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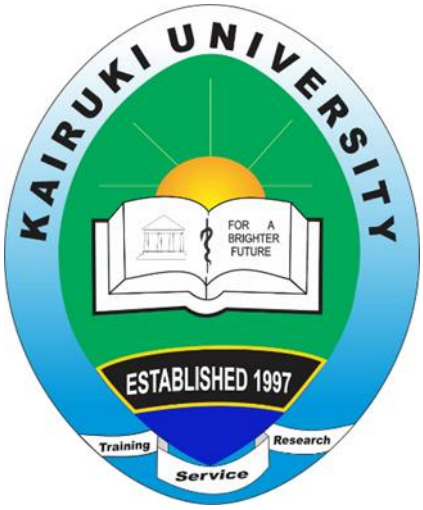

SCHOOL OF MEDICINE

DEPARTMENT OF COMMUNITY MEDICINE

PARENTAL SELF-MEDICATION PRACTICE AND ASSOCIATED FACTORS OF UNDER-FIVE CHILDREN IN ZANZIBAR

By

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A DISSERTATION SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF MASTER OF SCIENCE IN PUBLIC HEALTH OF THE KAIRUKI UNIVERSITY.

OCTOBER, 2024

CERTIFICATION

It is hereby certified that the under signed have read and hereby recommends acceptance by Kairuki University, a Dissertation titled: "Parental self-medication practice and associated factors of under-five children in Zanzibar" in partial fulfillment of the requirements for the degree of Master of Science in Public Health.

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2. Prof Amos Yared Massele	……	……

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ACKNOWLEDGEMENT

I am profoundly grateful to Allah for bestowing upon me the strength and perseverance necessary to complete this work. His unwavering love and care have been my guiding light, enabling me to overcome challenges and strive towards my goals. I extend my heartfelt thanks to my supervisor, Professor Massele, for his exceptional mentorship and unwavering support throughout this journey. His invaluable guidance, from the initial research proposal to the final dissertation, has been instrumental in shaping my academic growth. Special thanks to the Chairperson of the Department, Professor Kabalimu, Professor Semali, Professor Ndosi, and Professor Ntabaye, for their collaboration and support in conducting this research at Kairuki University.

I am also deeply indebted to the Ministry of Health in Zanzibar for their generous sponsorship and unwavering support of my studies. Dr. Amour Suleiman's expertise and advice have been invaluable in navigating the complexities of this research.

Finally, I would like to express my sincere gratitude to Dr. Optat Kajuna, my esteemed colleagues, my family and friends for their unwavering love, encouragement, and belief in me. Their support has been the cornerstone of my academic journey.

DEDICATION

I dedicate this Dissertation to my beloved father, Mr. Mohammed Habib, and my uncle, Mr. Mkubwa Baalawy, their unwavering love, support, and guidance have been the cornerstone of my academic journey. I will forever be grateful for the countless hours you spent helping me, and for the unwavering belief, they have always had in me.

I am also deeply indebted to my family, especially my brothers Alawi, Suleiman, and Habib, and my lovely sister Raya. Your prayers, encouragement, and constant support have been invaluable in helping me overcome challenges and achieve my goals. Special thanks to my sister in-laws Fatma, Zuhura and Maryam for their unwavering belief in me and their constant encouragement. Their support has meant the world to me.

ABSTRACT

Background: Self-medication, defined as the use of medications without a healthcare professional's supervision, is a widespread public health problem across both developed and developing countries.

Objective: The broad objective of the study was to determine the magnitude, type and source of parental self-medication as well as the factors associated with parental self-medication practice of under-five children in Zanzibar.

Methods: This study was a descriptive cross-sectional study conducted among guardians of under-five year children attending at Reproductive and Child Health clinics in four public health centers in Magharibi B Zanzibar. Socio-demographic characteristics and information related to parental self-medication practice of children were collected using a structured questionnaire. Descriptive statistics were used to summarize the data and to determine the magnitude of parental self-medication practice.

Results: A total of 427 participants were enrolled in the study. The magnitude of parental self-medication was at 92.3 % (394). Paracetamol and cough syrup were the most common medicines in 38.3% (151) and paracetamol 37.8 % (149) of the study participants. Pharmacy, left over medicine, heath centers and relatives were the common sources of parental self-medication practice of under-five children in 212 (49.6%).

Conclusions: The magnitude of parental self-medication of under-five children was relatively high compared to the average of other studies done in Tanzania. Paracetamol and cough syrup were the common medications administered by guardians. The

common sources of parental self-medication for under-fives medications were community pharmacies, health centers and relatives.

Key words: *Self-medication, parents, medicines and under-five children*

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ABBREVIATIONS AND ACRONYMS

AMR	Anti-microbial resistance
KU	Kairuki University
OTC	Over-the-counter
RCH	Reproductive and Child Health
SDG	Sustainable Development Goals
SM	Self-medication
SPSS	Statistical Package for Social Sciences
UNICEF	United Nations Children's Fund
USA	United States of America
WHO	World Health Organization
ZAHRI	Zanzibar Health Research Institute

DEFINITION OF TERMS

According to the World Health Organization self-medication consists of the use of medicinal products by the customer to treat self-diagnosed symptoms or irregular or proceed with the use of medicine prescription by a physician for chronic or recurrent disease or symptoms (1).

A child is a human being from birth to the age of 18 years. The child should be under the supervision and protection of the parent. The under-five refers to the child under the age of five years (2).

A parent according to UNICEF is defined as any caregiver or guardian responsible for the care of a child. A parent can be a child's biological mother or father or another relative (3).

A **Likert scale** is a rating scale used to measure opinions, attitudes, or behaviors. It consists of a statement or a question, followed by a series of five or seven answer statements. Respondents choose the option that best corresponds with how they feel about the statement or question as respondents are presented with a range of possible answers. Likert scales are great for capturing the level of agreement or their feelings regarding the topic in a more nuanced way.

However, Likert scales are prone to response bias, where respondents either agree or disagree with all the statements due to fatigue or social desirability or have a tendency toward extreme responding or other demand characteristics.

CHAPTER ONE: INTRODUCTION

1.1 Background

Self-medication, defined as the use of medications without a healthcare professional's supervision, is a widespread public health concern across both developed and developing countries (4,5). This practice may be hazardous for young children; whose bodies are more susceptible to the risks of inappropriate medication use. The global prevalence of parental self-medication of under-five children ranges between 40% and 90% (6–8, 16, 23, 25).

Self-medication still has become a hot discussion in healthcare settings around the world, drug safety continues to be a serious public health issue, whereby in 2021 nearly five million under-five children die worldwide (9).

In sub-Saharan Africa, parental self-medication of under-five children is high, about 95% in Congo, 78% in Rwanda, 53% in Nigeria and 40.9% in Madagascar. Approximately about 2.8 million children die before reaching 5 years of age; self-medication was the one of contributing factors.

Hence, there is a need to put in place multi-sectoral interventions and effective measures to reduce burden of self-medication practice in order to meet Sustainable Development Goal number 3 (10–15).

Some studies show parents regardless of the illnesses of their children do not take it seriously and therefore do not seek any health care consultation or treatment (16).

In Tanzania, self-medication rates among parents of under-five children are relatively high; which is a reason for great concern. A study in Bagamoyo district in Tanzania found that nearly half (47.7%) of parents practiced self-medication, highlighting the need for further investigations (6).

In Zanzibar, the rates of parental self-medication are about 69%of children with fever treated with antibiotics. However, there is scarcity of data on parental self-medication practice of under-five children, despite of efforts that are in progress to improve child health and wellbeing (17,18).

Therefore in this case, understanding the magnitude and the factors associated with parental self-medication practices in Magharibi B Zanzibar is an important study topic. The results of the study will shed light on the extent of the problem and potentially inform the need of having interventions to promote safe and effective medication use among children. Moreover, identifying the specific issues of self-medication practice in this community will enable targeted public health campaigns to address the problem, raise awareness among parents empower parents to make informed decisions about their children's health and improve utilization of health services.

1.2 Problem statement

Parental self-medication seems to be a prevalent problem in Zanzibar, despite efforts to improve child health, the practice of parental self-medication of under-five children continues to be a critical concern (18). Various factors are hypothesized to drive parental self-medication, including limited access to healthcare facilities, financial constraints, cultural beliefs, and inadequate knowledge about medication risks. Evidence suggests that self-medication of children is associated with negative consequences on children's health, including antibiotic resistance, incorrect dosages, and adverse drug reactions and poses a considerable threat to the health of these children caused by their parents (4, 6, 7, 20).

Parental self-medication practice if will not be addressed effectively in Magharibi B, may lead to improper utilization of scarce resources and increase health risks in children of under-five years (10,11,19).

Studies indicated that about 69% of children in Zanzibar received antibiotics to treat fever which indicates the irrationale use of antibiotics. Specifically, the lack of up-to-date data focused on parental self-medication practice in Zanzibar, hence the need for undertaking this study (17).

Subsequently, this knowledge gap must be addressed to foster the promotion of safe and appropriate medication usage among children at the public health centres in Magharibi B, thereby ultimately enhancing their health outcomes.

1.3 Study objectives

1.3.1 Broad objective

The broad objective of the study was to determine the magnitude and associated factors related with parental self-medication practice of under-five children in Zanzibar.

1.3.2 Specific objectives

1.3.2.1 To determine the magnitude of parental self-medication practice of under-five children in Magharibi B Zanzibar.

1.3.2.2 To identify the type of medication used in parental self-medication practice of under-five children in Magharibi B Zanzibar.

1.4 Rationale of the study

Parental self-medication of children poses serious risks like incorrect dosages, adverse reactions, antibiotic resistance, and delayed initiation of correct treatment.

Understanding the prevalence and associated factors driving this practice is crucial in clinical application and public well-being and also provide valuable self-medication insights in hospital settings for health care providers and community in order to reduce improper self-medication practice and improve public health care services. The findings can inform the Ministry of Health, development partners, and policymakers in designing targeted strategies and interventions to address parental self-medication practice in under-fives. The study can raise public awareness among parents about improper self-medication consequences and promote informed healthcare decisions for children.

This study will contribute towards fulfilling the requirement of the degree of Master of Science in Public Health as a public health professional.

1.5 Research questions

1.5.1 What is the magnitude of parental self-medication practice of under-five children in Magharibi B Zanzibar?

1.5.2 Which medication is used for parental self-medication practice of under-five children Magharibi B Zanzibar?

CHAPTER TWO: LITERATURE REVIEW

2.1 Empiric review

Parental self-medication, defined as the administration of medicines to children without a healthcare professional's prescription, is a widespread practice with potentially detrimental consequences for children's health. Studies show that self-medication rates can reach up to 50% in certain regions, highlighting the need for a deeper understanding of this behaviour. This study aims to investigate factors associated with parental self-medication practices of children in Magharibi B public health centres in Zanzibar, Tanzania (20–22).

The practice of self-medication is a major concern in healthcare settings. It is frequently recognized in both developed and developing countries since self-medication is not limited to any nation or race in the world. The notion of self-medication has been identified and labeled as a public health concern because of its high magnitude globally. Self-medication has increased globally and is characterized by economic, cultural and political aspects of life (4,10,11,19).

The irrational use of medicine is a global serious problem due to improper self-medication practices that may result in negative consequences such as drug resistance, adverse reactions, increased morbidity and mortality and maximized burden for resource utilization like the United States of America and Europe (19).

WHO has formulated and published Guidelines for maintenance in assessing medicine products that are used in self-medication. It also recommends that all people require adequate knowledge of the proper use of self-medication practice in all countries (19).

In European countries, parental self-medication in children is reported to be high ranging from 81% to 98.6% in the studies done in Italy and Romania respectively. This

indicates that under-five children are more likely to be self-medicated by their parents in European countries (23, 24).

In addition, the study revealed that parents have low knowledge of the utilization of non-prescribed drugs in about 74.4%. It estimated that 95% of participants used paracetamol as their priority drug either for fever or headache, 49% were not considering the proper use and indicated the negative effects like liver toxicity (23).

In addition, 61% of probiotics are the most frequently drug used for gastrointestinal disorders and 22% used corticosteroid-based medicine taken by parents for skin illness. Vitamin supplements were used by about 27% and traditional medicine by 14% to improve children's immunity, and 27% represented no drug used. While in Romania, symptoms like fever, cough, abdominal pain and diarrhoea were the cause for parental self-mediation in children (23, 24).

In terms of sources of information used by parents for self-medicating children it including the internet whereby parents are more likely to use self-medication. Therefore, parents tend to utilize the internet as a source of information in seeking their children's medication or treatment. The study in Romania reported a similar source used by parents like online sources to find out health information about children's illnesses, without seeking for physician consultation at healthcare facilities. To reduce the improper use of drugs, the World Health Organization recommended and respected the significance and function of pharmacists in patients' self-medication and self-care. It is a fact that the role of pharmacists has become crucial for self-medication and improving the health and well-being of children (23, 24).

A study revealed that women were more likely to practice self-medication with their children as compared to men. This is similar to other studies done (23).

Apart from that the study revealed the core factors of self-medication included cultural factors, accessibility of pediatric health care services, cost of health facilities and respondent's socio-economic status which differ from the study of Italy (24).

American studies including the study in Mexico showed that most of the participants were mothers about 71.8% which is similar to other studies and the prevalence of parental self-medication in children was 49.6% which indicates high prevalence, whereas there is a need for public health measures to control the parental self-medication practice of children. According to this study, self-medication can be influenced by various factors such as age, having more than two children, children with serious sickness, moderate level of education, joblessness or jobs which are not familiar with health, socio-economic status and lack of health insurance. This differs from other studies (24, 25).

The study also reported sources of information on parental self-medication practice for their children are similar to other studies done, with about 55.8% taking advice from relatives or friends and 28% making the decision by using themselves. Therefore, the core factors of self-medicating children including 69.9% thought that the sicknesses were not chronic, 51.9% utilized the leftovers at home, 8.8% took advice from drug store employers and 5% used media (25).

The type of medicine commonly utilized was the product of Vicks 61.3%, paracetamol 56.9%, and chamomile 33.1% common prevalence symptoms were influenza 47.7%, and cough about 34.2% which varied from Italy's study (23, 25).

In addition, the study revealed the common adverse reactions were headache 37%, vomiting 24%, dizziness 18%, irritability 6% and stomachache 5%. Moreover, about 19 -25% were influenced by negative effects like headache, 3% among cases of irritability

were associated with the expenditure of loratadine, where dizziness was estimated at 7% of cases, 2% of cases of stomachache and 14% of cases on vomiting were related with the use of ibuprofen, similar to the study of Italy (23, 25).

Apart from that, the study showed that the common symptoms used for parental self-medication in children were associated with the respiratory and digestive systems which are similar to other studies. The most popular medicines used by parents for their children include metronidazole, antibiotics and vitamin supplements, which show similarities with other studies (25).

In Asian countries, the prevalence of self-medication in children was estimated to lie between32%, 43.2% and 58.82% in the studies done in India, Egypt and Indonesia respectively. This differs from European countries which have high prevalence compared to Asian countries (16, 17, 26).

The studies also indicated core factors that influence parental self-medication are time constraints. The lack of time for those parents who engage in work contributes to inadequate time to send their children to the hospital instead they buy medicine when their children become sick, similar to the study done in Nigeria. Following previous prescription drugs, they view the sickness as not serious in seek physician consultation and financial problems. Self-medication practices need argent attention in children since under-five children are regarded to be at risk of receiving improper drugs since they are prone to acquire various diseases and their low immunity during childhood that is why parents should put more consideration in caring the under-five children (21, 26).

Furthermore, the studies revealed that the source of drug information for parental self-medication in children was the leftover drugs frequently used from previous illnesses,

followed by a pharmacy, mother themselves, relatives and nurses, similar to studies done in Egypt and India (7, 16, 27).

In Egypt, the proportion of parents used over-the-counter drugs for their children 3 – 4 times per month. In addition, antipyretic is frequently used in about 91% to reduce the pain of fever (7).

The study found that symptoms which are regularly used for self-medication of children include fever, cough and cold which are similar to other studies. Drugs which are usually used are paracetamol, anti-cold and antibiotics. Paracetamol is the most frequent drug used for self-medication among children about 167 (70%) similar to the study done in Italy. Also, it is used as a single drug in 89 (37%) and interaction with other drugs in 78 (33%). Cough and cold treatment was utilized by 64 (27%) and antibiotics by 28 (20%) - were regular drugs used for self-medication among parents for their children (26).

In sub-Saharan countries, the study in Nigeria depicted the rates of parental self-medication in under-five children as ranging from 40.9%, 53.4%, 78% and 95% respectively in Madagascar, Nigeria, Rwanda and Congo. This indicates the high burden of parental self-medication practice in developing countries which requires preventive and control measures to minimize the problem of self-medication practice for children (12–15).

In addition, about 81.4% reported that mothers never used non-prescribed drugs for their children, 47.3% practiced self-medication depending on their skills, but the other 19% listened to their relatives in utilizing non-prescribe medicine (12).

Moreover, the study showed 49.1% reported malaria as the common symptom for children at home, followed by cold at about 22.6% and measles at 9.3% respectively.

The magnitude of self-medication varies from the context of the community that experienced the sickness; this also differs from other studies (12).

On the hand the source of medicine used in parental self-medicating of under-five children, where most of the participants is estimated to be 81.4% revealed by the study used a drug without physician consultation, 26.6% utilized it for the treatment of malaria. Approximately 48.9% of mothers got the drugs from patent medicine vendors or obtained them from drug stores. This similar to the study done in Mexico, Europe and Asia (12).

Not only that but also, but the study showed that mothers supported the use of traditional medicine by pregnant women and under-five children. They do not care about the source of drugs they are using, whereby this practice is not safe and requires various public health interventions to minimize the burden of self-medication practice (12).

The determinants that influence parental self-medication in children include the level of skills and awareness of mothers, the availability of drugs and financial constraints which is similar to the study done in Asia (12).

Apart from that the practice of self-medication has been recorded as a regular routine towards children of under-five years. Hence, the provision of self-medication education based on mothers understanding was low and required various public health measures to minimize the problem, to improve the health of children (12).

Furthermore, the study discovered that advertisement was the common factor that contributed to parental self-medication for their children about 38.6% which indicates high rates, whereby parents of rural Nigeria are more likely to use it for self-medication practice differs from other studies (12).

The study of Madagascar revealed the common symptoms influenced by the practice of self-medication were fever represented 63.89%, followed by cough and respiratory problems at 21%, and headache and diarrhea at 8.39%. Similar to other studies done in Sub-Saharan countries and Asia (15).

The main factors associated with parental self-medication in children were financial problems, time constraints and thinking the illness was not serious in children. This finding is similar to the study done in Nigeria. In addition, amoxicillin was a normally used antibiotic about 58% where the duration of taking the drug was 3 - 5 days and 8% of children were provided treatment with 2 antibiotics not prescribed respectively (15).

Furthermore, low level of knowledge regarding proper use of parental self-medication in children was reported in the study including drug resistance under specific conditions. Therefore, the provision of education concerned with the rational use of medicine in practice needs attention particularly from parents, since public health insists on acquiring knowledge of using medicine properly to promote the health condition of children and prevent them from harm or danger as WHO recommended (15).

According to the study done in Rwanda, 51% of the parents utilized contemporary medicine, the other 16% utilized herbal self-medication and 33.3% used a combination of drugs both contemporary and herbal medication practice. This differ from studies in European countries (13).

Moreover, paracetamol was shown as the most frequently used contemporary medicine for parents who self-medicate their children. The second drug most commonly used in

self-medicating children was cough syrup, followed by intestinal medicine used for self-medicating children. Similar to studies in Europe (13).

Advice from friends and relatives was a major source in using herbal medicine while parents also practice self-medication with contemporary medicine for their children without physician consultation. Similar to the study done in Nigeria (13).

The data showed that about 20% of parents used antibiotics in practicing self-medication for their children, as a global purpose in fighting against antibiotic resistance, thus this kind of self-medication requires various public health measures to reduce the burden of the problem (13).

The study done in Congo discovered the most common causes for parental self-medication discovered were lack of health information, children's caregivers providing unsatisfactory care and the children experiencing a chronic disease. This situation requires public health campaigns regarding knowledge of proper self-medication to parents towards their children (14).

Moreover, the study reported the core source of information used by parents for self-medicating their under-five children including the drugs previously prescribed by health workers 23%, took advice from drug sellers 64%, 91% utilized anti-malarial, 41% anti-pyretic and 26% antibiotics. This finding is similar to a study done in Rwanda. The study depicted that the drugs for respiratory illnesses were the most frequently used for self-medicating under-five children. Similar to a study done in other sub-Saharan countries (14).

In addition, a large portion of mothers about 95% did not understand the dosage of drugs they were using, and 97.17% of mothers were not aware of even checking the expiration date of the drugs. This depicted a big challenge towards the children's well-

being and requires promoting and improving their health condition, the knowledge gap should be addressed. As well as parents' knowledge of concern with the appropriate utilization of drugs also required public health intervention (14).

Apart from that study reported that self-medication practice brought health consequences to children hence dosages differ with consideration of weight and body surface. Also, an under-dosing of medicine can influence the risk of increasing drug resistance and an overdose of drugs can be associated with a risk of kidney and liver damage. Similar to studies done in Europe and Africa (14).

Improper use of parental self-medicating in children can be associated with various factors such as ignorance, poverty, improper performance of the health workers toward their patients, financial problems because of increasing costs in health centres, self-treatment, an increasing number of over-the-counter drugs due to easily available, presence of medicine outside pharmacies, increase drug advertisement and low family support; which is similar to studies done in African countries (14).

In addition, the study reported the use of a combination of drugs, the utilization of non-prescription medicine, abuse of prescribed drugs using drugs in excessive amounts, and medication errors by mothers or caregivers may risk children's health and well-being. This needs prevention and control measures to minimize self-medication practices in under-five children (14).

In the study done by Kazaura in Tanzania, the results revealed that the proportion of parents who self-medicated under-five children was 47.7% in Bagamoyo district and was associated with low level of knowledge and proper use of antibiotic drugs by parents in under-five children. Antibiotics which were frequently used for parental self-medicating under-five children was amoxicillin in about 181 (62%); which is similar to a

study done in Congo. A similar study done in Mexico reported that drug stores as the main source of obtaining antibiotics in approximately 29 (99.7%) (6).

Furthermore, over-prescribing of antibiotics in some parts of Tanzania can be associated with self-medication, so the reason for this practice prescription includes partial prescription, diagnostic uncertainty, easily available medicine and unavailability of treatment guidelines (6). While previous studies shed light on this problem, limitations exist. Many studies focus on broader populations or specific geographical regions, neglecting local contexts like Magharibi B (5,22,24,28).

The studies suggest interventions like educational programs to improve parental understanding about safe medication use for children, improved healthcare access by reducing wait times and costs in Zanzibar, pharmacist training to provide better guidance on medication use and public awareness campaigns on the risks of parental self-medication practice (36).

Additionally, previous studies often looked at prevalence rates but lacks an in-depth exploration of specific factors driving this practice. This study aims to address these gaps by investigating factors associated with motivations of parents who self-medicated their under-five children in Magharibi B, may contribute to formulation of targeted interventions and improved child health conditions (6,12–14).

By determining the factors associated with parental self-medication practice in Magharibi B public health centres, this study will be the basis for proposing interventions for promoting safe and appropriate medication use among under-five children. The findings contributed to improving healthcare access, knowledge dissemination, and responsible medication practices within the community. By

implementing these strategies, Zanzibar can promote better health outcome for children of under-five years and combat the dangers of self-medication practice.

2.2 Conceptual framework for the study

Various factors are associated with self-medication of under five children therefore practice differs from one population to another and is contributed by different factors like gender, expenditure, self-concern and economics. Also, education level, socio-economic status, access to medical information and awareness about health. Also, availability of medicine and provision of health care facilities, medical knowledge, satisfaction and lack of seriousness of illnesses (4,5). High illiteracy rate and poor health literacy exposure to medical information in most sub-Saharan countries are some of the influencing factors that may lead to the high prevalence of parental self-medication in children (4, 5).

Self-medication also motivates parents to practice it and is also associated with ignorance, long distance from health care facilities, financial problems that influence parents to not afford the drugs, minor illnesses and bad attitudes toward health workers like rude and unsatisfactory health services. This situation influences the parent's discouragement to seek physician consultation for their children (4, 5).

According to WHO irrational use of drugs may be associated with negative consequences like anti-microbial resistance, poor condition of children, drug intoxication to the liver, damage to the kidney and others. Self-medication practice is also associated with all ages and even in distinctive biological conditions such as pregnancy and lactation. Most parents used drugs incorrectly for their children and overdosed without considering the results (4, 6, 8, 27, 28).

With regard to the source of medicines used in parental self-medication of under-five children about 48.9% of mothers get drugs from patent medicine vendors or obtain from drug stores. Moreover, the study reported that parents use online sources to find out health information about children's illnesses, without seeking health care consultations at healthcare facilities. Parents used brochures of drugs to self-medicate under-five children and most of them 85% believed that self-medication has no harmful reactions and t only happens to few people (27). The studies reported that paracetamol and amoxicillin are common drugs used by parents when their children fall sick without seeking medical advice (6, 15, 26). The conceptual framework for the study is shown in Figure 1 below.

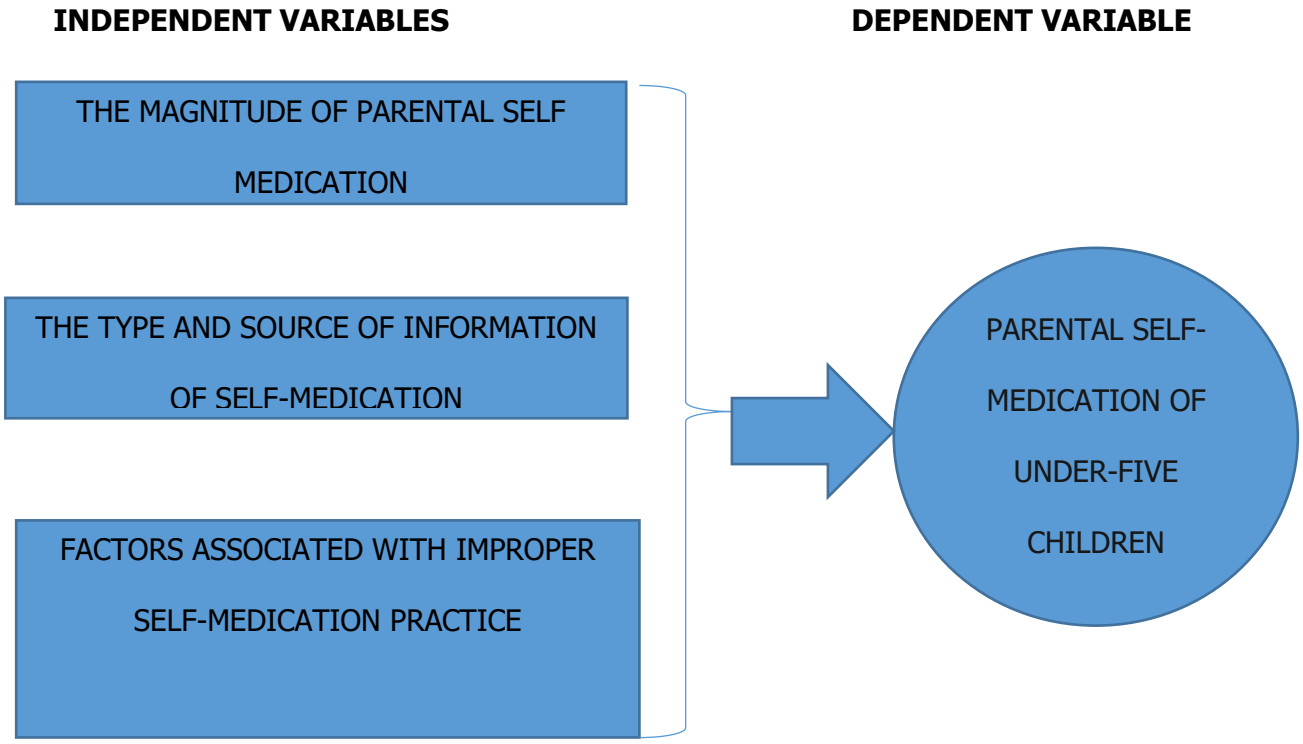

Figure 1: Conceptual framework that illustrates determinants of self-medication of under-five children by their parents. (Source: PI 2024)

CHAPTER THREE: METHODOLOGY

3.1 Study area and population

The study was conducted at Magharibi B public health centres among mothers/caretakers of children less than 5 years of age attending Reproductive and Child Health clinics (RCH). Magharibi B is bordered by Magharibi A in the North, the Kati and Kusini Region in the East, the Indian Ocean in the South and by Zanzibar Mjini district in the West. There are 10 public health centres that provide RCH services in the Magharibi B municipal council (29). The public health centres were selected in order to get precise data that met the minimal sample size of the study. Also, most private health centres are for-profit and few parents can afford to seek RCH services at private clinics for their children which make it difficult to achieve the sample size. Because public health centres attends to a high number of parents who seeking care for their children and helped the study to collect data facilitated the within the limited time frame.

The study population were parents/guardians of under-five children seeking health care services in RCH clinics at public health centres of Magharibi B in Zanzibar. Parents are included in the study because of their responsibilities in care and supervision of their children's health.

Figure 2: Shows the districts of Zanzibar Island including Magharibi B

3.2 Study design

This was a descriptive cross-sectional study design conducted among parents of under-five children. It was conducted from June to August 2024 in Magharibi B, Zanzibar. The study used a quantitative approach. This design was appropriate as it allows to collect information on the prevalence and description of parental self-medication of under-five children practice at a specific point in time (30,31).

3.3 Sampling methods

The study used several sampling techniques to identify eligible study participants as describe below.

Stage 1: Simple random sampling to select health centres

The first stage was to select the study health facilities from among all health centres in Magharib B by simple random sampling. This technique was useful because the population of the study is geographically dispersed and this method ensures representativeness and minimizes selection bias. Each study health facility had an equal chance of being selected in this study. The technique involved listing all 10 public health centres in Magharibi B, which were providing RCH clinics services. The PI used pieces of paper to write down all the names of health centres and each one had its number starting with 1-10 and were thoroughly mixed. After that, the PI picked 4 pieces of paper randomly to avoid bias which represented all public health centres in Magharibi B. Selected health centres were Magogoni, Chukwani, Fuoni and Kombeni.

Stage 2: Sample allocation

Attendances at RCH clinics in the last one month among the selected facilities were summed to overall total. Each facility's contribution to the sample size was determined by the last month facility attendance divided by the overall total. The facility study sample was sample size X (times) last month facility attendance/overall total facility attendance. This method used by the PI on the basis of number of attendees of RCH clinics at each of the selected health center each day.

Stage 3: Consecutive sampling

The second stage was to select participants from each health facility. This is a non-probability sampling technique that involved selecting every eligible subject who visited the health facility each day until the sample size expected for each facility was achieved. This technique was considered the best non-probability sampling method which controls sampling bias due to including all available participants of the study.

This technique included all parents available at RCH clinics who are willing to participate in the study and who granted informed consent to participate in the study. The study enrolled study participants consecutively until the sample size was reached.

3.3.1 Sample size estimation

The sample size for study was calculated using the Fisher formula as shown below.

$$n = \frac{Z^2 P (1-P)}{\varepsilon^2}$$

Whereby:

n = The minimum required sample size

Z = The confidence level is shown as a percentage point on the normal distribution.

If Z is 1.96 when the degree of significance is 95%.

ε = Maximum likely error/ margin of error i.e. 0.05

P = Proportion of parental self-medication in under-five with antibiotics done in Bagamoyo district, Tanzania by Beatus Simon and Kazaura which showed the proportion was 47.7% (6).

$$n = \frac{1.96 \times 1.96 \times 0.48 (1-0.48)}{0.05 \times 0.05}$$

$$n \approx 384 \text{ study participants.}$$

Adjusting for 10% non-response - 384/1-0.1 = 427 parents.

Therefore, the minimum sample size is 427 parents of under-five children.

1.3.2 The allocation of eligible study participants

The allocation of study participants at the four health centers is shown in Table 1 below.

Table 1: Allocation of eligible study participants at each health center

SN	HEALTH FACILITY	NUMBER OF RCH ATTENDEES	PROPORTION	ALLOCATED NUMBER OF PARTICIPANTS
1	CHUKWANI	35	35/143 x 427	105
2	FUONI	40	40/143 x 427	119
3	MAGOGONI	38	38/143 x 427	113
4	KOMBENI	30	3O/143 x 427	90
	TOTAL	**143**		**427**

Allocation of eligible study participants at each health center

Eligible study participants at each health were enrolled consecutively until the study sample was attained.

3.4 Procedures for Data Collection

3.4.1 Data collection tools

Data was collected using a structured questionnaire containing closed-ended questions. This study used primary data and used a questionnaire which was adapted and modified from a previous study by Gladson Monjenza (20). The questionnaire was prepared in English and then translated into the Swahili language. All English and Swahili questionnaires were self-administered to the study respondents. It contains four sections.

Section 1: Socio-demographic characteristics of the parents such as age, level of education, marital status and occupation.

Section 2: Questions of the magnitude of parental self-medication of under-five children.

Section 3: Questions of type of medication and source of information of drugs used in parental self-medication in under-five children.

Section 4: Questions that focused on factors associated with the improper use of parental self-medication of under-five children.

The PI assigned three people as research assistants and each one was trained on research etiquette, and data collection tools to facilitate the data collection procedure effectively. Before distributing the questionnaire to parents, the Swahili questionnaire was verified among 30 parents at each health facility which were not included performed in this study. This helped the researcher to test if the question was well understood, and precise and convey intended information to the study's respondents to in the actual data collection for the study to check the tool's reliability and validity.

3.4.2 Data collection methods

The PI and research assistants screened eligible parents of children attending RCH clinics in the four health facilities every working day for the study period of three months. Each mother/caretaker of child less than 5 years was provided with an in-depth explanation of the purpose of the study and that whether participating into the study, the child will receive care as standards without any bias. After that the mother or caretaker was asked to provide informed consent. If informed consent was granted the mother was asked to document this by signing the informed consent form. Only after obtaining the informed consent from each mother/caretaker were study procedures carried out which included getting answers guided by the structured questionnaire.

3.4.3 Eligibility criteria

Inclusion criteria

1) It included parents or guardians of children aged 0-5 years seeking care at the selected health centres in Magharibi B.
2) Parent's age starts at 18 – 50 years. The parents above 18 years granted informed consent to participate in the study

Exclusion criteria

1) Parents or guardians of children with chronic illnesses requiring long term medical care.
2) Parents or guardians who did not grant informed consent unable to participate in the study
3) Parents who had language barriers or cognitive limitations.

3.4.4 Study variables

3.4.4.1 Dependent variables

The dependent variable in the study was Parental self-medication of under-five children without advice of a physician or medical personnel. This refers to the dependent variable which indicated whether parents self-medicating their children in the past 6 months.

3.4.4.2 Independent variables

Socio-demographic characteristics

This included the age of the parent, level of education of the parent and occupation and showed how self-medication practice was associated with socio-demographic factors.

Magnitude of parental self-medication

This independent variable indicated the prevalence associated with self-medication, it can be high or low.

Type of medication and source of information used on parental self-medication

This independent variable showed which is the common type of medication and and the source of information used in facilitating self-medication practice.

Factors associated with improper parental self-medication

This also is one of the independent variables that showed an association with factors that associated with levels of knowledge regarding improper self-medication practice to participants.

Mediator variable

Information-seeking behavior

This could capture how parents seek information about their child's health (like medical consultations with health care professionals, searching online, or relying on family/friends). This variable might mediate the relationship between knowledge and self-medication practice to under-five children.

3.4.5 Ethical considerations

The study protocol was reviewed by the Institutional Research and Ethics Committee of Kairuki University and ethical clearance was granted. The research also approved by the Zanzibar Health Research Institute, Second Vice-president Office and the Chief Statistician Office in Zanzibar. The study met the requirements of ethical principles in order to protect the dignity, rights and welfare of research participants in order to avoid risk or harm.

Rights of participants: Each participant had the right to freedom of expression and the right to withdraw from the study at any time. This study was not harmed any participants but it might cause discomfort due to some of the sensitive questions which affect the emotional and refuse to provide accurate data in responding questions. The investigator provided education to the participants on the purpose of the study. The researcher was also cooperated with the psycho-social department in public health centres in preparing them psychologically to remove fear and felt comfortable to answer the questions appropriately.

Confidentiality: All information kept confidential. The participants' names secured and assigned using code to represent the participants' names.

Informed consent: Participants granted informed to participate in the study and was documented by a signed a consent form.

3.4.6 Reliability and validity of the data collection tool

Validity refers to how accurately an idea is measured and whether the instrument covers all relevant content. Reliability means that the results should be consistent each time the test is administered or when different investigators obtain similar responses from participants. Therefore, before starting data collection for the study the Swahili questionnaire was pilot-tested among 30 parents at each health facility. This helped the study to test whether the questions were well understood and precise and conveyed the intended information to the study's respondents to ensure the tool's reliability and validity.

3.5 Data management

3.5.1 Data collection in the field

The PI and the research assistants made sure all the requirements are met including all materials necessary for data collection and the letter of introduction before undertaking data collection at the health facilities. For five working days the PI and research assistants went to the health facilities; screened eligible study participants; provided in-depth explanation about the purpose of the study and asked informed consent each parent/caretaker. Only parents who granted informed consent were enrolled into the study and the questionnaire was administered.

3.5.2 Data coding and cleaning

The study developed a formal plan outlining data collection, coding, cleaning, storage, and analysis. The data stored securely. All information was assigned by using codes instead of using the names of participants in the study.

Back-up data was done regularly. This helped the study to prevent loss of data.

Data was archived for future reference. This adhered to ethical guidelines and institutional data retention and sharing policies.

3.5.3 Data analysis

The data collected in the field was accurately recorded from questionnaires and transferred to IBM SPSS statistical package. The data entry, a Microsoft Excel Sheet, cleaning and analysis used a computer program - the Statistical Package for Social Sciences version 26 to analyze the data.

The study used descriptive statistics in analyzing data for the significant findings.

Analysis for specific objective 1 – Magnitude of self-medication

Descriptive statistics to analyze the data: This was summarized by the magnitude of parental self-medication practices. This involved percentage, frequency and tabulation of self-medication practice in under-five children. Moreover, the questions determined whether parental self-medication practice prevalence was low or high among under-five children.

Analysis for specific objective 2 – Type of medication

Descriptive statistics to analyze: This was summarized as the prevalence of self-medication and the distribution of the type of medication and its source. (Family, friends, internet, drug store and others). It involved the percentage, frequency and tabulation of parental self-medication in under-five children.

3.6 Dissemination of study findings

The findings of this study will be compiled into a Dissertation that will be submitted to the Department of Community Medicine of Kairuki University as partial fulfillment of the degree of Master of Science in Public Health.

Copies of the Dissertation will be made available to Zanzibar Research Committee, Office of the Chief Statistician, the Ministry of Health and the public health centers that had participated in the study. This will facilitate in providing health education to families and communities in order to raise awareness among parents and communities regarding the problem of parental self-medication of children.

A draft manuscript will be compiled for potential publication in per-reviewed journal. Moreover, whenever possible the PI will present the study at scientific conferences.

CHAPTER FOUR: RESULTS

4.1 Enrollment log

During the study period of three months from June to August 2024 a total of 427 parents of under-five children attending RCH clinics in four health facilities in Maghraribi B Municipal Council in Zanzibar were screened for eligibility criteria to be included into the study. None of parents had declined informed consent to participate in the study. Hence a total of 427 study participants were included in the final data analysis.

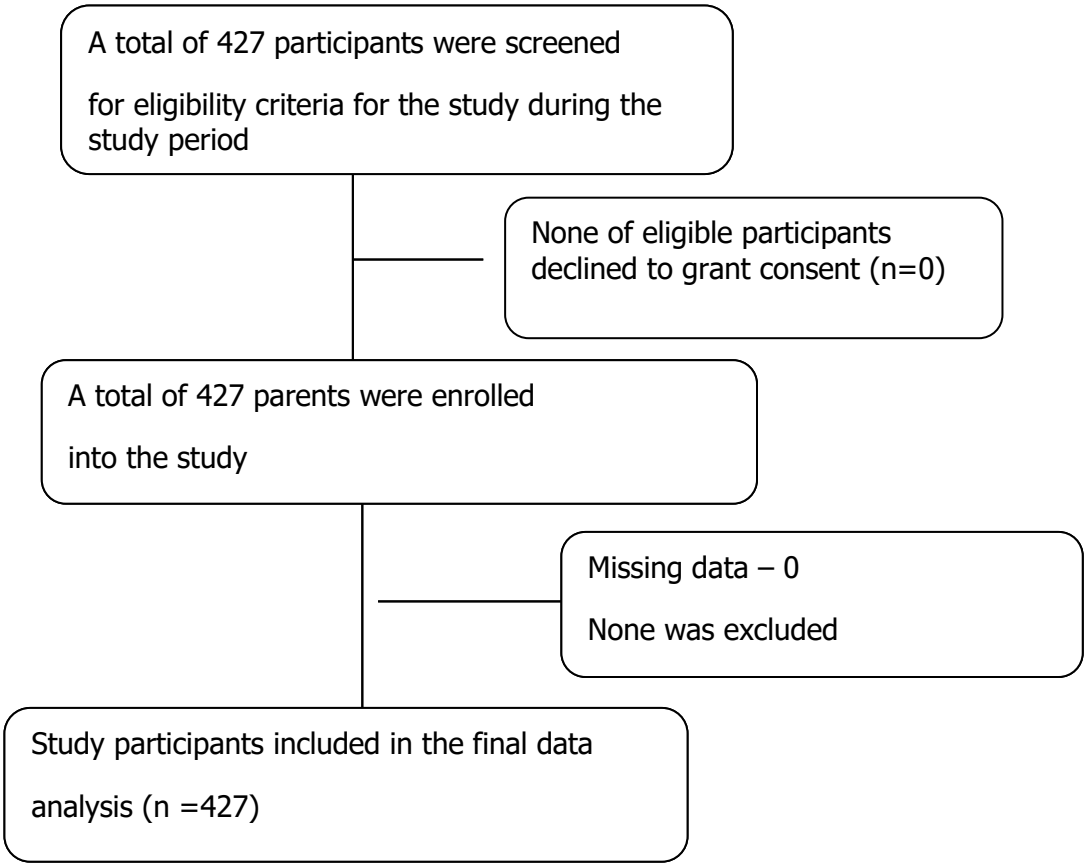

Figure 3: Enrollment flow chart of the study participants

4.2 Baseline socio-demographic and characteristics of study participants

4.2.1 Baseline characteristics of the mothers of study participants

In the study, the majority of participants had the age range between 18 and 27 years (48.5%) and most were females (93.2%). Approximately 92.04% were married and 54.33 % were employed (both public and private.) Most of guardians (71.2%) had secondary level of education.

This is shown in Table 2 below.

Table 2: Socio-demographic characteristics of study participants

Variables		Frequency (n =427)	Percentage
Age group of parents	18 – 27	207	48.5
in years	27 – 38	177	41.5
	38 – 47	43	10.0
Gender of guardian	Female	398	93.2
	Male	29	6.8
Marital status	Married	393	92.04
	Single	20	4.7
	Widow	10	2.3
	Divorced	4	0.94
Level of education	No formal education	6	1.4
	Primary education	113	26.5
	Secondary level	304	71.2
	Tertiary level	4	0.9
Employment status	Not employed	51	11.94
	Self-employed	144	33.72
	Employed	232	54.33
Relationship to the child	Mother	390	91.33
	Father	29	6.8
	Sister/Brother	3	0.70
	Aunt	5	1.17
Age of the child in years	0 - < 1	179	42
	1 - < 3	145	34
	3 - 5	103	24

4.3 Primary outcome - Magnitude of parental self-medication practice of under-five children.

Parental self-medication of under-five children occurred in 394 children giving a point prevalence of 92% (394/427× 100). This is shown in Figure 4 below.

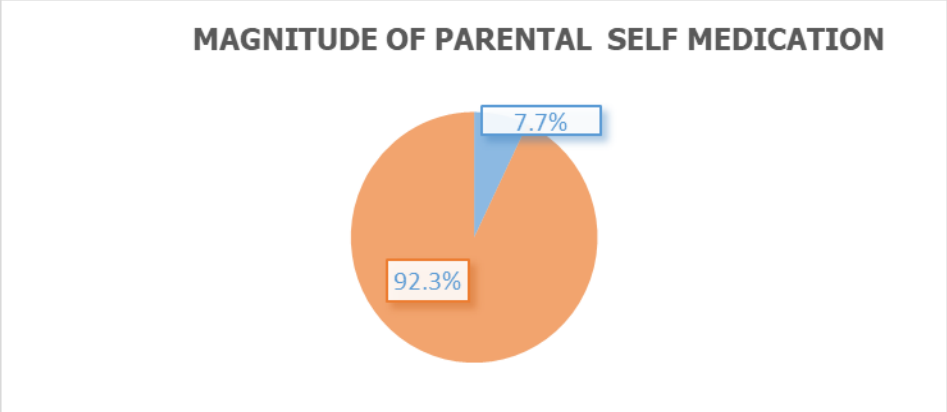

Figure 4: Pie chart show magnitude of parental self-medication practice of under-five children among study participants

4.4 Type of medicines and the source for parental self-medications administered to under-five children

Out of 427 children – 414 had fallen sick during the past 6 months before the study was initiated. Most of them presented with fever and/or cough. It was found out that cough syrup and paracetamol were the most often used drugs for self-medication (38.3%) and the most stored medications in the home was paracetamol (35.8%). The majority of parents kept medications in houses (92.1%) for emergency care (45.4%). On the other hand, fever, coughing and diarrhea were the common symptoms which motivated self-medication (42.8%). This is shown in Table 3 below.

Table 3: Types of medicines and the source used in self-medication

Variables		Frequency	Percentage%
	Diarrhea	19	4.6
Sickness in the past 6	Fever	11	2.7
months (n = 414)	Cough/influenza	48	11.6
	Fever, coughing	130	31.4
Signs and symptoms	Fever diarrhea	6	1.4
	Coughing diarrhea	16	4
	Coughing and eye infection.	5	1
	Fever, coughing and diarrhea	177	42.8
	Skin infection	2	0.5
Medicine used for self-	Panadol	149	37.8
	Cough syrup	12	3.0
medication of the child	Panadol, cough syrup, amoxicillin	48	12.2
	Panadol plus cough syrup	151	38.3
(n=394)	Panadol, amoxicillin	18	4.6
	Ibumex	3	0.8
	Panadol/ albendazole	2	0.5
	Panadol/cough syrup/Bonissan	11	2.8
Source of medicines	Pharmacy	129	30.2
	Pharmacy, health center, relative	212	49.6
	Left over	60	14.1
	Health center	18	4.2
	Grocery	1	0.2
	Neighbor	7	1.6
Do you keep medicines	Yes	394	92.3
at home?	No	33	7.7
Types of medicines	No medication kept	33	7.7
kept in the house	Paracetamol	141	35.8
(n = 394)	Cough syrup	7	1.8
	Panadol, amoxicillin	59	15
	Panadol and cough syrup	160	40.6
	Panadol , amoxicillin	17	4.3
	Bonissan	10	2.5
Reasons for keeping	First aid	124	31.5
medicines in the house	Emergency	179	45.4
(n = 394)	Pain/ fever management	80	20.3
	Flue	7	1.8
	Fever	4	1.0
Prescribed medicines	Medical personnel from heath centers	84	21.3
	Worker in the pharmacy shop.	267	67.8
(n = 394)	Relative	9	2.3
	None	34	8.6
Instructions on how to	Yes	381	96.7
use the medicines (n	No	13	3.3
= 394)			

4.5 Frequency, reasons and outcome of self-medication of children

In the study approximately 53% of parents did self-medicate their children very frequently. The main reasons for self-medication were reported to be acute/emergency illness 47% and 79% reported improvement of symptoms after self-medication.

Table 4: Factors, reasons and outcome of self-medication of children

Variables		**Frequency**	**Percentage**
How often have you been giving medication to your child? (n= 394)	Frequently	210	53.3
	Occasionally	100	25.4
	Rarely	84	21.3
Why did you use medication(s) without a prescription instead of seeking medical advice at the health facility?	Acute/Emergency illness	186	47.2
	Proximity of pharmacy shop	66	16.8
	Shortages of medicine in health center	34	8.6
	Long waiting time	72	18.3
	Financial constraints	36	9.1%
Did you observe any problems after self-medicating the child? (n=394)	Yes	50	13%
	No	344	87%
If condition worsened, what else did you do?	Went hospital	40	10.2
	Just stayed at home	10	2.5
What was the outcome of self-medicines which you used?	Recovered	30	7.6
	Improved	312	79.2
	Did not improve	50	12.7
	Died	2	0.5

CHAPTER FIVE: DISCUSSION

5.1 Overview of discussion

This was a descriptive cross-sectional study design that was conducted among parents of under-five children in Magharibi B, Zanzibar. This study aimed to determine the magnitude, type of medicines and source of parental self-medication among children under 5 years. Parental self-medication is concern of health worldwide and remain frequent despite variability of magnitude between countries. In the study, the magnitude of parental self-medication was estimated to be 92.1 % among study participants. Leading reasons for self-medication was acute illness while many of them reported improvement and those who did not improved were sent to health facility. The high self-medication in this study is also corroborated by similar findings reported in other developed countries where approximate 81 % and 98.6% respectively in Italia and Romania (23,24). Furthermore , this rate is relatively high compared to a study conducted in Tanzania by Gladson and colleagues where parental self-medication proportion observed was 68.8% and 71.5% respectively in children under and above 5 years (20). Similar results were reported in Rwanda by Ukwishaka and colleagues and in Nigeria by Bassi and colleagues in 78% and 69.7% of study participants respectively. The difference of study population and sampling technique may explained this difference. In the study, paracetamol was the most commonly used medication for self-medication in 154 (36%) of study participants following by cough syrup (34.8%). These results are consistent with the work of other authors, including a research by Ukwishaka and colleagues among parents and caregivers who visited both public and private health institutions in Rwanda, where the most widely utilized self-medication was Panadol (13). In addition cough syrup was the second common medication used

in Ukwishaka and colleagues findings. In a another study conducted in Brazil, paracetamol was the common medicine prescribed in grand children for self-medication (33). This may be due to the fact that paracetamol constitute the most commonly used medicine in emergency illnesses such as fever and pain as seen in this study where 51.3% of study participants self-medication due to the emergency illness. In addition, Panadol was the most commonly stored drug in the house, which may have exposed parents to self-medication. Furthermore, fever and cough were the common symptoms present in majority of children in this study which could have motivated parental self-medication of paracetamol and cough syrup. Controversies results were reported in Nigeria where, herbal medicines were the common type of self-medication used and relatives were the common source of medication (34). This could be due to the difference in study population and sampling technique used.

Furthermore, in the study, the most common source of self-medication was from both pharmacy, health centres and relatives in 49.6 % of participants. Pharmacy alone was the most common source in 30.2%. The presenting findings are in line with those one of Gladson and colleague in Tanzania where also community pharmacies where the major sources of parental self-medications (20). This may be the result of most community pharmacies not following the rules while selling drugs, allowing people to obtain drugs without a prescription, as noted by Pando and colleagues (2021) in a Tanzanian study (35). Controversial results were reported in Ethiopia by Shafie and colleagues where the common source of self-medication were health professionals and experience from previous treatment among households in Addis Abeba (36). Finally in this study reported factors associated with parental self-medication practice in under-five children were proximity to the pharmacy, presence of first aid medication in the

house, financial constraints, long waiting time and shortage of medicine in health centers.

5.2 Study strengths and limitations

The study was conducted in Magharibi B, which could have recruited participants with approximate similar environmental and cultural backgrounds, which might have affected the general perspective of the population. Moreover knowledge and attitude could not be measured accurately as the Likert tool determines opinion. Nonetheless the study had adequate power to determine the prevalence of self-medication practice of parents to their children.

5.3 Conclusions

The magnitude of parenteral self-medications in this study was relatively high compared to the average of other studies done in Tanzania. Paracetamol and cough syrup were the common medications used by guardians. The common sources of parental self-medication were community pharmacies, left over medicines, health centers and relatives.

5.4 Recommendations of the study

i. To organize Community education in order to raise awareness at household and community level about the problem of parental self-medication of children as well as among health care providers.
ii. To provide preventive measures in order to reduce self-medications in community pharmacies which were found to be a common source of medicines used in self-medication.

iii. Conduct further studies to delineate the knowledge, attitude and practice of self-medication by parents so as to develop comprehensive strategies to address the problem of self-medication of children in Zanzibar.

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APPENDICES

Appendix I: Consent form - English version

Greetings,

My name is Saida Habib. I am a post-graduate student of science in public health from Kairuki University in Dar es Salaam, Tanzania.

Purpose of the study

It is my pleasure to notify you that this is a research study titled Parental Self-medication Practice and associate factors for under-five Children in Zanzibar. I would like to provide you the information about your participation in this study.

The purpose of the study will be intended in clinical application and public wellbeing. This study will raise public awareness and provide knowledge focused on proper self-medication among parents for their children in Zanzibar. Kindly be honest and sincere for significant results that will contribute to public health intervention and policies in the future.

Confidentiality

The researcher will be considered the provision of ethical clearance in order to protect the rights of participants, ensured and treated the information with high privacy to the best of our knowledge. Your name will not appear in the questionnaire or in any report/document that might let someone recognize you. Your name will not be attached to the research information in any way. The investigator handle the data and information collected in the study. However,

the final results will be shared with national stakeholders and I will submit the manuscript for publication in a scientific journal.

Right and withdrawal alternative

Your participation is voluntary. You may refuse to participate in the study at any time during the survey and even after providing consent for participation. You are free to participate and have the right to freedom of expression to provide your opinion. Your decision to refuse participation will not be associated with your rights to access any health services. There is no punishment for refusing to participate in the study.

Benefits of the research

The information you will be provided will raise awareness to increase understanding and offer a clear picture of parental self-medication practice for under-five children. Therefore, this can assist in providing significant information and contribute to future healthcare policy formulation and strategic planning.

Risks of the research

It is expected that there will be harm for participating in the study, but discomfort may arise due to some questions that will be very sensitive to be answered by parents, like to use of herbal medicine or not seeking care at health facilities for their children when they sick and the question of serious illness of children not sent to hospital by their parents instead buying a medicine at pharmacy. Some of the parents will fear to say the truth and hide the information. The researcher will provide education to the parents concerning the

purpose of the study and will also cooperate with the psychosocial department in the health centre to prepare them psychologically to make them feel comfortable remove their fear and provide accurate information.

The survey will take approximately 10 – 15 minutes to complete.

Who to contact

If you have any questions about this study, you should contact the researcher Saida Habib 255 672 563969

Participant agrees……

I ……. I have read the contents in this form. My questions have been answered. I agree to participate in this study.

Signature of the participant …….

Signature of the researcher……

Date of signed consent…….

DECLARATION

The above document describes the benefits, risks and procedure for the research titled Parental Self-medication Practice to under-five Children, it has been read and explained to me and I have agreed to participate. I certify the purpose, potential benefits and possible risks associated with participating in this study have been explained to me.

A signature or right thumb stamp of the respondent…….

Date …….

Signature of researcher ……. Date…….

Fomu ya Ridhaa ya Mshiriki

Salamu,

Jina langu ni Saida Habib, ni mwanafunzi wa sayansi afya ya umma katika Chuo cha Tiba na Sayansi Kairuki Mikocheni, Dar es Salaam, Tanzania.

Madhumuni ya Utafiti

Ndugu mhojiwa, napenda kukujulisha kuwa somo hili la utafiti lenye jina la **"Mazoea ya wazazi ya utumiaji wa dawa tiba pasipo ushauri wa kitaalamu na sababu zinazosababishakwa watoto chini ya miaka mitano Zanzibar".**

Utafiti huu ni kwa lengo la kutumika katika hospitali na kwa ajili ya ustawi wa jamii au umma.

Usiri wa utafiti

Mtafiti atahakikisha amepata kibali kutoka bodi ya maadili ili kulinda haki za washiriki. Hii itasaidia kuziweka taarifa utakazozitowa kwa usiri wa hali ya juu kwa kadri ya ufahamu wetu. Sisi hatutoandika jina lako kwenye hojaji au katika ripoti yoyote / nyaraka ambayo inaweza kuruhusu mtu kukutambua wewe. Jina yako halitakuwa na mahusiano na habari za utafiti kwa njia yoyote. Watafiti watatunza takwimu na taarifa zitakazokusanywa. Hata hivyo, matokeo ya mwisho baada ya uchambuzi yatatumiwa na wadau wa kitaifa na nitawasilisha mada kwa ajili ya uchapishaji katika majarida ya kisayansi.

Ushiriki wako ni hiari. Unaweza kujitoa katika ushiriki na utafiti wakati wowote wakati wa mahojiano hata kama ulikuwa umekubali kushiriki. Uamuzi wako wa kushiriki au kutoshiriki hautohusishwa na haki yako ya kupata huduma yeyote ya afya. Hakuna adhabu kwa kukataa kushiriki katika utafiti. Hutokuwa na madhara yoyote kama hutoshiriki katika utafiti huu ila kutajitokeza usumbufu kwa kiwango kidogo.

Faida za Utafiti

Taarifa utakayotoa itasaidia kuongeza uelewa wetu na kutoa picha ya wazi juu ya maarifa ya wazazi kuhusiana na athari zinazotokana na matumizi ya dawa tiba pasipo ushauri wa kitaalamu. Hii inaweza kusaidia baadaye katika kutoa taarifa muhimu na kuchangia katika uundaji wa sera za kiafya na mipango mikakati.

Hatari au madhara ya utafiti

Haitarajiwi kwamba kutakuwa na madhara yoyote kwa ajili ya ushiriki wako katika utafiti huu.

Isipokuwa kutakuwa na usumbufu kwa kiwango kidogo kwa washiriki ambao utayojitokeza wakati wa kujibu dodoso. Baadhi ya masuali yatawapelekea wazazi kuwa na hofu na pia kutoa taarifa zisizo sahihi. Mfano masuali yatayoulizwa kwa mzazi ikiwa anatumia dawa za miti shamba badala ya kutumia za hospitali. Vile vile ikiwa mtoto atakuwa hali hatarishi ya kuumwa mzazi kutumia dawa bila kuenda kituo cha afya. Masuali haya yanaweza kumpa hofu mzazi na kutotoa taarifa sahihi. Kwa hiyo mtafiti atatoa elimu kuhusu malengo ya utafiti na pia mtafiti atashirikiana na kitengo cha ustawi na saikolojia ili kuwaanda kisaikolojia washiriki na kuwatoa hofu ya taarifa ambazo watakazozitoa na kuwataka wawe na amani ili kutoa taarifa sahihi.

Hata hivyo, wewe uko huru kuacha ushiriki wakati wowote katika mjadala huu katika tukio unalojihisi kuwa na wasiwasi nalo na endapo patatokea tatizo la kisaikolojia kama lugha isioridhisha tutashirikiana na kitengo cha ustawi wa jamii na saikolojia kusawazisha tatizo litalotokea.

Dodoso hili litachukua takribani dakika 10 – 15 kumalizika.

Nani wa kuwasiliana naye:

Kama una maswali kuhusu utafiti huu, unapaswa kuwasiliana na Mtafiti, Saida Habib (255 672 563969)

Je umekubali? ……

Mshiriki anakubali..... Mshiriki hakubaliani.....

Mimi ..... kuwa nimesoma yaliyomo katika fomu hii. Maswali yangu yamejibiwa. Mimi nakubali kushiriki katika utafiti huu.

Sahihi ya Mshiriki.....

Sahihi ya Mtafiti.....

Tarehe ya ridhaa ya saini.....

TAMKO

Hati juu ya kuelezea faida, hatari, na taratibu kwa ajili ya utafiti yenye jina la **"Mazoea ya wazazi ya utumiaji wa dawa tiba pasipo ushauri wa kitaalamu kwa watoto chini ya miaka mitano Zanzibar."** Imesomwa na imeelezwa kwangu na mimi nakubali kushiriki . Nathibitisha kwamba madhumuni, faida na hatari zinazowezahusiana na kushiriki katika utafiti huu zimeelezwa kwangu.

Sahihi au muhuri kwa kidole gumba cha kulia.....TAREHE……

Sahihi ya mtafiti …….. TAREHE……

Appendix II: Structured Questionnaire

Dear respondent,

My name is Saida Habib a student from Kairuki University (KU) at Mikocheni A Dar es Salaam, Tanzania.

The purpose of the study is to analyze factors associated with parental self-medication practice for under-five children in order to protect the children's health from the harms of improper self-medication by their parents. This will be intended for clinical application and public wellbeing.

Instructions: Use a tick to fill in the box on the right corresponding information.

SECTION A: DEMOGRAPHIC INFORMATION

1. Age of parent or guardian in years

(1) 18 -27 ☐

(2) 28 – 37 ☐

(3) 38 – 47 ☐

(4) Other ☐ specify not ≥ 50……

2. Gender of guardian

(1) Male ☐

(2) Female ☐

3. Guardian Marital Status

(1) Single ☐

(2) Married ☐

(3) Divorced ☐

(4) Widow ☐

(5) Other ☐ specify …….

4. Guardian level of Education

(1) Not attended ☐

(2) Primary ☐

(3) Secondary ☐

(4) Tertiary ☐

(5) Other ☐ (Specify)…….

5. Guardian Occupation:

(1) Housewife ☐

(2) Businessman/woman ☐

(3) Farmer ☐

(4) Casual labourer☐

(5) Employed ☐

(6) Unemployed ☐

(7) Other (specify) …….

6. Guardian Relationship to the child

(1) Mother ☐

(2) Father ☐

(3) Sister ☐

(4) Brother ☐

(5) Other ☐ (Specify) …….

7. Age of the child in years

(1) 0 – 1 ☐

(2) 2 – 3 ☐

(3) 4 – 5 ☐

SECTION B: RATES OF SELF-MEDICATION PRACTICE

Use tick to the right answer in the box

Question 8 represents (1) very low, (2) low, (3) moderate, (4) high and (5) Very high

8. Is self-medication safe for under-fives?

1) Strong disagree ☐

2) Somewhat disagree ☐

3) Undecided ☐

4) Somewhat agree ☐

5) Strong agree ☐

9. Is self-medication mostly practised for under-five children?

(1) Very rare ☐

(2) Rare ☐

(3) Sometimes ☐

(4) Moderate ☐

(5) Frequently

10. To what extent does self-medication affect under-five children?

(1) 10 – 29 ☐

(2) 30 – 49 ☐

(3) 50 – 69 ☐

(4) 70 – 89 ☐

(5) Other ☐ (specify) …….

SECTION C: TYPE AND SOURCE OF INFORMATION ON SELF-MEDICATION.

11. Has your child fallen sick for the past 6 months?

(1) Yes ☐

(2) No ☐If yes go to question no 12

12. What was /were the symptoms (s) or signs the child was suffering from? (Can be more than one)

(1) Fever ☐

(2) Diarrhoea ☐

(3) Coughing ☐

(4) Eye infection ☐

(5) Skin infection ☐

(6) Injury/Fracture ☐

(7) Other ☐ (specify)…….

13. What was the source (s) of the medicines which you used or have been using? (You may mention more than one)

(1) Bought them from pharmacy ☐

(2) Bought them from a grocery ☐

(3) Bought from the market ☐

(4) Got them from a friend/relative ☐

(5) Left from previous illnesses ☐

(6) Other ☐ (specify)……

14. Do you keep some medication in your house for use when someone falls sick?

(1) Yes ☐

(2) No ☐

15. If "yes" what medications do you keep in the house?

(1) Paracetamol ☐

(2) Amoxicillin ☐

(3) Cough syrup ☐

(4) Other ☐ Specify…….

16. Why do you keep the medications in the house?

1) Minor illness ☐

2) Mild aches or pains ☐

3) Other ☐ (specify)…….

17. What medication (s) did you use for self-medicating the child? (Can mention more than one)

(1) Panadol (Paracetamol) ☐

(2) Brufen ☐

(3) Bactrim (Cotrimoxazole) ☐

(4) Chloramphenicol ☐

(5) Amoxycillin ☐

(6) ALu ☐

(7) Quinine ☐

(8) Indocid (Indomethacin ☐

(9) Aspirin (ASA) ☐

(10) Magnesium trisilicate ☐

(11) Doxycycline ☐

(12) Metronidazole ☐

(13) ORS ☐

(14) Eye ointment ☐

(15) Cough syrup ☐

(16) Other ☐ (specify)……

18. Who prescribed the medications for you?

(1) Medical personnel from health facility ☐

(2) Worker in the pharmacy shop ☐

(3) Other person ☐ (mention)……...

(4) None ☐

19. Were you told about the instructions on how the child should be given the medications?

(1) Yes ☐

(2) No ☐ (If "Yes" go to question number 20)

20. What was the source of the information if any?

(1) Pharmacy ☐

(2) Friend ☐

(3) Health facility ☐

(4) Leaflet ☐

(5) Newspaper ☐

(6) Books ☐

(7) Radio ☐

(8) Television ☐

(9) Other ☐ (specify)……

SECTION D: FACTORS ASSOCIATED WITH IMPROPER SELF-MEDICATION

21. Have you ever given medication to your child without a prescription?

(1) Yes ☐

(2) No ☐

22. If "yes" how often have you been giving the medication(s) without a prescription?

(1) Frequently ☐

(2) Occasionally ☐

(3) Rarely ☐

23. What was the outcome of the medicines which you used?

(1) Recovered ☐

(2) Improved ☐

(3) Did not improve ☐

(4) Died ☐

24. If it worsened, what else did you do?

(1) Went to hospital ☐

(2) Went to buy more drugs ☐

(3) Went to traditional healer ☐

(4) Just stayed at home ☐

(5) Other ☐(specify)……

25. Why did you use medication(s) without a prescription instead of going to the health facility?

(1) Emergency illness ☐

(2) Proximity of the pharmacy shop ☐

(3) Health facility charges ☐

(4) No medicine in the health facilities ☐

(5) Takes long time of waiting ☐

(7) Other ☐ (specify)…….

26. Did you observe any problems after self-medicating the child?

(1) Yes

(2) No (If 'no', go to question number 28)

27. What problems did you observe in the child after the self-medication?

(1) Body rash ☐

(2) Swollen face ☐

(3) Yellowish eyes ☐

(4) Severe vomiting blood ☐

(5) Severe diarrhoea ☐

(6) Severe vomiting ☐

(7) Condition worsened ☐

(8) Other ☐ (specify)…….

End of interview. Thank you.

Appendix 4: Dodoso la Kiswahili

Mpendwa mshiriki,

Mimi naitwa Saida Habib ni mwanafunzi kutoka chuo cha Kairuki kilichokuwepo Mikocheni A Dar-es- salaam, Tanzania.

Lengo la utafiti huu kutumika katika hospitali na ustawi wa umma kwa kuchambua utumiaji kwa wazazi wa dawa bila ushauri wa kitaalamu na sababu zinazosababisha kwa watoto chini ya miakamitano ili kuzuia na kupunguza madhara ya matumizi mabaya ya dawa bila ya ushauri wa kitaalamu.

Maelekezo: Tumia alama ya vyema na jaza taarifa sahihi kwenye sanduku .

SEHEMU A: TAARIFA ZA ANAEHOJIWA

1. Umri wa mzazi/ mlezi.

(1) 18 -27 ☐

(2) 28 – 37 ☐

(3) 38 – 47 ☐

(4) Nyengine ☐ (ainisha) isiyozidi 50……

2. Jinsia ya mzazi/ mlezi

(1) Mwanaume ☐

(2) Mwanamke ☐

3. Hali ya ndoa ya mzazi/mlezi

(1) Hujaoa/olewa ☐

(2) Ndoa ☐

(3) Talaka ☐

(4) Mwanamke mjane ☐

(5) Nyengine ainisha ☐

4. Kiwango cha elimu ya mzazi /mlezi

(1) Hajawahi kusoma ☐

(2) Elimu ya msingi ☐

(3) Elimu ya Sekondari kidato cha 4 ☐

(4) Elimu ya juu zaidi ya kidato cha nne☐

(5) Nyingine ☐ (ainisha) .....

5. Kazi ya mzazi /mlezi

(1) Mama wa nyumbani ☐

(2) Mfanyabiashara ☐

(3) Mkulima ☐

(4) Mfanyakazi wa kawaida ☐

(5) Umeajiriwa ☐

(6) Hana kazi ☐

(7) Nyingine ☐ (ainisha) .....

6. Uhusiano wa mlezi kwa mtoto

(1) Mama ☐

(2) Baba ☐

(3) Dada ☐

(4) Kaka ☐

(5) Nyengine ☐ (ainisha)……

7. Umri wa mtoto

(1) 0-1 ☐

(2) 2-3 ☐

(3) 4-5 ☐

SEHEMU B: KIWANGO CHA UTUMIAJI WA DAWA BILA YA UTAALAMU

Jibu masuali yafuatayokwa kutumia alama ya vyema katika kisanduku. Suala la 8 nambari 1 inaashiria kuwa ni kiwango kidogo sana, 2 ni kidogo,3 ni wastani, 4 ni kikubwana 5 nikikubwa sana

8. Je utumiaji wa dawa bila ushauri wa daktari ni salama kwa watoto chini ya miaka mitano?

(1) Sikubaliani kabisa ☐

(2) Sikubali ☐

(3) Sikubali wala sikatai ☐

(4) Nakubali ☐

(5) Nakubali kabisa ☐

9. Je kitendo cha utumiaji wa dawa bila ya utaalamu ni mazoea kwa watoto chini ya miaka mitano?

(1) Nadra sana☐

(1) Mara chache ☐

(2) Wastani ☐

(3) Baadhi ya wakati ☐

(4) Mara kwa mara

10. Ni kwa kiwango kipi utumiaji wa dawa bila ya utaalamu unaathiri watoto chini ya miaka mitano?

(1) 10 – 20 ☐

(2) 20 – 40 ☐

(3) 40 – 60 ☐

(4) 60 – 80 ☐

(5) 80 - 100 ☐

SEHEMU C: AINA YA DAWA NA CHANZO CHA TAARIFA ZA UTUMIAJI DAWA BILA USHAURI WA KITAALAMU

11. Je, kwa kapindi cha miezi sita iliopita, mtoto wako alishawahi kuugua?

(1) Ndiyo ☐

(2) Hapana ☐ (Kama ni hapana hapo, nenda swali namba 13)

12. Aliugua kipi kati ya magonjwa yafuatayo? (unaweza kutaja zaidi ya moja)

(1) homa☐

(2) Kuhara ☐

(3) Kukohoa ☐

(4) Ugonjwa wa macho ☐

(5) Ugonjwa wa ngozi ☐

(6) Jeraha/kuvunjika ☐

(7) Nyingine ☐ (ainisha) .....

13. Je umejiandaa kwa namna yoyote kuwa na dawa za akiba ili uzitumie endapo mtoto ataugua?

(1) Ndiyo ☐

(2) Hapana ☐ (Kama ni hapana hapo, nenda swali namba 18)

14. Kama ndiyo ni dawa zipi umeweka kama akiba?

(1) Panadoli ☐

(2) Amoxilin ☐

(3) Dawa ya kikohozi ☐

(4) Nyengine ☐ ainisha…….

15. Ni sababu zipi zinazo kufanya kuhifadhi dawa nyumbani?

(1) Kwa ajili ya kutibu mafua nakifua

(2) Kupunguza maumivu kama kichwa, kuchunika na mengineyo

(3) Nyengine ☐ (ainisha)…….

16. Je ni dawa tiba ipi /zipi ulitumia kwa ajili ya mtoto huyo aliyeugua? (Unaweza kutaja zaidi ya moja)

(1) panadol ☐

(2) Brufen ☐

(3) Bactrim (cotrimoxazole) ☐

(4) Chloramphenicol ☐

(5) Amoxycillin ☐

(6) ALU ☐

(7) Kwinini ☐

(8) Indocid (indomethacin) ☐

(9) Aspirin (ASA) ☐

(10) Magnesium trisilicate ☐

(11) Doxycycline ☐

(12) Metronidazole ☐

(13) ORS ☐

(14) Marashi/dawa ya jicho ☐

(15) Dawa ya Kikohozi ☐

(16) Nyingine ☐ (ainisha) .....

17. Ulipata ushauri wa dawa tiba hiyo kutoka kwa nani?

(1) Mtaalam wa hospitali/zahanati ☐

(2) Mtaalam kutoka maduka ya dawa ☐

(3) Wataalam wengine ☐ (ainisha) …….

(4) Hakuna aliyetushauri ☐

18. Je,umewahi kumpa dawa mtoto nyumbani pasipo ushauri wa kitaalamu kutoka hospitalini au zahanati?

(1) Ndiyo ☐

(2) Hapana ☐ (Kama ni hapana hapo, nenda swali namba 20)

19. Kama ndiyo katika kipindi cha mwaka mmoja uliopita mara ngapi wewe umempa mtoto dawa tiba pasipo ushauri wa kitaalamu kutoka kuhospitalini au zahanati?

(1) Mara nyingi ☐

(2) Mara chache ☐

(3) Kwa nadra sana☐

20. Nini chanzo/vyanzo vya dawa tiba ulizotumia au umewahi kutumia? (Unaweza kutaja zaidi ya moja)

(1) Kununuliwa kutoka maduka ya dawa ☐

(2) Kununuliwa kutoka duka la dawa ☐

(3) Kununuliwa kutoka sokoni ☐

(4) Ulizipata kutoka kwa rafiki/ jamaa ☐

(5) Zilizobakia katika ugonjwa uliopita ☐

(6) Nyingine ☐ (ainisha) .....

21. Je ulielekezwa kuhusu jinsi ya kutumia dawa hizo kwa ajili ya mtoto huyo aliegua?

(1) Ndiyo ☐

(2) Hapana ☐

(Kama ni hapana hapo, nenda swali namba 21)

22. Maelekezo ya kutumia dawa hizo uliyapata wapi?

(1) Duka la dawa ☐

(2) Rafiki ☐

(3) Kituo cha afya ☐

(4) Kipeperushi ☐

(5) Gazeti ☐

(6) Vitabu ☐

(7) Radio ☐

(8) Televisioni ☐

(9) Nyingine ☐ (ainisha) .....

SEHEMU D: SABABU ZINAZOPELEKEA KUTUMIA DAWA KWA WAZAZI BILA YA USHAURI WA DAKTARI KWA WATOTO CHINI YA MIAKA 5

23. Nini matokeo ya dawa tiba ulizotumia au kuwapa wengine pasipo ushauri wa kitaalamu?

(1) Kupona ☐

(2) Kupata nafuu ☐

(3) Kuzidiwa ☐

(4) Kifo ☐

24. Kama alizidiwa ni kitu gani kingine ulifanya?

(1) Kwenda hospitali ☐

(2) Kwenda kununua dawa zaidi ☐

(3) Kwenda kwa mganga wa jadi ☐

(4) Ulibaki nyumbani ☐

(5) Nyingine ☐ (ainisha) .....

25. Nini kilichokufanya kutumia dawa tiba pasipo ushauri wa kitaalamu badala ya kwenda hospitali au kituo cha afya?

(1) Dharura ya ugonjwa ☐

(2) Ukaribu wa maduka ya dawa ☐

(3) Afya kituo mashtaka ☐

(4) Hakuna dawa katika vituo vya afya ☐

(5) Inachukua muda mrefu wa kusubiri ☐

(6) Nyingine ☐ (ainisha) .....

26. Je, pamewahi kutokea matatizo yoyote baada ya kutumia dawa tiba pasipo ushauri wa kitaalamu?

(1) Ndiyo ☐

(2) Hapana ☐

27. Kama ni ndiyo hapo juu 24, palitokea tatizo gani?

(1) Upele mwilini ☐

(2) Kuvimba uso☐

(3) Macho ya manjano ☐

(4) Alitapika damu sana☐

(5) Kuharisha sana☐

(6) Kutapika sana☐

(7) Hali ilikuwa mbaya sana☐

(8) Nyingine ☐ (ainisha) .....

Mwisho wa mahojiano. Asante sana.

Appendix III: Permission Letter

KAIRUKI UNIVERSITY (KU)

70 Chwaku Street,
Mikocheni,
P.O BOX 65300,
Dar es Salaam,
Tanzania.

Tel: +255-22-2700021/4
Fax: +255-22-2775591
Email: irec@ku.ac.tz
Website: www.ku.ac.tz

Ref. No. KU/IREC/27.10/457 **1st July 2024**

Dr. Saida Habib,
Kairuki University,
Box 65300,
Dar es Salaam, Tanzania.

RE: ETHICAL CLEARANCE CERTIFICATE FOR CONDUCTING HEALTH RESEARCH.

I am pleased to inform you that the research titled: **Parental Self-Medication Practice and Associated Factors for Under-Five Children in Zanzibar. (Habib S., 2024)** has been granted ethical approval.

This approval is in effect for one year from the above date. Any changes in the procedures should be reported to the Institutional Research Ethics Committee. Significant changes will require the submission of a revised request for ethical approval. You will be required to submit **study a progress report** every six months.

Permission to publish your findings should be sought from the National Institute for Medical Research (NIMR) before submission to a publisher and not concurrently.

CHAIR PERSON

Name: Prof. Fredrick Kaijage

Signature:

DIRECTOR POSTGRADUATE STUDIES AND RESEARCH INSTITUTE
HUBERT KAIRUKI MEMORIAL UNIVERSITY
P. O. Box 65300, DSM

SECRETARY

Name: Prof. Columba Mbekenga

Signature:

SERIKALI YA MAPINDUZI YA ZANZIBAR
AFISI YA MAKAMU WA PILI WA RAIS,

22279 Barabara ya Vuga,
Vuga, S.L.P. 239,
70460 Mjini Magharibi, Zanzibar

Tovuti : www.orapr.go.tz
Barua pepe : Info@ompr,go,tz
Faksi : 0242231826

CA.33/411/01-0/4 29/07/2024.

DAKTARI DHAMANA WILAYA,
WILAYA YA MAGHARIBI "B",
UNGUJA.

KUH: RUHUSA YA KUFANYA UTAFITI

Kwa heshima, naomba uhusike na mada ya hapo juu.

Serikali ya Mapinduzi ya Zanzibar imemruhusu **Ndg. Saida Moh'd Habib** mwanafunzi kutoka **Chuo Kikuu cha Kairuki** anaesomea **Shahada ya Uzamili** katika fani ya **Afya ya Jamii** kufanya utafiti katika mada inayohusiana na **"Parental Self Medication Practice And Associated Factors For Under Five Children in Zanzibar".** Utafiti huo utafanyika kwenye vituo vya afya vya Funi, Chukwani, Magogoni pamoja na Kombeni - Zanzibar kuanzia tarehe **26/07/2024** mpaka **26/10/2024** Tunaomba asaidiwe ili aweze kukamilisha utafiti huo.

Kwa nakala ya barua hii mara baada ya kumaliza utafiti, mtafiti anatakiwa kuwasilisha nakala (copy) 3 za ripoti ya utafiti huo, Afisi ya Makamu wa Pili wa Rais - Zanzibar.

Naambatanisha na kivuli cha kibali cha kufanyia utafiti.

Wako mtiifu,
Gharib H. Kombo
GHARIB H. KOMBO,
/KATIBU MKUU,
AFISI YA MAKAMU WA PILI WA RAIS,
ZANZIBAR.

NAKALA: Ndg. Saida Moh'd Habib.

REVOLUTIONARY GOVERNMENT OF ZANZIBAR

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ZANZIBAR RESEARCH COMMITEE
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Fax: 024 2231742

RESEARCH/FILMING PERMIT

(This Permit is only Applicable in Zanzibar for duration specified)

SECTION

Ref: 200170920824314927952 7

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Gender	F
Date and Place of Birth	20-12-1989 - MPENDAE - ZANZIBAR
Nationality	TANZANIAN
Data Collection Duration	03 Month(s)
Research Tittle	PARENTAL SELF-MEDICATION PRACTICE AND ASSOCIATED FACTORS FOR UNDER – FIVE CHILDREN IN ZANZIBAR.
Date of Issue	26-07-2024
Valid until	26-10-2024

FULL ADDRESS OF SPONSOR

Name of the Authorizing Officer ..... Asha Hija Khamis

Signature and Seal .....

Institution Office of the Chief Government Statistician

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Printed Date 26-10-2024

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Ref: NO. ZAHREC/02/ST/AUG/2024/170 01st Aug, 2024

Saida Moh'd Habib,
Student Researcher,
Kairuki University (KU).

RE: ETHICAL CLEARANCE FOR CONDUCTING HEALTH RESEARCH IN ZANZIBAR

This is to certify that the research protocol titled **"Parental self-medication practice and associated factors for under-five children in Zanzibar"** Was received and reviewed on the 1st of August, 2024.

We would like to inform you that your proposal has been **"Approved"** for implementation.

Sites of Research: Magharibi B public health centres; Fuoni, Magogoni, Kombeni and Chukwani.
The Principal Investigator has to:

i. Submit your progress report and a final report upon completion of Research.
ii. Seek permission for Publication of results from ZAHREC.
iii. Submit Copies of the final Publications to ZAHREC.
iv. Seek approval for any changes made to the approved protocol prior to their implementation

Any researcher who deviates or fails to comply with these conditions shall be guilty of an offense and shall be liable on conviction to a fine as per ZAHRI Act No.05 of 2020.

This Approval shall be valid for **Six months: 01/08/2024 - 31/01/2024**

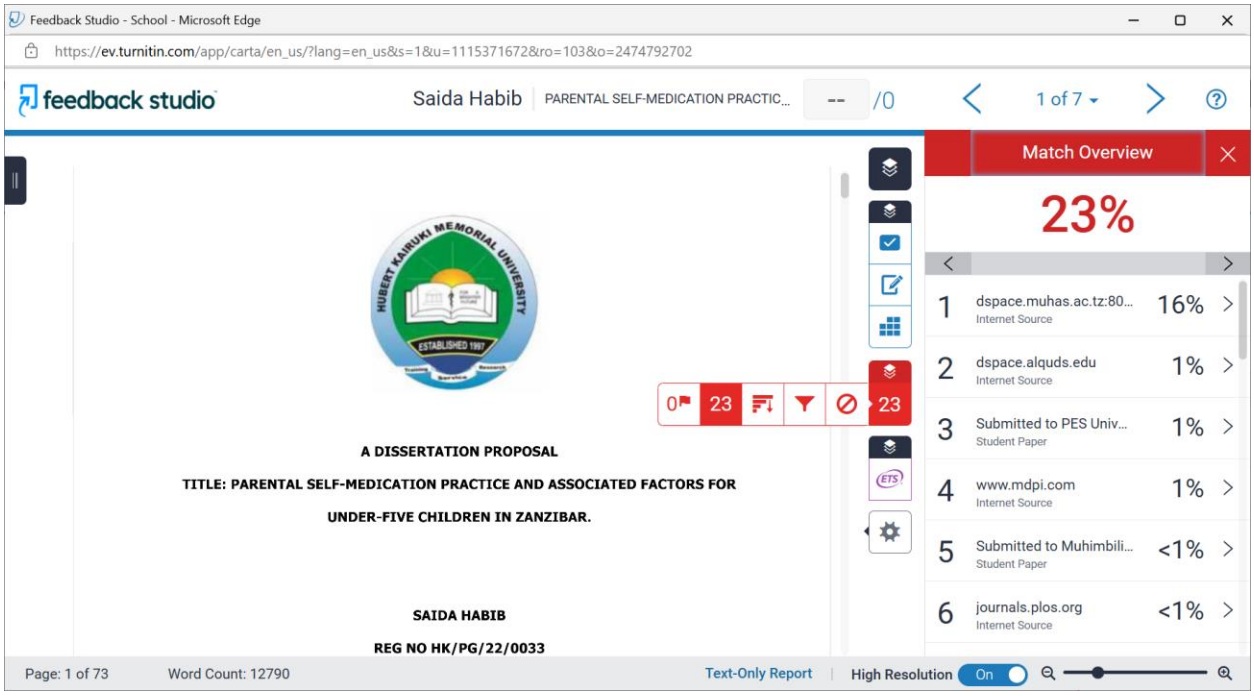
Thanks in advance,

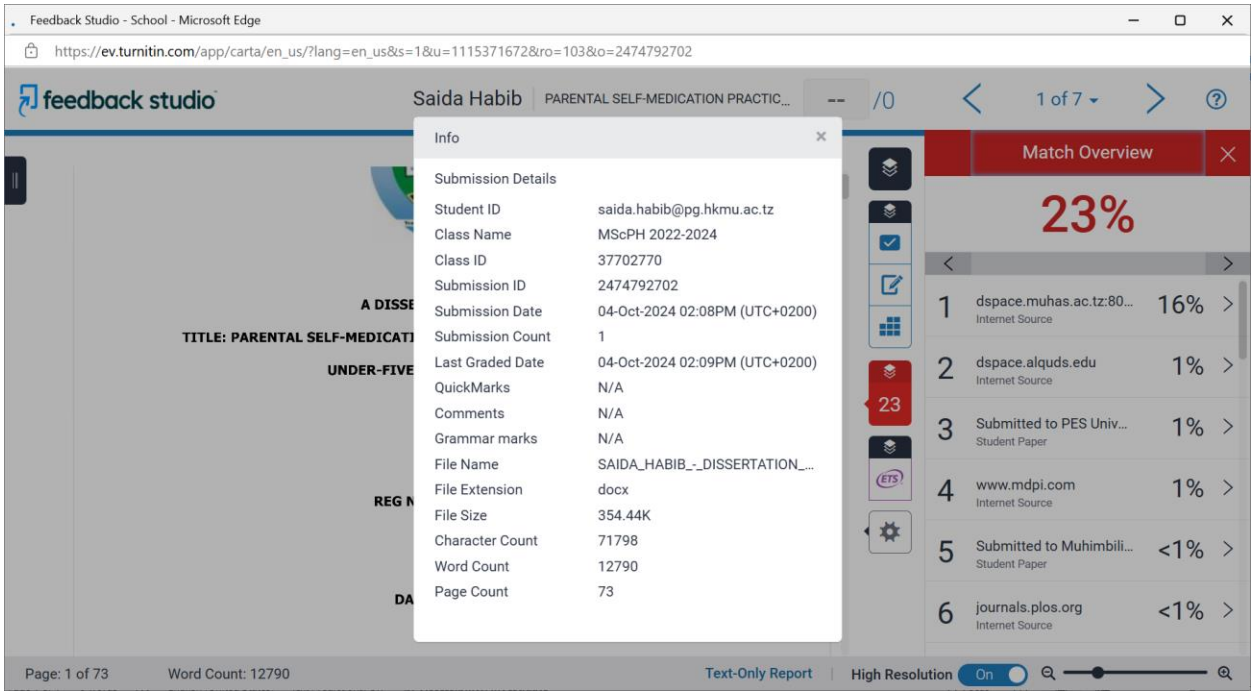
07 AUG 2024

Dr. Mayassa S. Ally,
CHAIR- HEALTH RESEARCH COORDINATING COMMITTEE,
ZANZIBAR HEALTH RESEARCH INSTITUTE,
BINGUNI,
ZANZIBAR.

Amour S. Mohamed,
DIRECTOR GENERAL,
MINISTRY OF HEALTH,
ZANZIBAR.

Appendix IV: Plagiarism





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File name:	SAIDA_HABIB_-_DISSERTATION_PROPOSAL.docx
File size:	354.44K
Page count:	73
Word count:	12,790
Character count:	71,798
Submission date:	04-Oct-2024 02:08PM (UTC+0200)
Submission ID:	2474792702