-value <0.05) in identifying variables known to be significant. Those with p-value <0.05 from the multivariate analysis had statistical significance.

3.10 Ethical Consideration

The appropriate ethics committees at JKCI (Ref No. AB. 123/307/01D/52) and MUHAS (Ref No. DA.282/298/01.) provided ethical approval. The study was conducted with permission from the nursing supervisors in that department. Throughout the procedure, consent was obtained and all information on participants was kept private. The information was encrypted to conceal the identity of the participants and kept on a computer password-only accessible to the researcher. The written forms were stored in a secure locker that the researcher alone has access to.

CHAPTER FOUR

4.0 RESULTS

4.1 Descriptive Results of Study Participants

This study included 273 participants of which the majority 137 (50.2%) were males. The majority, 130 (47.6%) of the study participants were aged between 35-55 years with a median age of 54 ±15 years. Most of the participants, 107 (39.2%) had secondary education levels. Among the respondents, 167 (61.2%) had any form of employment, which included formal employment, self-employment, and non-formal employment, only 81 (48.5%) considered their monthly income as high. More than half, 143 (52.4%) of the respondents had health insurance coverage and the majority, 162 (59.3) were residents of Dar Es Salaam.

Table 1: demographic characteristics

Variable	Frequency	Percent
Age Category		
Below 35 Years	28	10.3
35 - 55 Years	130	47.6
Above 55	115	42.1
Sex		
Male	137	50.2
Female	136	49.8
Residency		
Within Dar Es Salaam	162	59.3
Out of Dar Es Salaam	111	40.7
Education Level		
No formal education	10	3.7
Primary	81	29.7
Secondary	107	39.2
Higher Education	72	26.4
Marital Status		
Partnered (Married, Cohabiting)	210	76.9
Not Partnered (Single, Divorced, Widowed)	63	23.1

Employment Status		
Any Form of Employment	167	61.2
Not Employed	106	38.8
Monthly-Income		
High	81	48.5
Low	86	51.5
Insurance		
Insured	143	52.4
Not Insured	130	47.6

4.2 Satisfaction Domains

Two domains were assessed, structure and process at the facility using well-structured questions, and a 5-point Likert scale, scoring 3 and above was considered satisfied. The majority of the respondents reported being satisfied in almost all domains. The results show high satisfaction in most areas, with privacy and confidentiality, cleanliness, and staff behavior rated particularly well, 169 (61.9%) of the respondents reported being very satisfied with cleanliness, 133 (57.1%) were satisfied with the emotional care offered, 125 (51.3%) of the respondents scored staff competency at Satisfied (4-points). Similarly, the availability of HCW was scored by 140 (51.3%) of the respondents as satisfied. However, acquiring medical supplies and waiting times were notable issues, with significant dissatisfaction, indicating areas for improvement. Overall, respondents are generally satisfied, but there are specific areas needing attention.

The lowest satisfaction score was observed cumulatively in waiting time where only 50 (18.3%) of the respondents were satisfied with the waiting time.

All the participants responded to the question assessing domains of satisfaction

Table 2: satisfaction domains

Variable	Very dissatisfied	Dissatisfied	Neutral	Satisfied	Very satisfied
1. Privacy and confidentiality	3 (1.1)	22 (8.4)	10 (3.7)	107 (39.2)	130 (47.6)
2. Cleanliness	0	9 (3.3)	15 (5.5)	80 (29.3)	169 (61.9)
3. Staff behavior	2 (.7)	14 (5.2)	23 (8.4)	120 (44)	114 (41.8)
4. Health Education	1 (.4)	17 (6.3)	31 (11.4)	126 (46.2)	98 (35.9)
5. Staff competency	2 (.7)	33 (12.1)	15 (5.5)	125 (51.3)	98 (35.9)
6. Staff communication	2 (.7)	14 (5.2)	37 (13.6)	113 (45.8)	107 (39.2)
7. Emotional care	4 (1.5)	28 (19.8)	23 (8.4)	133 (57.1)	59 (21.6)
8. Easy acquisition of medical supplies	6 (2.2)	54 (43.9)	31 (11.4)	103 (48.7)	44 (16.1)
9. Promptness	0	32 (11.7)	20 (7.3)	106 (38.8)	115 (42.1)
10. Availability of HCW	2 (.7)	28 (10.3)	13 (4.8)	140 (51.3)	90 (33)
11. Met expectations	2 (.7)	34 (12.5)	26 (9.5)	121 (44.3)	100 (36.6)
12. Equitable treatment	2 (.7)	56 (20.5)	13 (4.8)	102 (37.4)	90 (33)
13. Waiting time	85 (31.1)	103 (37.7)	13 (4.8)	22 (8.1)	50 (18.3)

4.3 Overall satisfaction

Using the 5-point Likert scale, from very dissatisfied scored as 1 to very satisfied scored as 5. The neutral with a score of 3, was used as a reference, where all individuals scoring >3 were grouped in the satisfied category, and those scoring < 3 were grouped into the dissatisfied category. Therefore, the satisfied group combined satisfied and very satisfied responses, whereas the dissatisfied group combined dissatisfied and very dissatisfied responses. A total summation of percentages of the satisfied group for all 13 domains and the dissatisfied group for all 13 domains was obtained. To obtain the overall level of satisfaction, the total summation of the percentage of the satisfied group was divided by 13 to obtain the mean satisfied level, and the total summation of the percentage of the dissatisfied group was divided by 13 to obtain the mean dissatisfied level.

From the above explanation, the mean satisfied level obtained was 224 (82%), and the dissatisfied level was 49 (18%).

The overall satisfaction is shown in the diagram:

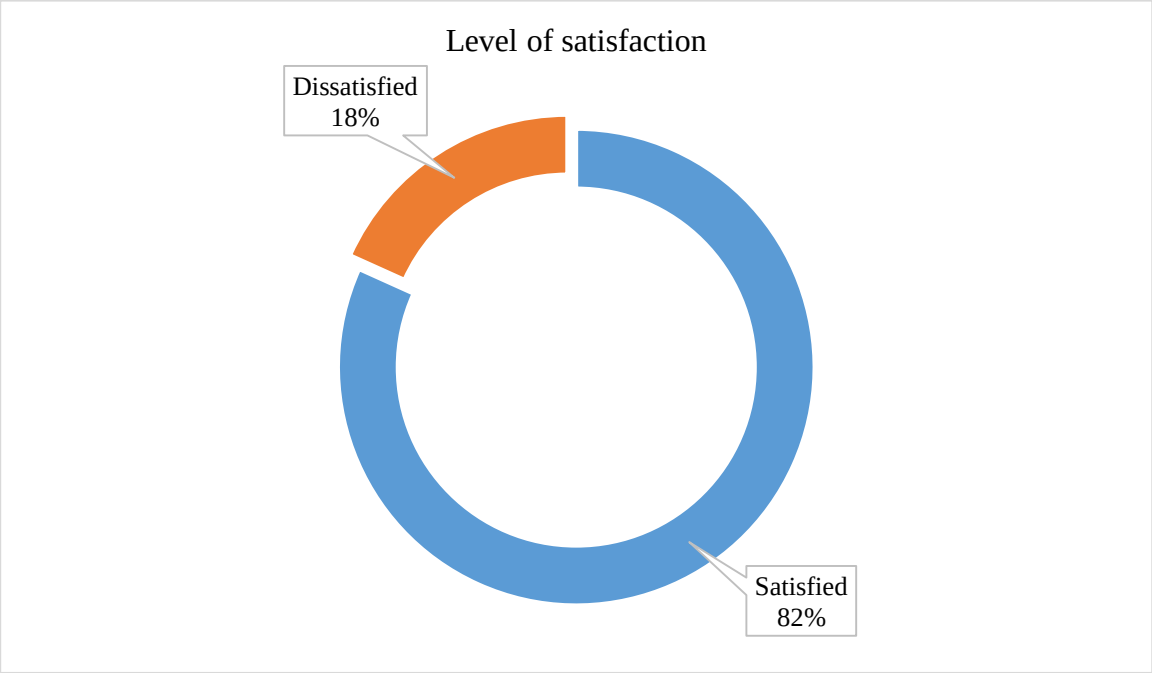


Figure 2: overall satisfaction level

Distribution of overall satisfaction across sociodemographic variables

The study found that majority of the males were satisfied accounting for 115 (83.9%) of the respondents and 109 (80.1%) females were satisfied. Individuals aged above 55, 102 (88.7%), followed by those aged less 35 years 24 (85.7%) were satisfied. Also 141 (87.0%) of individuals residing in Dar es salaam were satisfied as compared to 83 (74.8%) of individuals residing outside of Dar es salaam. Among those who had no formal education, 9 (90%) were satisfied, followed by 60 (83.3%) of those with college/ university education and 67 (82.7%) of those who had primary education were satisfied. Also, 57 (90.5%) of the individuals who were not partnered were satisfied as compared to 167 (79.5%) of partnered individuals. Moreover, 126 (84.0%) of employed individuals were satisfied as compared 98 (79.7) of the individuals who were not employed. Individuals who perceived a high monthly income had higher levels of satisfaction (63, 77.8%) whereas 55 (64.0%) of those with low income reported to be satisfied. Finally, 126 (88.1%) of the respondents who were insured reported being satisfied with the services, and 98 (75.4) of those uninsured also reported being satisfied.

Table 3: Distribution of overall satisfaction across patient characteristics

Variable	Overall satisfaction		p-value
	Dissatisfied	Satisfied	
Sex			0.414
Male	22 (16.1%)	115 (83.9%)	
Female	27 (19.9%)	109 (80.1%)	
Age			0.022
<35 years	4 (14.3%)	24 (85.7%)	
35-55 years	32 (24.6%)	98 (75.4%)	
>55 years	13 (11.3%)	102 (88.7%)	
Residency			0.010
With Dar	21 (13.0%)	141 (87.0%)	
Out of Dar	28 (25.2%)	83 (74.8%)	

Education level			0.798
No formal education	1 (10.0%)	9 (90.0%)	
Primary level	14 (17.3%)	67 (82.7%)	
Secondary level	22 (20.6%)	85 (79.4%)	
College/university	12 (16.7%)	60 (83.3%)	
Marital status			0.047
Partnered	43 (20.5%)	167 (79.5%)	
Not partnered	6 (9.5%)	57 (90.5%)	
Employment status			0.236
Employed	24 (16.0%)	126 (84.0%)	
Not Employed	25 (20.3%)	98 (79.7%)	
Monthly income			0.05
High	18 (22.2%)	63 (77.8%)	
Low	31 (36.0%)	55 (64.0%)	
Insurance Status			0.006
Insured	17 (11.9%)	126 (88.1%)	
Not insured	32 (24.6%)	98 (75.4%)	

4.4 Association between sociodemographic characteristics and overall level of satisfaction.

In the bivariate analysis only age category, residence, monthly income, and insurance status met the criteria for multivariate analysis (p-value <0.20).

Age category analysis revealed that individuals under 35 years had a higher, likelihood of being satisfied, with a COR of 2.168 (95% CI: 0.787 - 5.971, p = 0.134). Conversely, those aged 35-55 years had a COR of 0.607 (95% CI: 0.326 - 1.131, p = 0.116), indicating a non-significant lower likelihood compared to individuals above 55 years. In the multivariate analysis, which adjusts for the potential confounding factors, age category analysis indicated that individuals under 35 years had an adjusted odds ratio (AOR) of 0.507 (95% CI: 0.202 - 1.276, p = 0.149), suggesting a reduced, but not statistically significant, likelihood of being satisfied compared to those above 55 years. The 35-55 years age group had an AOR of 1.961 (95% CI: 1.132 - 3.399, p = 0.116), indicating a higher, but non-significant, likelihood compared to the reference group

In the bivariate analysis, residence was another factor analyzed, showing that living within Dar Es Salaam had a COR of 1.016 (95% CI: 0.572 - 1.805, p = 0.056), which was considered significant for multivariate analysis; Residence within Dar Es Salaam was associated with a significantly higher likelihood of the being satisfied with JKCI services, with an AOR of 1.411 (95% CI: 1.033 - 4.399, p = 0.016), compared to living outside the city. Monthly income analysis suggested that individuals with higher income had a COR of 1.175 (95% CI: 0.075 - 4.403, p = 0.031), indicating a slightly higher likelihood of being satisfied compared to those with lower income. Similarly, in the multivariate analysis Monthly income analysis demonstrated that individuals with high income had a significantly higher likelihood of being satisfied, with an AOR of 1.500 (95% CI: 0.254 - 3.982, p = 0.044). Finally, those not insured had a significantly higher likelihood of being satisfied, with an AOR of 1.846 (95% CI: 1.143 - 3.312, p = 0.014), compared to insured individuals Insurance status revealed a significant finding where individuals not insured had a COR of 1.528 (95% CI: 0.306 - 2.913, p = 0.022), showing a significantly higher likelihood of satisfaction compared to insured individuals. finally, those not insured had a significantly higher likelihood of being satisfied, with an AOR of 1.846 (95% CI: 1.143 - 3.312, p = 0.014), compared to insured individuals in the multivariate analysis.

Table 4: logistic regression results

	Bivariate Analysis				Multivariate Analysis			
	COR	95% C.I.for COR			AOR	95% C.I.for AOR		
		Lower	Upper	p-value		Lower	Upper	p-value
Sex								
Male	.836	.480	1.456	.527				
Female	Ref*							
Age category								
Below 35 years	2.168	.787	5.971	.134	.507	.202	1.276	.149
35 – 55 years	.607	.326	1.131	.116	1.961	1.132	3.399	.116
Above 55 years	Ref*							
Residence								
Within Dar Es Salaam	1.016	.572	1.805	.056	1.411	1.033	4.399	**.016**
Out of Dar Es Salaam	Ref*							
Education level								
No formal education	2.205	.462	10.530	.322				
Primary education	1.640	.769	3.496	.200				
Secondary education	1.202	.600	2.408	.604				
Higher education	Ref*							
Marital status								
Partnered	.814	.394	1.679	.577				
Not partnered	Ref*							
Employment status								
Any form of employment	1.021	0.897	2.109	0.672				
Not employed	Ref*							
Monthly-income								
High	1.175	0.075	4.403	.031	1.500	.254	3.982	**.044**
Low	Ref*							
Insurance status								
Not insured	1.528	.306	2.913	.022	1.846	1.143	3.312	**.014**
Insured	Ref*							

Key: Ref* = Reference Group

CHAPTER FIVE

5.0 DISCUSSION

5.1 Descriptive results of study participants

The study conducted at JKCI about cardiovascular patients' satisfaction with outpatient services revealed several key insights. Participants, predominantly males, were mostly aged between 35 and 55 years. A significant portion of them held secondary and the majority were married. Employment was common among the majority of the respondents, though few perceived their monthly income as high. Notably, more than half had health insurance, and a majority resided in Dar Es Salaam. These findings align closely with the study's objectives to understand the sociodemographic correlations and overall satisfaction levels among cardiovascular patients at JKCI.

Placing these findings in a broader context, the demographic characteristics observed in this study reflect trends seen in global and regional literature. For instance, a study in the United States highlighted that middle-aged adults (40-60 years) are a significant demographic in cardiovascular outpatient clinics, similar to the age distribution found at JKCI (57). This age group is often at a higher risk for cardiovascular diseases, necessitating frequent outpatient visits (58,59). Globally, research shows that higher levels of education and employment are related to better patient satisfaction due to increased health literacy and access to resources (60). This trend is mirrored in Sub-Saharan Africa, where education and employment status significantly influence healthcare service utilization and satisfaction (61). In East Africa, specifically, studies have revealed that sociodemographic aspects such as marital status and employment play crucial roles in healthcare satisfaction levels, reinforcing our findings at JKCI (62).

Given these insights, several areas for future research are worth exploring. One potential area is to investigate the barriers to obtaining health insurance among cardiovascular patients in Tanzania. Understanding these barriers could inform policies aimed at increasing insurance coverage and reducing out-of-pocket expenses for chronic disease management which will play a crucial role in alleviating death associated with cardiovascular diseases (63). Another avenue for future research could be a comparison between insured and uninsured cardiovascular clients to evaluate the impact of insurance

on satisfaction and health outcomes. Additionally, longitudinal studies could provide deeper insights into how sociodemographic changes over time affect patient satisfaction with outpatient services.

5.2 Satisfaction Domains and overall level of satisfaction.

The research aimed to assess satisfaction across various domains and explore associated factors among patients in Tanzania. Overall, the majority of respondents expressed satisfaction with the outpatient healthcare services provided, particularly highlighting high satisfaction rates in cleanliness, staff behaviour, and staff communication.

Globally, studies often underscore the importance of patient satisfaction as a key indicator of healthcare quality (64). In Sub-Saharan Africa, similar studies have shown varied results but generally emphasize the significance of communication, competence of staff, and waiting times as critical factors influencing patient satisfaction (65). For instance, a study in Ethiopia found that only 45% of patients reported being satisfied with healthcare services, with long waiting times and insufficient medical supplies being significant factors (66). Studies specific to East Africa echo these sentiments but also highlight regional nuances such as infrastructure challenges and resource disparities affecting healthcare delivery (12). These regional insights underscore the broader applicability of our findings at JKCI and suggest that enhancing supply chains and reducing waiting times could significantly improve patient satisfaction.

One unexpected result from our study was the notably low satisfaction score regarding waiting times, with only 31.2% of respondents reporting satisfaction. This contrasts sharply with high satisfaction levels in other domains. This discrepancy may stem from systemic issues such as staffing shortages or inefficiencies in appointment scheduling on Dr allocation. Despite efforts to improve other aspects of service delivery, waiting times remain a persistent challenge that requires targeted interventions to enhance patient experience comprehensively.

For future research directions, it would be beneficial to delve deeper into the specific factors contributing to dissatisfaction with waiting times and explore potential solutions. Additionally, longitudinal studies could assess the sustainability of satisfaction levels

over time and the impact of interventions aimed at improving patient experience. Investigating the influence of cultural and socioeconomic factors on satisfaction outcomes could also provide a more nuanced understanding of patient perspectives in similar settings.

5.3 Association between Sociodemographic characteristics and level of satisfaction

The findings highlight several key factors influencing patient satisfaction with outpatient healthcare services at Jakaya Kikwete Cardiac Institute (JKCI). The study aimed to identify demographic and socioeconomic correlation with satisfaction, revealing significant associations with age category, residence, monthly income, and insurance status.

Age category analysis indicated that while individuals under 35 years showed a trend towards lower satisfaction levels in comparison to older age groups, this association did not show statistical significance in adjusted analyses (31). This contrasts with broader literature suggesting younger patients often have higher expectations and consequently lower satisfaction rates (29). The non-significant findings in our study may reflect unique patient demographics and treatment experiences at JKCI, warranting further exploration into specific factors influencing satisfaction across different age groups.

Residence within Dar Es Salaam emerged as a robust factor influencing patient satisfaction, with individuals living in the city reporting significantly higher satisfaction levels compared to those residing outside (30). This finding underscores potential disparities in healthcare access and service delivery between urban and rural areas in Tanzania. Similar studies in other global and regional contexts have highlighted urban-rural disparities as critical determinants of patient satisfaction, influenced by factors such as healthcare infrastructure and resource allocation (2,12).

Monthly income and insurance status were also identified as significant predictors of patient satisfaction at JKCI. Higher monthly income is associated with higher chances of satisfaction, reflecting the influence of financial accessibility on healthcare experiences(67). Similarly, individuals with insurance coverage reported higher

satisfaction levels compared to those without insurance, highlighting the role of health coverage in mitigating barriers to healthcare access and quality (68).

Second, the role of health insurance status in patient satisfaction was particularly noteworthy. Initially, insured patients were more likely to be satisfied with the services, according to a common trend observed in healthcare studies that link insurance coverage with better access to and satisfaction with healthcare services (69,70).

Placing these findings in context with existing literature reveals nuanced patterns across different regions. Globally, studies emphasize the multifactorial nature of patient satisfaction, influenced by demographic factors, service delivery efficiency, and healthcare access (32). In Sub-Saharan Africa, similar research underscores the impact of socioeconomic disparities on healthcare outcomes, with specific attention to how income and insurance coverage affect patient satisfaction (31). Studies specific to East Africa echo these findings but also highlight regional variations in healthcare infrastructure and resource allocation that may influence patient experiences.

An unexpected result from our study was the non-significant association between younger age groups and satisfaction levels, contrary to expectations based on general trends in patient satisfaction literature. This could reflect unique contextual factors at JKCI, such as varying expectations or differential treatment experiences among age groups that warrant further exploration. The significant influence of residence within Dar Es Salaam on satisfaction levels suggests potential disparities in healthcare service delivery between urban and rural areas, which merit targeted interventions to ensure the equitable patient experiences across different geographic settings (71,72).

For future research, it would be valuable to research the underlying mechanisms behind regional disparities in patient satisfaction, particularly focusing on infrastructure development, accessibility of services, and healthcare policy implications. Longitudinal studies could assess the sustainability of satisfaction trends over time and evaluate the effectiveness of interventions aimed at improving patient-centered care at JKCI and similar healthcare settings. Additionally, investigating cultural influences on patient

expectations and satisfaction outcomes could provide deeper insights into tailoring healthcare services to meet diverse patient needs effectively.

5.4 Study Limitations and Mitigation

The cross-sectional design of this study restricts the ability to infer causality. The study acknowledges the need for longitudinal studies to understand the direction of influence between satisfaction and its associated factors. Additionally, the focus on a single healthcare institution may limit the generalizability of the findings to other settings or regions. Broad study inclusion of more than one setting will be beneficial for future impact. With a quantitative approach detailed personal experience with outpatients' services was not explored, mixed method and longitudinal design will be beneficial for detailed experience.

Self-reported measures of satisfaction are inherently subjective and could be influenced by respondents' personal biases or recent experiences. This was mitigated by using an anonymous survey and well well-designated simple questionnaire easy to understand to avoid over or underestimating the findings as well as confronting the patient as confidentiality was maintained. Also, social desirability bias was observed which was mitigated through counseling and training the respondents on the importance of honest responses and clear instruction while maintaining of privacy.

Despite these limitations, the study provides valuable insights into patient satisfaction dynamics and highlights areas where service improvements can enhance patient experiences towards improving cardiovascular outpatients' services at JKCI.

5.5 Conclusion

In conclusion, this study at Jakaya Kikwete Cardiac Institute (JKCI) assessed patient satisfaction among cardiovascular patients in Tanzania, revealing significant influences from age, residence in Dar Es Salaam, monthly income, and insurance status. Younger age groups and lower-income individuals tended towards lower satisfaction while residing in Dar Es Salaam, higher income and non-insurance coverage correlated with higher satisfaction. This may be due to the ease of accessing services and the preferential treatment given to cash patients compared to those using insurance

Longer waiting times lead to patient dissatisfaction, possibly because patients feel undervalued, negatively impacting the overall healthcare experience. These findings highlight the complex roles of demographic and socioeconomic factors in shaping patients' perceptions of healthcare quality. Future research should focus on understanding regional disparities, and factors associated with longer waiting times, evaluating interventions, and exploring cultural influences on patients' expectations in Tanzanian healthcare.

5.6 Recommendations

From the findings, it is recommended that healthcare providers at JKCI and similar institutions prioritize strategies to manage and align patient expectations, particularly among insured and low-income patients. Efforts should be made to reduce waiting times through process improvements and increased staffing levels where necessary. Also aligning future collaboration with regional hospital expanding branches to ensure patients not residing in Dar-es Salm have easier access to services towards improving quality care. Ensuring a steady and reliable supply of medical essentials is crucial to maintaining high levels of patient satisfaction. Additionally, healthcare administrators should focus on continuous patient feedback to identify and address emerging issues promptly. Implementing targeted interventions to improve the patient experience, particularly in areas identified as significant dissatisfaction drivers, will be key to enhancing overall satisfaction with outpatient services on improving quality care.

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APPENDICES

Appendix 1: Questionnaire.

SECTION 1: PATIENT PARTICULARS

Date of Interview…… Covered by NHIF (Yes/No) Fast track (Yes/No)

1	Form ID: _____	2	Sex:_____
3	Age:_____	4	Residence:_____
5	Education level (tick the one answer): 1. Not formally educated ( ) 2. Primary ( ) 3. Secondary ( ) 4. Advanced secondary ( ) 5. University education Level ( )	6 7 8 9	Religion_____ Marital status (Please tick the right answer): (i) Single ( ) (ii) Married ( ) (iii) Widowed ( ) (iv) Divorced/Separated-d ( ) Occupation-status: _____ Monthly--income 1. High ( ) 2. Low ( )

The questions below are about your discernment of the services have received or seen from this hospital. Please tick one response in the space provided:

No	QUESTIONS	Strongly agree (5)	Agree (4)	Neutral (3)	Disagree (2)	Strongly disagree (1)
1	I am pleased with the consistent professionalism displayed by the hospital staff daily.					
2	The reception area and amenities, such as seating and restroom facilities, meet my expectations.					
3	The hospital maintains a satisfactory level of cleanliness every day.					
4	The hospital's secluded location ensures my privacy, allowing me to remain inconspicuous to acquaintances, and even if recognized, they remain unaware of my attendance.					
5	I am pleased with the punctuality of the hospital staff in honoring scheduled appointments.					
6	The staff demonstrate effective communication and information-sharing skills.					

		Strongly agree (5)	**Agree (4)**	**Neutral (3)**	**Disagree (2)**	**Strongly disagree (1)**
7	My expectations in thorough examinations, tests, medication, and administration have been consistently met by the hospital staff.					
8	I appreciate the counseling provided by the staff whenever introducing new treatments or procedures.					
9	The staff consistently show respect towards me.					
10	The hospital provides prompt service.					
11	The staff readily assist me whenever I require medical attention.					
		Strongly agree (5)	**Agree (4)**	**Neutral (3)**	**Disagree (2)**	**Strongly disagree (1)**
12	I am happy with the short waiting times (less than 300 minutes) before receiving services at the hospital.					

13	The staff dedicate sufficient time to addressing my medical concerns.					
14	The staff adheres to strict confidentiality regarding my personal information.					
15	The hospital is adequately staffed to cater to its clients' needs.					
16	The staff possesses ample knowledge to address clients' inquiries.					
		Strongly agree (5)	**Agree (4)**	**Neutral (3)**	**Disagree (2)**	**Strongly disagree (1)**
17	Staff attentively addressed my medical worries.					
18	The staff maintain a cooperative relationship with me and are readily available to offer medical assistance as required.					
19	The staff exhibits politeness, comfort, and encouragement towards clients facing challenges.					
20	I am satisfied with the equitable treatment I receive from the hospital staff.					

Appendix 2: Dodoso

SEHEMU 1: TAARIFA ZA MGONJWA

Tarehe……Unatumia Bima ya Afya (Hapana/Ndiyo) Huduma ya Haraka (Ndiyo/Hapana)

1	**Fomu namba: _____**	**2**	**Jinsi:** **1. Me ( )** **2. Ke ( )**
3	**Miaka/Umri: _____**	**4**	**Mahali unapoishi: _____.**
5	**Kiwango cha Elimu (Tafadhali weka alama ya vema (√) kwenye jibu moja):** **1. Sikusoma ( )** **2. Msingi ( )** **3. Elimu ya Sekondari (Kidato cha I-IV) ( )** **4. Sekondari ya upili (Kidato cha V-VI) ( )** **5. Chuo Kikuu ( )**	**6** **7** **8** **9**	**Dini_____** **Hali ya ndoa (weka alama ya vema (√) kwenye chaguo moja):** **1. Nimeoa/ nimeolewa ( )** **2. Sijaoa ( )** **3. Nimefiwa ( )** **4. Nimetalikiwa ( )** **Kazi/shughuli: _____** **Mapato ya mwezi** **1. Makubwa ( )** **2. madogo( )**

SEHEMU YA 3:

Maswali yafuatayo yanauliza kuhusu huduma ulizopewa katika hospitali hii. Weka alama ya vema (√), kwenye chumba kimoja cha jibu lako:

Namb.	SWALI	Nakubali sana (5)	Nakubali (4)	Sina uamuzi (3)	Nakataa (2)	Nakataa sana (1)
1	Ninafurahishia ufanisi wa kila siku unaodhihirishwa na wafanyakazi wa hospitali hii.					
2	Sehemu ya mapokezi ya hospitali hii na viti vya kutosha pamoja na vyoo visivyo na kasoro vinakidhi mahitaji yangu.					
3	Hospitali hii inaendeleza kiwango cha kutosha cha usafi kila siku.					
4	Mahali ambapo hospitali hii imejengwa kwa siri kunahakikisha faragha yangu, kuniruhusu kubaki bila kuvutia tahadhari ya watu wanaonijua, na hata wakinigundua, hawatambui kuwa nimehudhuria hapa.					
5	Ninafurahishwa na uaminifu wa wafanyakazi wa hospitali katika kuheshimu miadi niliyopewa.					
6	Wafanyakazi wanadhihirisha uwezo wao mzuri wa mawasiliano na kutoa taarifa.					

Namb.	SWALI	Nakubali sana (5)	Nakubali (4)	Sina uamuzi (3)	Nakataa (2)	Nakataa sana (1)
7	Matarajio yangu ya uchunguzi kamili, vipimo, na utoaji wa dawa yamekuwa yakitimizwa na wafanyakazi wa hospitali kwa mara kwa mara.					
8	Ninathamini ushauri unaotolewa na wafanyakazi wakati wa kuanzisha matibabu mapya au taratibu.					
9	Wafanyakazi kwa kawaida wananiheshimu.					
10	Wfanyakazi wa Hospitali hii wanatoa huduma haraka.					

Namb.	SWALI	Nakubali sana (5)	Nakubali (4)	Sina uamuzi (3)	Nakataa (2)	Nakataa sana (1)
11	Wafanyakazi wanapatikana kusaidia wakati wowote ninapohitaji msaada wa matibabu.					
12	Nina furaha na muda mfupi wa kusubiri (chini ya dakika 300) kabla ya kupata huduma hospitalini.					
13	Wafanyakazi hutumia muda wa kutosha kushughulikia matatizo yangu ya matibabu.					
14	Wafanyakazi wanazingatia siri ya taarifa zangu binafsi.					
15	wafanyakazi wa hospitali wanatosha kuhudumia wateja wake.					
16	Wafanyakazi wana maarifa ya kutosha kujibu maswali ya wateja.					

Namb.	SWALI	Nakubali sana (5)	Nakubali (4)	Sina uamuzi (3)	Nakataa (2)	Nakataa sana (1)
17	Wafanyakazi kwa umakini hushughulikia masuala yangu ya matibabu.					
18	Wafanyakazi hufanya kazi kwa ushirikiano mzuri na mimi na wako tayari kunipa msaada wa matibabu wakati wowote ninapohitaji.					
19	Wafanyakazi huonyesha upole, faraja, na kutia moyo kwa wateja wanapokabiliana na matatizo.					
20	Nina furaha na gharama Rafiki katika kupata huduma katika hospital hii.					

ASANTE SANA KWA USHIRIKI WAKO

Appendix 3: Consent Form

MUHIMBILI UNIVERSITY OF HEALTH AND ALLIED SCIENCES

DIRECTORATE OF RESEARCH AND PUBLICATIONS
INFORMED CONSENT FORM

Hello, I am Kulthum Said Mohammed, a researcher and postgraduate student at Muhimbili University of Health and Allied Sciences, specializing in critical care and trauma nursing.

Study Participation: Your participation in my study titled "Evaluation of Cardiovascular Patient Satisfaction and Its Associated Factors at JKCI" is warmly invited. This study targets outpatient cardio patients specifically attending the clinic at JKCI. Your involvement is voluntary, you retain full rights to decline without any consequences to your routine or obligations. There are no costs involved, and no personal benefits are associated with participating.

Privacy: Rest assured, your privacy is guaranteed throughout the study process. Your information will remain confidential and will only be utilized for generating general insights. The outcomes of this research will be disseminated in an article to contribute to the advancement of knowledge in this area, with no mention of individual names on any questionnaires.

Risks: No risks are associated with participating in the study, and you are encouraged to seek clarification on any aspect you find unclear. Your agreement to participate is indicated by signing the consent form after thoroughly understanding its contents and receiving adequate explanations.

Signature of Participant Date

_____ _____

Contact Person: The principal investigator, kulthum said Mohamed 0788-163544

Email coolthumsaid4@gmail.com

Contact me any time for any inconvenience.

Appendix 4: Fomu ya ridhaa

CHUO KUKUU CHA AFYA NA SAYANSI SHIRIKISHI MUHIMBILI

KURUGENZI YA TAFITI NA UCHAPISHAJI FOMU YA RIDHAA

Salamu, mimi ni Kulthum Said Mohammed, kutoka Chuo Kikuu cha Afya na Sayansi ya Muhimbili mtafiti na mwanafunzi nikijifunza uuguzi wa utunzaji mahututi na majeraha katika ngazi ya shahada ya uzamili.

Ushiriki: Ushiriki wako katika utafiti wangu uitwao "Tathmini ya Kuridhika kwa Wagonjwa wa Moyo na Mambo yanayohusiana na Hilo katika JKCI" unakaribishwa sana. Utafiti huu unalenga wagonjwa wa moyo wa nje wanaohudhuria kliniki katika JKCI. Ushiriki wako ni kabisa kwa hiari, na unaweza kukataa bila madhara yoyote kwa shughuli zako au majukumu. Hakuna gharama zinazohusika, na hakuna faida ya kibinafsi inayohusiana na kushiriki.

Faragha: Basi uhakikishwe, faragha yako itaheshimiwa kikamilifu katika mchakato wa utafiti. Taarifa zako zitabaki kuwa siri na zitatumiwa tu kwa ajili ya kutoa matokeo ya jumla. Matokeo ya utafiti huu yatatolewa katika makala ili kuchangia maendeleo ya maarifa katika eneo hili, bila kutaja majina ya watu binafsi kwenye maswali yoyote.

Hatar: Hakuna hatari zinazohusiana na kushiriki katika utafiti huu, na unahimizwa kuuliza maswali yoyote unayoweza kuwa nayo ikiwa haujielewi chochote. Makubaliano yako ya kushiriki yanaonyeshwa kwa kusaini fomu ya idhini baada ya kuelewa kikamilifu yaliyomo na kupokea maelezo ya kutosha.

Sahihi ya mshiriki **Tarehe**

_____

_____

Mtu wa Kuwasiliana: Mpelelezi Mkuu, kulthum said Mohamed 0788-163544

Barua pepe: coolthumsaid4@gmail.com

Wasiliana nami wakati wowote kwa usumbufu wowote.

Appendix 5: Ethical clearance

UNITED REPUBLIC OF TANZANIA

MINISTRY OF EDUCATION, SCIENCE AND TECHNOLOGY

MUHIMBILI UNIVERSITY OF HEALTH AND ALLIED SCIENCES

OFFICE OF THE DIRECTOR – RESEARCH, PUBLICATIONS AND INNOVATIONS

Ref. No.DA.282/298/01.C/2225 Date: 08/05/2024

MUHAS-REC-05-2024-2225
KULTHUM SAID
SHOOL OF NURSING
MUHAS

RE: APPROVAL FOR ETHICAL CLEARANCE FOR A STUDY TITLED: ASSESSMENT OF CARDIOVASCULAR PATIENT'S SATISFACTION AND ITS ASSOCIATED FACTORS AT OUTPATIENT CLINIC IN JAKAYA KIKWETE CARDIAC INSTITUTE

Reference is made to the above heading,

I am pleased to inform you that the Chairperson has on behalf of the University Senate, approved ethical clearance of the above-mentioned study, on recommendations of the Senate Research and Publications Committee meeting accordance with MUHAS research policy and Tanzania regulations governing human and animal subjects research.

APPROVAL DATE: 08/05/2024
EXPIRATION DATE OF APPROVAL: 08/05/2025

STUDY DESCRIPTION:

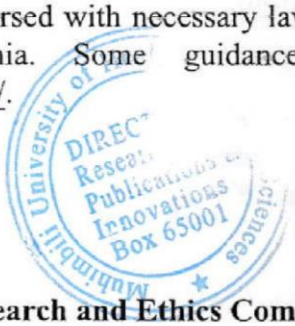
Purpose:

The purpose of this descriptive cross section study design is to determine the level of cardiovascular patient's satisfaction with its associated factors at outpatient health services given at JKCI in Tanzania.

The approved protocol and procedures for this study is attached and stamped with this letter, and can be found in the link provided: https://irb.muhas.ac.tz/storage/Certificates/Certificate%20-%2015545.pdf and in the MUHAS archives.

The PI is required to:

1. Submit bi-annual progress reports and final report upon completion of the study.
2. Report to the IRB any unanticipated problem involving risks to subjects or others including adverse events where applicable.
3. Apply for renewal of approval of ethical clearance one (1) month prior its expiration if the study is not completed at the end of this ethical approval. You may not continue with any research activity beyond the expiration date without the approval of the IRB. Failure to receive approval for continuation before the expiration date will result in automatic termination of the approval for this study on the expiration date.
4. Obtain IRB amendment (s) approval for any changes to any aspect of this study before they can be implemented.
5. Data security is ultimately the responsibility of the investigator.
6. Apply for and obtain Data Transfer Agreement (DTA) from NIMR if data will be transferred to a foreign country.
7. Apply for and obtain Material Transfer Agreement (MTA) from NIMR, if research materials (samples) will be shipped to a foreign country.
8. Apply for and obtain permission to publish the results from National Institute for Medical Research. The application should be before submitting to a publisher and not concurrently through the email publications@nimr.or.tz.
9. Any researcher, who contravenes or fail to comply with these conditions, shall be guilty of an offence and shall be liable on conviction to a fine as per NIMR Act No. 23 of 1979, PART III section 10 (2)
10. The PI is required to ensure that the findings of the study are disseminated to relevant stake holders.
11. PI is required to be versed with necessary laws and regulatory policies that govern research in Tanzania. Some guidance is available on our website https://drp.muhas.ac.tz/.



Dr. Nahya Salim Masoud,
Chairperson, MUHAS Research and Ethics Committee

Appendix 6: Introduction letter

UNITED REPUBLIC OF TANZANIA

MINISTRY OF EDUCATION, SCIENCE AND TECHNOLOGY

MUHIMBILI UNIVERSITY OF HEALTH AND ALLIED SCIENCES

OFFICE OF THE DIRECTOR – POSTGRADUATE STUDIES

In reply quote;
Ref. No. HD/MUH/T.469/2022

13th May, 2024

The Executive Director,
Jakaya Kikwete Cardiac Institute,
P.O. Box 65141,
DAR ES SALAAM

14 MAY 2024

Re: INTRODUCTION LETTER OF KULTHUM SAID

We would like to inform you that the bearer of this letter is Kulthum Said with Reg. No. **HD/MUH/T.469/2022** is a student at Muhimbili University of Health and Allied Sciences (MUHAS) "pursuing MSc. Cardivascular Nursing.

As part of her studies, she will be doing an elective research titled: "**Assessment Of Cardiovascular Patient's Satisfaction And Its Associated Factors At Outpatient Clinic In Jakaya Kikwete Cardiac Institute.**" She is being supervised by Dr. Fatina Ramadhan from MUHAS and Robert Aloyce from JKCI.

The research has been approved by the Chairman of University Senate.

Kindly provide her the necessary assistance to facilitate the conduct of her research.

We thank you for your cooperation.

Ms. Victoria Mwanilwa
For: DIRECTOR, POSTGRADUATE STUDIES

c.c Kulthum Said

9 United Nations Road; Upanga West; P.O. Box 65001, Dar Es Salaam: Tel. G/Line: +255-22-2150302/6; Ext. 1015; Direct Line:+255-22-2151378;Telefax:+255-22-2150465;E-mail:dpgs@muhas.ac.tz;Web:https://www.muhas.ac.tz

Appendix 7: Permission letter

UNITED REPUBLIC OF TANZANIA

MINISTRY OF HEALTH

JAKAYA KIKWETE CARDIAC INSTITUTE
(JKCI)

JAKAYA KIKWETE CARDIAC INSTITUTE

In reply please quote;
Ref No: AB.123/307/01K/42

27/05/2024

Kulthum Said
HD/MUH/T.469/2022,
Cardiovascular Nursing - MUHAS

RE: PERMISSION TO CONDUCT RESEARCH AT JKCI

Reference is made to your letter requesting to do a research study entitled **"Assessment of cardiovascular Patient's satisfaction and its associated factors at outpatient clinic in Jakaya Kikwete Cardiac institute"**. here at JKCI.

This letter serves as an official document that permits you to do the above-mentioned task as requested. However, in accordance with your request, your designated JKCI co-supervisor will be **Robert Aloyce**.

It is our sincere hope that you will adhere strictly to the rules and regulations governing good clinical practice. Your compliance with these standards will ensure the integrity and ethical conduct of your study.

JAKAYA KIKWETE CARDIAC INSTITUTE
P. O. Box 65141
Dar-es-Salaam
JKCI

Best Regards,

Dr. Pedro Pallangyo
Head of Research, Training and Consultancy.
CC: ALL DIRECTORATES & Head of Units; Robert Aloyce

Appendix 8: Plagiarism certificates

turnitin

Digital Receipt

This receipt acknowledges that Turnitin received your paper. Below you will find the receipt information regarding your submission.

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