

**DETERMINANTS OF INTENTION TO UTILIZE
PRECONCEPTION CARE AMONG PREGNANT
WOMEN ATTENDING ANTENATAL CARE CLINICS IN
DODOMA: A HOSPITAL-BASED ANALYTICAL CROSS-
SECTIONAL STUDY**

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MASTER OF SCIENCE IN MIDWIFERY

THE UNIVERSITY OF DODOMA

NOVEMBER, 2024

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BY

JOTHAM EZEKIEL JOTHAM

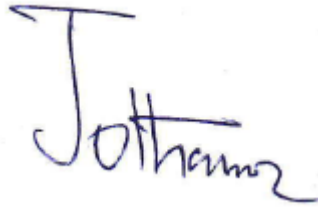
A DISSERTATION SUBMITTED IN PARTIAL FULFILLMENT OF
THE REQUIREMENT, THE DEGREE OF MASTERS OF SCIENCE
IN MIDWIFERY

THE UNIVERSITY OF DODOMA

NOVEMBER, 2024

DECLARATION AND COPYRIGHT

I, **Jotham Ezekiel Jotham**, declare that this dissertation is my original work and that has not been presented or conducted elsewhere similarly for either award or as a research project.

A handwritten signature in blue ink, appearing to read 'Jotham', written over a horizontal line.

Signature _____

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CERTIFICATION

The undersigned certify that they have read and hereby recommend for acceptance by the University of Dodoma, a dissertation entitled “*Determinants of intention to utilize preconception care among pregnant women attending antenatal care clinics in Dodoma, Tanzania*” in partial fulfilment of the requirements for the degree of Master of Science of Midwifery at the University of Dodoma.

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(Supervisors)

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DEDICATION

I would like to dedicate this work to my lovely family: my lovely wife Victoria Jotham and daughters Dorren Jotham, Diana Jotham, and Deborah Jotham, for their tolerance of my absence at home during the study period. To my dearest mother, your love, patience, and unwavering support have shaped me into the person I am today. In every moment of joy, struggle, or triumph, you have been there, offering wisdom, kindness, and strength. This dedication is but a small token of the immense gratitude and love I hold for you.

ABSTRACT

Background: The WHO manifesto calls for universal preconception care worldwide. The Tanzanian government emphasizes maternal and child health, but the progress of its improvement is slow. Tanzania has yet to address the issue of maternal health services, particularly those provided before pregnancy. Adequate knowledge and utilization of preconception care will help to reduce pregnant related complication and later adverse birth outcomes for mothers and their newborn babies.

Objective: The purpose of this study was to assess determinants of intention to utilize preconception care among pregnant women attending antenatal care clinics in Dodoma.

Methods: A hospital-based analytical cross-sectional study design with a quantitative approach was conducted in the Dodoma region. In this study, 392 pregnant women were systematically selected. A paper-based structured questionnaire adapted from a previous study conducted in Ethiopia was used to collect data from the respondents. Collected data was entered into IBM SPSS version 25 for further analysis, bivariate and multivariate logistic regression analysis was done to identify the association between the variables and the intention to use preconception care. A p-value less than 5% was considered to indicate a significant association.

Results: The response rate of the study participants was 100%. The mean age of the respondents in the study was 29 (SD 6.574). Among 392 respondents, 55.6% were aged 18-28 years, 79.8% were married, 49.5% were self-employed, 36.5% had primary education, and 45.2% were multiparous women. Predictors which were associated with intention to utilize PCC were high education level (AOR: 4.842, 95%CI: 1.157, 20.268), positive attitude towards preconception care (AOR: 5.756, 95%CI: 2.414, 13.726), and perceived facilitators (AOR: 5.258, 95% CI: 1.448, 19.093). Knowledge of preconception care and subjective norms had no association with intention to utilize preconception care.

Conclusion: Intention to utilize preconception care was significantly correlated with a number of important criteria, including having a secondary education level, having a positive attitude, and perceiving more facilitators than barriers. These realizations emphasize how critical it is to lower obstacles and promote positive attitudes through focused education and awareness campaigns.

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LIST OF ABBREVIATION

AH	Alternative hypothesis
ANC	Antenatal care clinic
COSTECH	Tanzania Commission for Science and Technology
HBM	Health belief model
HCPs	Healthcare professionals
HCWs	Health care workers
HIV	Human Immunodeficiency virus
NO	Null hypothesis
PCC	Preconception care
PHC	Public Health care
PHI	Public health institution
RH	Reproductive health
RLP	Reproductive health plan
SDG	Sustainable development goals
TDHS	Tanzania Demographic Health Survey
TPB	Theory of planned behavior
TRA	Theory of reasoned action
UK	United Kingdom
US	United State
WHO	World Health Organization

DEFINITION OF TERMS

Attitudes towards preconception care are the individual's feelings, beliefs, and predispositions towards the importance, relevance, and practice of healthcare measures taken before conception.

Intentional use of preconception care refers to an individual's deliberate decision to engage in healthcare practices, lifestyle modifications, and consultations before attempting to conceive.

Knowledge of preconception care refers to an understanding and awareness of the factors that influence a person's and future pregnancy health.

Perceived behavioral control refers to the experienced ease or difficulties in the accessibility of preconception care services.

Preconception care refers to the healthcare interventions such as screening and treatment of existing health conditions, vaccinations, supplementation of vitamins and lifestyle modifications provided to women aims to improve their health before conception.

Subjective norms about preconception care refer to perceived social pressure individuals feel to engage or not engage in preconception care based on the beliefs and expectations of important people in their lives.

CHAPTER ONE

INTRODUCTION

1.1 Background Information

The pregnancy and delivery process are joyful journey for most women but some women face a lot of challenges and difficulties in conceiving pregnancy, delivery and sometimes even in the postpartum period. Some women in their reproductive age encounter trouble in getting pregnant, and those who become pregnant experience difficulties and complications during the pregnancy and delivery process, which can lead to unfavorable outcomes of the pregnancy these challenges could be addressed by preconception care (Chivers et al., 2020)

The World Health Organization defines preconception care as the provision of biomedical, behavioral, and social health interventions for women, or couples of reproductive ages before conception to improve individual health before conception occurs (Woldeyohannes et al., 2023).

PCC comprises fourteen components through which individuals or couples of reproductive ages need better pregnancy and birth outcomes. These components are health assessments, lifestyle, behavior counselling, and modifications, nutrition, weight management, management of chronic conditions, immunization, medication review, genetic counselling, family planning services, mental health support, screening and treatment of sexually transmitted infections, and folic acid supplementation (WHO, 2013).

Different scholars worldwide reported these challenges and complications: Globally, anemia in pregnancy is 40.05%, 48.3%, and 12.8% (Doke et al., 2021; Shi et al., 2022; Smith et al., 2019) respectively. In sub-Saharan Africa, abortion is 6.11%, low birth weight is 9.63%, macrosomia is 9.04%, stillbirth is 0.845%, preterm birth is 4.87-5.33% (Alamneh et al., 2021), and hypertensive disorders during pregnancy are 8% (Gemechu et al., 2020).

In Tanzania, some of these challenges are: anemia is 18.0% (Stephen et al., 2018), low birth weight is 11.5% (Mwalukasa et al., 2019), premature birth is 32.1% (Msanga et al., 2021) and maternal death is 35 per 100,000 live births (Nassoro et al., 2020). Even

though preconception care can address these health problems, the majority of women are not utilizing PCC services (Woldeyohannes et al., 2023).

Studies in Ethiopia reported 40% of respondents had utilized preconception care services (Girma et al., 2023), other studies in Ethiopia reported 28%, 22.3%, 19%, 14.5%, 1.5%, and 18.72% of the respondents utilized preconception care services (Admasu et al., 2022; Alie et al., 2022; Amaje & Fikrie, 2022; Degu Ayele et al., 2022; Fekene et al., 2020; Tekalign et al., 2021) respectively. Additionally, Kenya reported 16.5%, and 35.1% for rural and urban participants (J. K. Okemo et al., 2021).

The physiology of preconception care is based on maximizing a person's health before conception to establish the best conditions for a safe pregnancy, minimal problems during labor and delivery, and a smooth postpartum period for both the mother and the baby. PCC is not widely known or understood by people of reproductive age in many parts of the world. As a result, they may not fully appreciate how critical it is to prepare for and get a healthy pregnancy (Munthali-nkhoma & Kazanga-chiumia, 2021).

Researchers have reported that several factors, including intended pregnancy, adverse pregnancy outcomes in the past, age at first pregnancy, prior preconception care, and the healthcare system, influence the utilization of PCC (Alie et al., 2022; Girma et al., 2023). However, the documentation of the Theory of Planned Behavior's impact on the intention to use preconception care is lacking. As a result, this study aims to investigate how TPB application predicts the intention to use preconception care.

1.2 Statement of the problem

Even though antenatal care services can reduce pregnancy-related complications, anemia in pregnancy, premature deliveries, low birth weight, and maternal and neonatal deaths remain health concerns in the Dodoma region (Nassoro et al., 2020).

The Ministry of Health Tanzania recommends women to attend ANC clinics when they are less than twelve weeks gestation age, receive care from trained healthcare professionals, and attend ANC clinics for no less than eight visits, but these recommended ANC services are provided late, when embryonic development, organogenesis, and placentation are far advanced. As a result, preconception care remains a preparatory phase for pregnancy to prevent adverse birth outcomes. Despite the recognized benefits of preconception care in improving maternal and child health

outcomes, many pregnant women do not seek out preconception care services. Therefore, the study aims to fill the gap in understanding how knowledge and constructs of Theory of Planned Behavior influence women's intention to utilize PCC services.

1.3 Research objectives

1.3.1 General objective

To assess determinants of intention to utilize preconception care among pregnant women attending antenatal clinics in Dodoma, Tanzania.

1.3.2 Specific objectives

- i. To assess knowledge regarding preconception care among pregnant women attending ANC clinics in Dodoma, Tanzania.
- ii. To assess attitudes towards PCC among pregnant women attending the antenatal care clinic in Dodoma, Tanzania
- iii. To assess subjective norms among pregnant women attending ANC clinics in Dodoma, Tanzania.
- iv. To assess perceived behavioral control among pregnant women attending ANC clinics in Dodoma, Tanzania
- v. To investigate the intention to utilize PCC among pregnant women attending the antenatal care clinic in Dodoma, Tanzania
- vi. To determine the relationship between knowledge, and constructs of planned behavior theory towards intentional utilization of PCC among pregnant women attending ANC clinics in Dodoma, Tanzania.

1.4 Significance of the study

The study focused on SDG numbers 3.1 and 3.2 (UN, 2020) and Tanzania Nation Research Priorities (COSTECH, 2021) on reducing maternal and newborn deaths and complications. Also, PCC lies in its potential to address a critical public health issue, also it will provide light to policymakers, health authorities, and healthcare professionals at all levels on the importance of adopting the PCC package into reproductive health (RH) and ANC services so initiatives can be formulated to address the needs. Thirdly, findings from this study can serve as a valuable resource for future research in reproductive health and preconception care.

CHAPTER TWO

LITERATURE REVIEW

2.1 Chapter Overview

The chapter is divided into three main parts: the first part is a theoretical literature review that guided the study; the second part is an empirical review that explains other facts related to the study; and the third part is about the conceptual framework.

2.2 Theoretical review

A theoretical review is a type of literature review that focuses on summarizing, analyzing, and synthesizing theoretical framework concepts and models relevant to particular research topics. It aims to provide a comprehensive understanding of existing theories and how they have evolved, as well as implications for current research and practice. As a result, the current study used the theory of planned behavior to assess preconception care knowledge and intentional utilization among pregnant women attending antenatal care clinics.

The theory of planned behavior was developed by a social psychologist, Icek Ajzen, in collaboration with Martin Fishbein in 1985. TPB comprises three constructs: attitude, subjective norms, and perceived behavioral control. Researchers have conducted numerous studies to explore how the theory of planned behavior forecasts individual behavioral changes. The Theory of Planned behavioral is the most light-hearted theory in predicting intention and various behavioral outcomes (Endayehu et al., 2020). According to a meta-analysis study, TPB accounted for 39% of the variance in intentions and 27% of the variance across broad-spectrum behavior (Armitage & Conner, 2010).

Tanzania didn't host the above-mentioned studies on women's intentions to utilize PCC services. As a result, the study applied the Theory of Planned Behavior for the following reasons: First, women's decision-making is the result of the decision-making process, which reflects people's values and attitudes. The second reason is that acting in a specific direction necessitates that people behave according to their motivation and attitude. External factors, such as one's confidence to cope or overcome barriers related to the availability, affordability, and accessibility of preconception care services

and social support, all play a role in determining the extent to which women decide to use these services (Siqueira et al., 2022).

Diagram of the Model

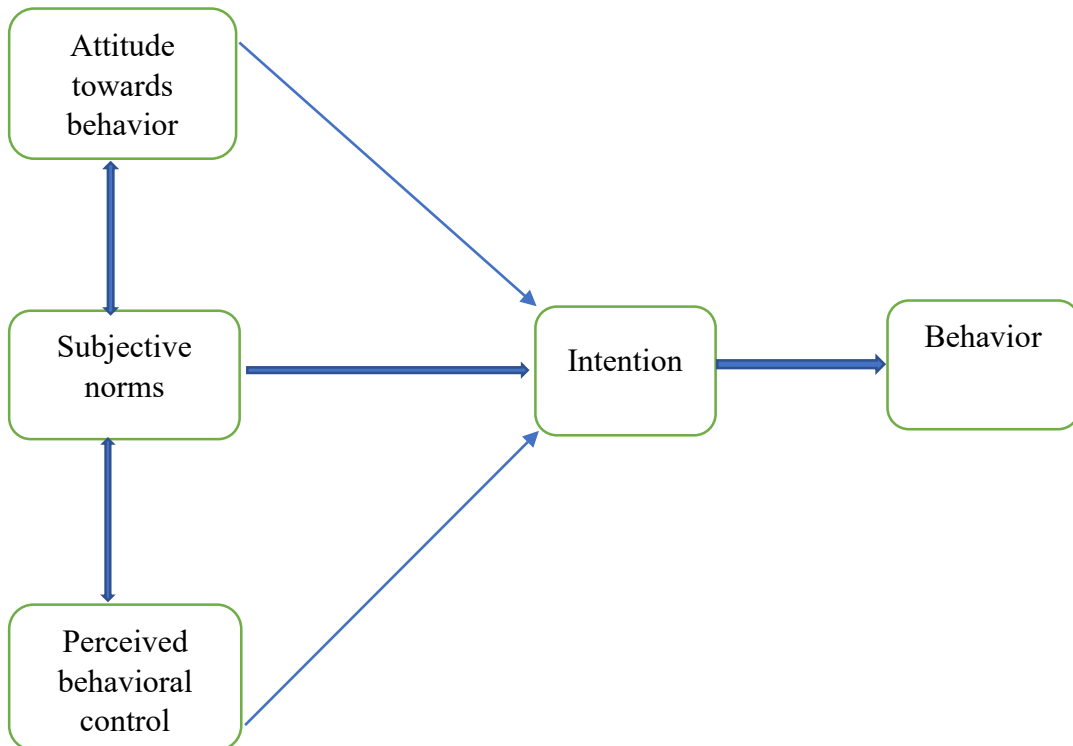


Figure 1: Theory of planned behavior by Martin 1985

2.3 The Empirical Review

The empirical review is critical as it provides a comprehensive and systematic summary of the existing research, which is interrelated to the research questions. The main purpose of a literature review is to identify the key subjects, patterns, and gaps in the literature related to preconception care among pregnant women in relation to adverse pregnancy outcomes for both mothers and newborns.

2.3.1 Knowledge of preconception care

Globally, researchers conducted a study in the UK to investigate preconception care knowledge in adult women aged 18-49 years. The study's participant discussions revealed a deficiency in a comprehensive understanding of preconception care and a reluctance to consult a healthcare professional about PCC unless they were experiencing difficulties conceiving. Findings from this study necessitate the need for

PCC knowledge provision (McGowan et al., 2020; Public Health England, 2018; Steel et al., 2016). A national survey in Germany, Toronto, and Canada to assess knowledge of PCC among men and women who are planning for pregnancies reported that the majority of respondents had inadequate knowledge of PCC (Dennis et al., 2022).

In sub-Saharan countries, different scholars reported inadequate knowledge of PCC (Akinajo et al., 2019; Ayele et al., 2021; Elizabeth et al., 2020; Woldeyohannes et al., 2023), scholars concluded that preconception care is not fully understood by pregnant women in most sub-Saharan African nations. Another study conducted in Tamale, Ghana, among pregnant women who visit Tamale West Hospital's Antenatal Clinic (ANC) reported inadequate levels of knowledge on PCC, with statistical evidence that only 34.5% knew preconception care (BOAKYE-YIADOM et al., 2020).

A study in Malawi reported 146 (57.7%) among 253 pregnant women who participated in the study had a moderate level of knowledge of PCC (Gyamtsho et al., 2022). Another study in Zimbabwe reported inadequate knowledge of preconception care among women who participated in the study (Elizabeth et al., 2020). Another study conducted in Sudan on assessing knowledge of good glycemic control before conception, during pregnancy, and maternal and fetal adverse events found that 95 (79.8%) participants received no ocular examination and 60 (50.4%) received no renal assessment, whereas 77 (64.7%) participants did not check their blood glucose levels (Dafa Elseed & Khougali, 2019).

A study in Mana district, Ethiopia, reported only 133 (21.3%) of the 623 pregnant women had good PCC knowledge. The findings from this study imply that the majority of the respondents have inadequate PCC knowledge (Teshome et al., 2020).

Findings of a study conducted in Jinka Town, Ethiopia revealed that awareness of preconception care among pregnant women was moderate (55.2%), meanwhile, 87 (73.1%) participants did not have regular medical follow-ups with an endocrinologist, and 82 (68.9%) reported that they did not have a plan to change their lifestyle and lose some weight (Ayele et al., 2021). Another study in Ruiru and Kiambu Counties in Kenya and Hawassa, Ethiopia, on preconception care knowledge among women of reproductive age found a low level of knowledge of PCC services, with a greater proportion having never heard of the services and being unable to name the

components of preconception care (Admasu et al., 2022; Fekene et al., 2020; Joyce, 2018) respectively.

2.3.2 Attitude towards Preconception care

A study in the UK and Ireland among 386 women and men reported a negative and positive attitude towards PCC respectively, and most of the respondents had no history or intention to visit HCWs regarding PCC advice or counselling unless they had fertility problems or bad obstetric history (Cassinelli et al., 2023).

A study in South Africa reported that the majority of respondents had a positive attitude towards PCC (Ukoha & Mtshali, 2022). According to Addisu Girma, who conducted a study in Ethiopia, more than half of the respondents had negative attitudes towards PCC (Ayele et al., 2021). A study in Eldoret health facilities in Kenya reported that 83% of women who participated in the study had negative attitudes towards preconception care services (Wanyonyi, 2019). Another study in Kenya, among pregnant women revealed a positive attitude towards preconception care (J. Okemo et al., 2020).

2.3.3 Subjective norms on preconception care

The findings of the study conducted in Singapore reported that subjective norms were significantly associated with utilizing preconception care with a p-value <0.001 (Bayrami et al., 2021). Another study in Iran reported that subjective norms were associated with an individual's intention to utilize preconception care, $p = 0.002$ (Khayeri et al., 2019). In sub-Saharan Africa, a study conducted in Ethiopia among reproductive-age women reported that intention to utilize preconception care was associated with subjective norms with $p < 0.001$ (Setegn, 2021).

2.3.4 Perceived behavioral control on preconception care

A study in China found that perceived behavioral control ($p < 0.001$) was a strong predictor of behavioral intention (Lin et al., 2022). Another study in Indonesia found that women who experienced more barriers were less likely to use preconception care services while women who perceived fewer barriers were more likely to use preconception care with $p < 0.001$ (Adie et al., 2019). Another study in Mizan town in the southwest of Ethiopia revealed that those women who perceived more barriers had

a lower intention to utilize preconception care, with a p-value of less than 0.001 (Behavior et al., 2021).

2.3.5 Intention to utilize preconception care services

A study conducted in China reported that less than half (42.2%) of the 948 pregnant women who participated in the study had no intention to utilize preconception care services (Du et al., 2021). Another study in Indonesia found that 72.1% of the respondents intentionally utilized PCC (Tarsikah et al., 2022). Less than 20% of study participants in Korea, Atlanta, and Pittsburgh agreed to receive healthcare advice before they are planning for pregnancy (Cha et al., 2021; Kim et al., 2022).

In sub-Saharan Africa, studies from a middle African regions involving 13067 women reported significantly low intention to utilize PCC among pregnant women (Tekalign et al., 2021). Another study to assess intention to utilize PCC in South Africa reported insufficient intention (Habte et al., 2021; Odira et al., 2021; Ukoha & Mtshali, 2022). A cross-sectional study in Southern Shewa, Ethiopia, and Bungoma, Kenya reported that less than a quarter of women who participated in the study had very low intention to utilize PCC (Abayneh et al., 2022; Admasu et al., 2022; Fekene et al., 2020). A study in Bungoma and Kanduyi counts in Kenya, reported 61% of the respondents had no intention to utilize PCC services (J. K. Okemo et al., 2021).

Based on the existing body of knowledge, in Tanzania there are limited published studies on assessing determinants of intention to utilize preconception care among pregnant women.

2.4 Conceptual framework

The conceptual framework consists of independent, intermediate, and dependent variables which contain social demographic characteristics, knowledge, constructs of the Theory of Planned Behavior and intention to utilize preconception care respectively. Social demographic characteristics and knowledge of preconception care can have a direct effect on the intention of utilizing preconception care, and constructs of the Theory of Planned Behavior (Subjective norms, perceived behavioral control, and attitude) can also have effects on individuals' intention of utilizing PCC.

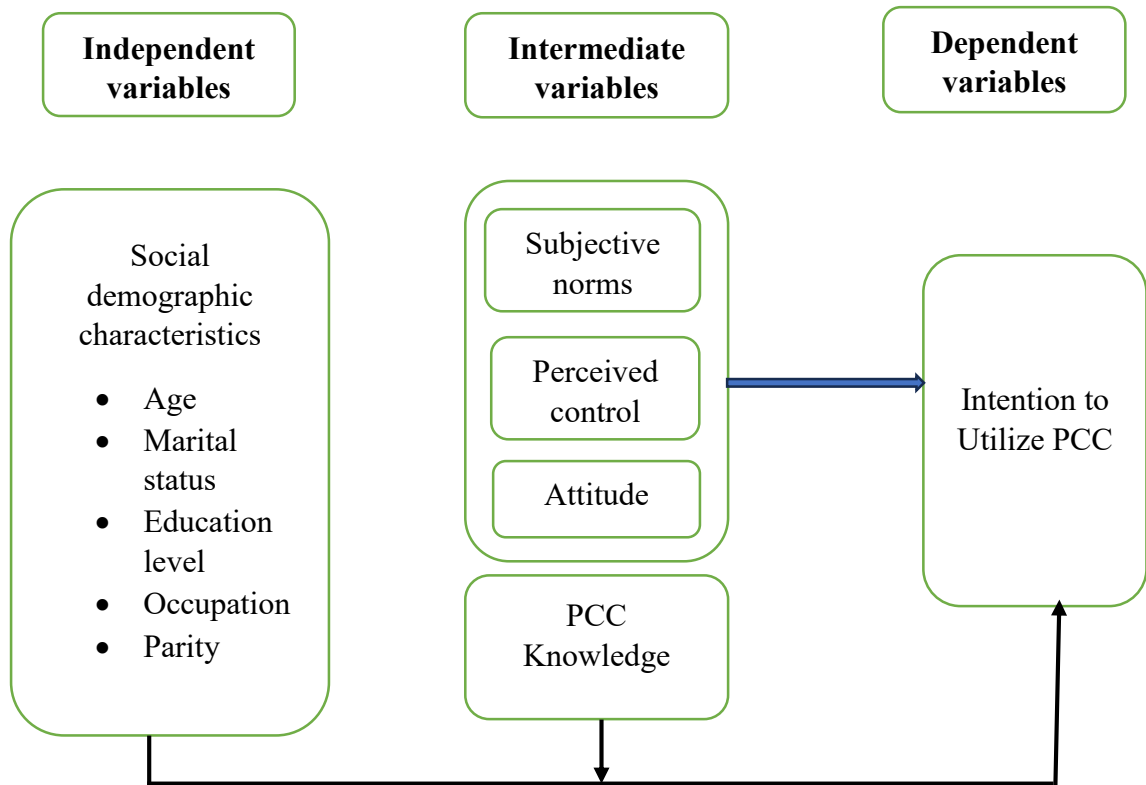


Figure 2: Conceptual framework

CHAPTER THREE

METHODOLOGY

The study purpose, methodology, population, sample size, sampling techniques, methods, and instruments for acquiring data are all covered in this chapter. Inclusion, exclusion criteria, validity, reliability, data analysis plan, study design and approach, and ethical issues were included in this chapter.

3.1 Study area

The study was conducted in the Dodoma region, the region's population is estimated to be 3,085,625, which accounts for 4.8% of Tanzania's mainland population, the NBS's population forecasts indicate that the Dodoma region has 1,126,309 men and 1,959,316 women, with a fertility rate of 2.7, and an average annual population growth of 2.1% (Statistics, 2016).

Additionally, the 2022 Tanzania Demographic and Health Survey reports that the Dodoma region is home to 26 hospitals, 69 health centers, and 402 dispensaries. The Dodoma region is among the top ten regions in the country with higher maternal and neonatal mortality and morbidity rates, with statistical evidence of 35/100,000 and 40/1000, respectively, that contribute to long- and short-term complications for both mothers and their newborns (TDHS, 2022). Dodoma is one of the region with relative low utilization of contraceptives (Munuo & Moshi, 2023).

3.2 Study Approach and Design

This study used a quantitative approach with analytical cross-sectional study design.

3.3 Study population

All pregnant women attending antenatal care clinics within study period.

Inclusion criteria

- All pregnant women aged 18-49 years attending ANC clinics in Dodoma.

Exclusion criteria

- All pregnant women attending ANC clinics aged 18-49yrs who reported to be sick.

3.4 Sample size estimation

G*Power version 3.1.9.4 computed the sample size using the Test Family (Z test) and the statistical test of logistic regression (Kang, 2021). The parameters for sample size determination were: power $1-\beta$ err prob (0.9), margin error α err prob (0.05), and odds ratio (1.513). The sample size of participants included in the study was 392 pregnant women.

3.5 Sampling procedure

A multiple-sampling procedure was used. First, simple random sampling with a lottery replacement method was used to select one region among ten regions with high maternal and neonatal adverse outcomes. The second method involved using simple random sampling to choose two districts within the region. The third method involved purposive sampling, which involved selecting two health facilities in each district based on the monthly attendance rate of pregnant women at antenatal care clinics. The fourth method was proportionate stratified sampling to allocate the required number of respondents from each health center as indicated in the table above. Firth method was systematic sampling to select several pregnant women per day until the required sample was obtained. The k th interval was calculated using the formula $K = N/n$ and it was 7. Where the first participant was selected by simple random sampling. A total number of pregnant women attending antenatal care clinics was obtained using the proportionate sampling formula (Verma et al., 2014).

$$n_i = N_i / N_t \times n$$

Where:

n_i = Required number of pregnant women in selected health facility

N_i = Total number of pregnant women in selected health facility

N_t = Total number of pregnant women in all selected health facility

n = Estimated sample size.

Table 1: Shows proportionate sampling

Name of health center	Estimated number of attendances per month	Sample size in each HC using proportionate sampling formula $n_i = N_i / N_t \times n$	Systematic sampling $K = N_i / n$
Makole	2082	304	7
Chang'ombe	200	29	7
Chamwino	207	30	7
Handali	200	29	7
Total	2689	392	

3.6 Data collection methods

Data was collected using a structured interviewer-administered questionnaire adapted from a study conducted in Ethiopia (Setegn, 2021).

3.7 Data collection procedure

Data were collected by two registered nurses as research assistants after two (2) days of exposure to the tool contents and data collection procedure. The principal investigator also collected the data and closely monitored the data collection process.

3.8 Data collection tool

A paper-based structured questionnaire adapted from a previous study conducted in Ethiopia (Setegn, 2021). The tool consisted of six sections: SECT 1 (socio-demographics), SECT 2 (knowledge), SECT 3 (attitude), SECT 4 (subjective norms), SECT 5 (perceived behavioral control), and SECT 6 (intentional utilization). Social-demographic characteristics section was modified by removing questions related to tribes and the respondents' local language, and clarification of some preconception care knowledge questions. The Swahili language was used to collect the data from participants.

3.9 Validity and Reliability

3.9.1 Validity

Face and content validity of the tool was ensured by sharing the tools with supervisors and experts in a particular field in which the tool was verified to fit the current population by omitting questions relating to the tribe and local language used by respondents.

3.9.2 Reliability

Internal consistency reliability of the tool was ascertained by pretesting the tool to 10% (39 participants) of non-actual sample size. The Cronbach alpha was knowledge (0.71), attitude (0.75), subjective norms (0.72), perceived behavioral control (0.74), and intentional utilization (0.81).

3.10 Variable definition

3.10.1 Independent variables

Knowledge in preconception care: This pertains to the situation where individuals possess accurate and relevant knowledge about the elements of preconception care, their significance, and recommended health practices before embarking on pregnancy plans.

Attitude: An individual's attitude towards preconception care is determined by their beliefs and feelings about the importance, benefits, and benefits of engaging in behaviors that contribute to their health before conception.

Subjective norms in preconception care: Refer to others' expectations and opinions about engaging in behaviors that promote a healthy conception.

Perceived behavioral control refers to barriers or facilitators experienced by an individual in seeking PCC knowledge and/or its utilization.

3.10.2 Dependent variables

Intentional utilization of preconception care: Describes how often a person or couple actively seeks out and/or receives recommended preconception interventions such as medical screening and treatment, counselling, taking required supplements, managing chronic diseases, and adopting a healthy lifestyle to improve their health before conception.

3.11 Variable measurements

3.11.1 Independent variables

Knowledge of preconception care: Eight (8) multiple-response questions measure preconception care knowledge, assigning 1 and 0 points for correct and incorrect responses, respectively. The total score was eight points. The obtained score was

converted to a percentage and a cutoff point of 50% was used to classify the respondent as having either inadequate or adequate knowledge of PCC (Setegn, 2021).

Attitude towards PCC: Pregnant women's attitude towards preconception care was assessed using a three-point Likert scale, with 1, 2, and 3 points representing disagree, neutral, and agree, respectively. The score ranged from 5-15. Scores of ≤ 7 and ≥ 8 were indicative of negative and positive attitudes towards PCC, respectively (Setegn, 2021).

Subjective norms: The assessment of subjective norms towards PCC was done using five dichotomous questions, and a score of 0-2 and 3-5 points for correct responses classified an individual as having no support and having support from close relatives towards PCC (Setegn, 2021).

Perceived behavioral control: The assessment involved four dichotomous questions, where a score of 0-1 and 2-4 points of the correct response classified the individual as having barriers and facilitators towards PCC, respectively (Setegn, 2021).

3.11.2 Dependent variable

Intentional utilization of PCC: Five (5) multiple-choice questions with 1 and 0 points for correct and incorrect responses determined the intention to use PCC. We classify the respondent as having the intention to use PCC if they select one (1) of the listed recommended interventions, while a zero score (0) indicates no intention to use PCC (Setegn, 2021).

3.12 Data analysis

IBM Statistical Package for Social Science Software (SPSS) version 25 was used to analyze data, the first step was to verify the accuracy and completeness of the data. Data cleaning was done by running frequency to check missing data that were then coded and entered into the code book. Social demographic characteristics were analyzed by descriptive analysis and presented by using frequency and percentages. Chi-square was used to measure the relationship between independent and dependent variables. The p-value <0.05 was considered significant. Bivariate and multivariate logistic regression analysis model was employed in which 95% CI and p-value were used to measure the strength of the association and controlling confounders.

3.13 Ethical Consideration

The Institutional Research Review Board of the University of Dodoma granted ethical approval. The Regional Administrative Authority (RAS) of Dodoma granted permission to conduct the study (Appendix 5). The study's aims, advantages, disadvantages, benefits, and risks to the participants, who then signed the consent form to participate.

The study respected the participants' autonomy by allowing them to participate, provide any information they desired, and withdraw at any time without affecting their access to health services.

CHAPTER FOUR STUDY RESULTS

4.1 Overview

This chapter talks about the findings of the study that was done on pregnant women in Dodoma who go to antenatal care clinics. It looked at what they knew and how they used planned behavioral theory to make intentional use of preconception care. This study organizes the results according to its specific objectives.

Chart flow

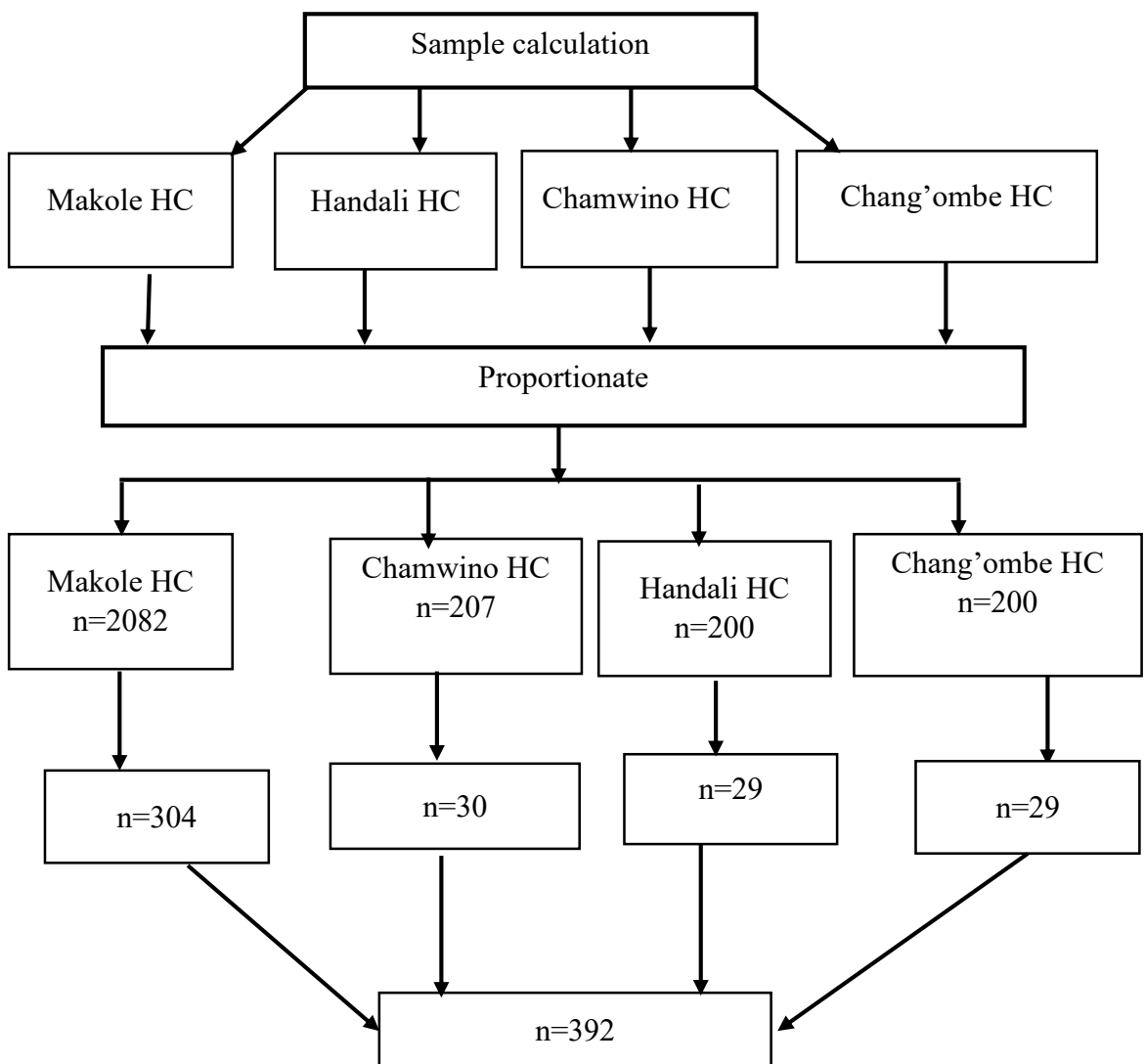


Figure 3: Flow diagram describes results of recruitment

4.2 Social demographic characteristics of respondents

Three hundred ninety-two respondents participated in the study. The majority of respondents, 55.6% (n = 218), were aged 18-28 years with a mean age of 28 (SD = 6.574) years. Conversely, 79.8% (n = 313) of the respondents were married. Regarding the obstetric history of the respondents, 45.2% (n = 177) reported having been pregnant two to four times. Meanwhile, 36.5% (n = 143) of respondents had a primary education level (Table 2).

Table 2: Social demographic characteristics of pregnant women (N=392)

Variable	Mean ± SD	Frequency(n=392)	Percent (%)
Age group of women	27.95 ± 6.574		
18-28 years		218	55.6
29-39 years		147	37.5
40-49 years		27	6.9
Marital status			
Married		313	79.8
Not married		79	20.2
Religion			
Christian		233	59.4
Muslim		159	40.6
Occupation			
Housewife		120	30.6
Student		25	6.4
Employed		53	13.5
Self-employed		194	49.5
Educational level			
Not attended		26	6.6
Primary		143	36.5
Secondary		137	34.9
College and above		86	21.9
Parity			
Primigravida		93	23.7
Multipara		177	45.2
Grand multipara		122	31.1

4.3 Preconception care Knowledge among pregnant women

Out of the 392 pregnant women who visited antenatal care clinics, 72% (n = 283) lacked sufficient understanding of preconception care. Among them, 99.7% (n = 391) did not choose to take folic acid as a crucial part of preconception care. Additionally, 99.2% (n = 389) did not adjust their body weight through exercise, and 96.9% (n =

380) did not choose to consume high-calorie foods. When it came to the risk factors for unfavorable birth outcomes, respondents did not identify advanced maternal age (84.9%; 333), socio-economic status (93.1%; 365), and vitamin deficiency (93.1%; 365) Most respondents recommended stopping alcohol use and cigarette smoking when preparing for pregnancy (Fig. 4).

Table 3: Items analysis of knowledge on PCC

Knowledge item	Frequency (n)	Percent (%)
Meaning of PCC		
Care provided during pregnancy	164	41.8
Care provided before getting pregnant	119	30.4
Care provided during labor and delivery	7	1.8
Care provided after giving birth	5	1.3
Don't know	97	24.7
Not recommended component of preconception care		
Regular exercise	3	0.8
Use of alcohol and smoking	350	89.3
Eating high dietary food	12	3.1
Don't know	27	6.9
Importance of folic acid		
Prevent birth defects of the brain and spine	74	18.9
It helps induce labor	16	4.1
It prevents morning sickness	14	3.6
Reduces the risk of gestational diabetes	10	2.6
Don't know	278	70.9
Time for start taking folic acid		
At least 6 months	8	2
At least 3 months	51	13
At least 1 month	22	5.6
Only after conception	59	15.1
Don't know	252	64.3
True regarding preconception care		
It is only important for women, not for men	44	11.2
It can improve pregnancy outcomes	142	36.2
It is only necessary for women with existing health conditions	74	18.9
It is only necessary if the woman has had a previous healthy pregnancy	67	17.1
Don't know	65	16.6

Risk factor for adverse pregnancy outcomes that preconception care can address		
Advanced maternal age	59	15.1
Low socioeconomic status	27	6.9
Lack of prenatal vitamins during pregnancy	137	34.9
All of the above	97	24.7
Don't know	72	18.4
Should be avoided during preconception and pregnancy		
Regular exercise	71	18.1
Smoking	311	79.3
Consuming fruit and vegetables	1	0.3
Drinking plenty of water	1	0.3
None of the above	8	2.0
Roles played by maintaining a healthy weight in preconception care		
It is not important for preconception care	79	20.2
It can reduce the risk of gestational diabetes	69	17.6
It increases the risk of birth defects	15	3.8
It can cause infertility	4	1.0
Don't know	225	57.4

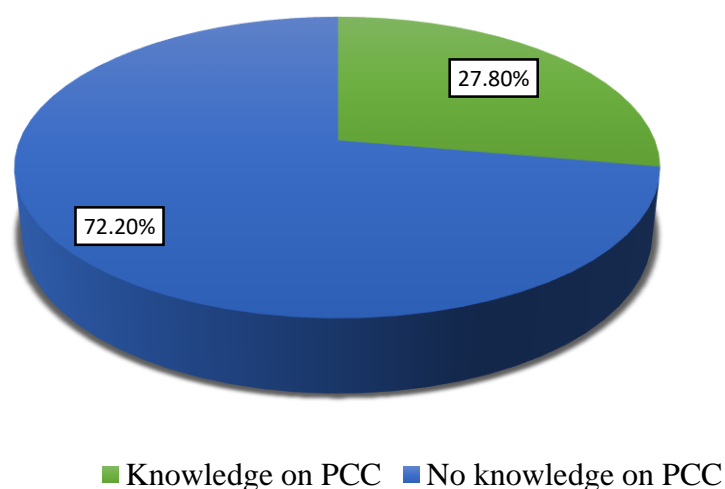


Figure 4: Knowledge classification of preconception care

4.4 Attitude towards preconception care

Among 392, 69% (n = 270) had a positive attitude toward preconception care. Of respondents who agreed that it is important to be in good health before pregnant 50.5% (n = 198), preconception care can improve pregnancy outcomes 51.5% (n = 202), disagree that women with prior pregnancy complications should receive preconception

care, while 54.1% (n = 225) disagree that preconception care should be a part of antenatal care clinics (Fig. 5).

Table 4: Items analysis of attitude

Item	Disagree	Neutral	Agree
	n (%)	n (%)	n (%)
It is important to be in good health before becoming pregnant	74(18.9)	120(30.6)	198(50.5)
Preconception care improves pregnancy outcomes	95(24.2)	95(24.2)	202(51.5)
Preconception care applies not only to women with pregnancy complications	144(36.7)	66(16.8)	182(46.4)
Preconception care is significant	126(32.1)	108(27.6)	158(40.3)
Preconception care might serve the pregnancy	160(40.8)	68(17.3)	164(41.8)

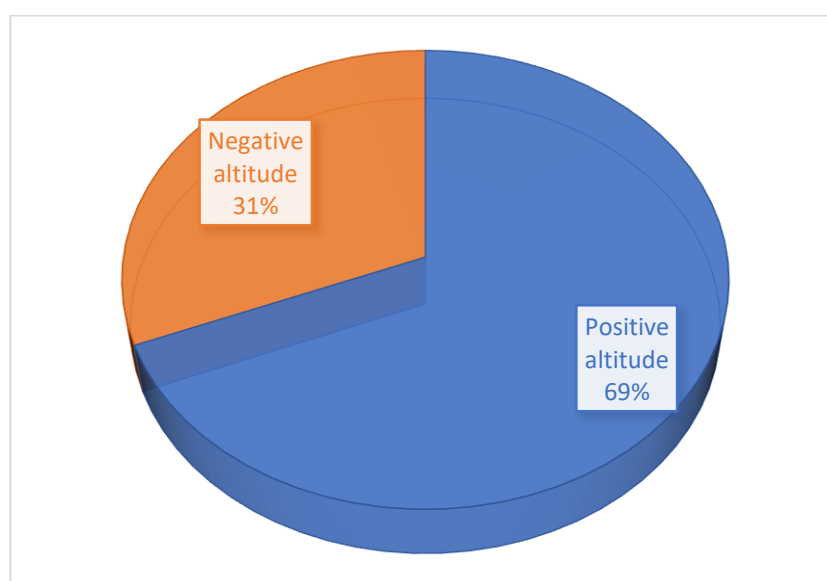


Figure 5: Respondents attitude towards preconception care

4.5 Subjective norms of respondents towards preconception care

The majority of the respondents, 92% (n = 360), had no support from their close relatives regarding preconception care, 90.6% (n= 355) of women reported that they received no support from their close relatives when it came to seeking medical advice

and screening for diseases, 90.1% (n= 353) when it came to lifestyle modification, 87% (n=341) when it came to managing health conditions, 92% (n= 360) when it came to addressing mental health issues and stress levels, and 70.2% (n= 275) when it came to society's expectations to quit substance abuse.

Table 5: Subjective items analysis

Item	No n (%)	Yes n (%)
Your friends and family members think it is important for you to seek medical advice and screening before pregnancy	355(90.6)	37(9.4)
Do you feel there is social pressure from your community to adopt a healthy lifestyle and maintain a proper diet before attempting to have a pregnancy?	353(90.1)	39(9.9)
Your partner and or family members encourage you about preconception healthy practices like taking prenatal vitamins and managing chronic conditions	341(87.0)	51(13.0)
Do believe society expects individuals or couples to avoid harmful substances like smoking and excessive alcohol consumption when planning for pregnancy	275(70.2)	117(29.8)
In your social circle, there is a common understanding that it is important to address mental health and stress levels before trying to conceive	360(91.8)	32(8.2)

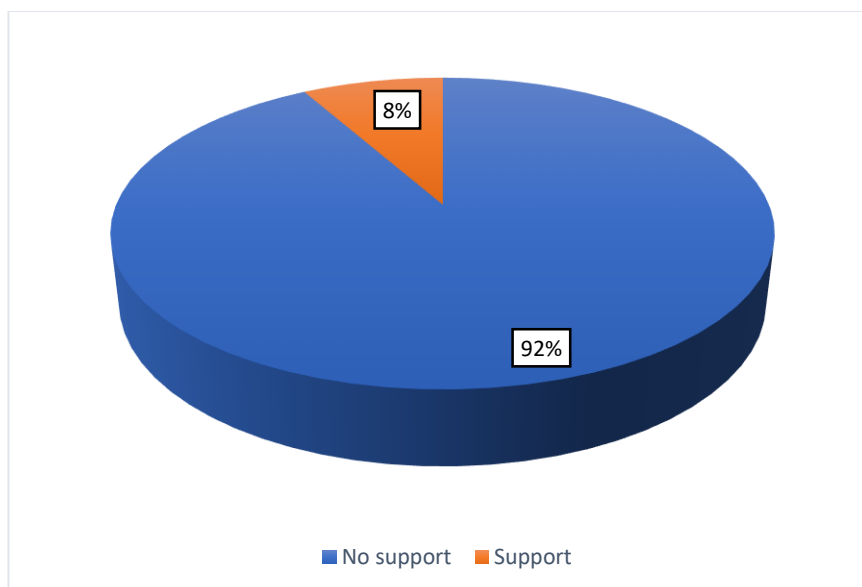


Figure 6: Subjective norms classification among pregnant women attending ANC

4.6 Perceived behavioral control

The majority of respondents, 59.40% (n = 233), reported barriers to accessing preconception care services, taking folic acid supplementation, 83.7% (n = 328), adopting and maintaining preconception exercise, 68.4% (n = 268), and managing existing health conditions. 68.1% (n = 267), while 55.6% (n= 218) reported being confident about attending a health facility despite the possible barriers they can experience (Table 6).

Table 6: Items analysis for perceived control

Item	Yes n (%)	No n (%)
Are you confident to attend regular preconception check-ups?	218(55.6)	174(44.4)
Do you have necessary skills to adhere to a preconception nutrition plan, including taking recommended supplements like folic acid?	64(16.3)	328(83.7)
Do you have ability to manage and control any existing health conditions or chronic illnesses before planning for pregnancy?	125(31.9)	267(68.1)
Do you have ability to adopt and maintain a preconception exercise routine that is suitable for your health before pregnancy?	124(31.6)	268(68.4)

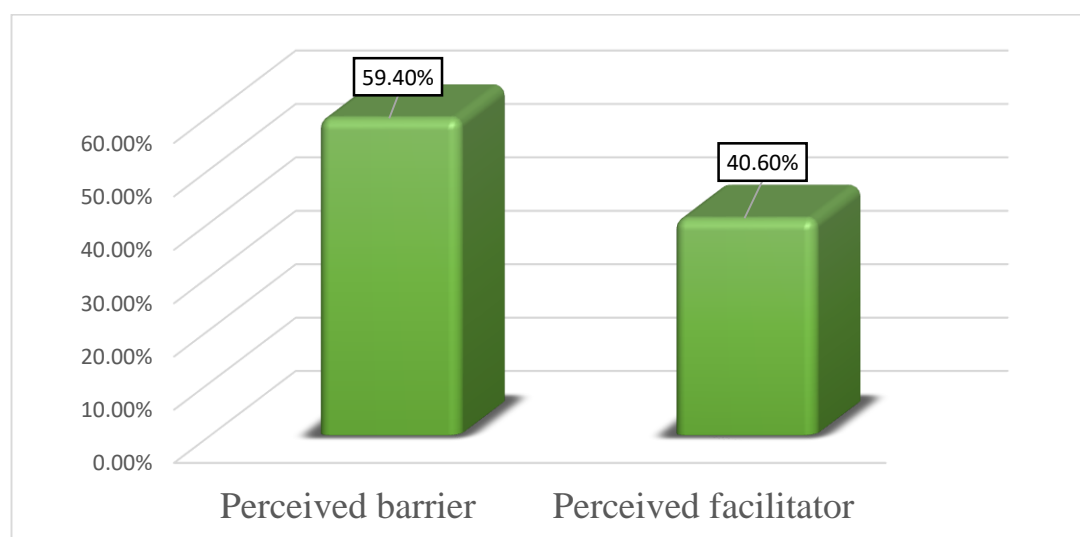


Figure 7: Perceived behavioral control of pregnant women

4.7 Intentional utilization of PCC

Among 392 respondents, 93.10% (n = 365) had the intention to utilize preconception care; avoiding alcohol use was 77.3% (n = 303); receiving medical advice was 52.6% (n = 206); family planning was the leading component of preconception care selected by the majority of the respondents, 82% (n = 321); and adjusting body weight by dietary modification, exercise was 61% (n = 238) and 75.5% (n = 296), respectively (Table 7).

Table 7: Items analysis of intention on PCC

Intention items	Frequency (n)	Percent (%)
Will you plan to visit HF before you conceive		
Yes	280	71.4
No	112	28.6
Reasons for visit		
To take folic acid	40	10.2
To screened and treated for the disease	127	32.4
To get a vaccination	40	10.2
To receive medical advice	206	52.6
To use Family Planning	71	18.1
Don't know	12	3.1
Planning for maintaining body weight		
Yes	196	50.0
No	196	50.0
Mechanism of body weight maintenance		
Modify diet	154	39.3
Exercise	96	24.5
Substance to be avoided		
Cigarette smoking	268	68.4
Alcohol consumption	303	77.3
Don't know	120	30.6

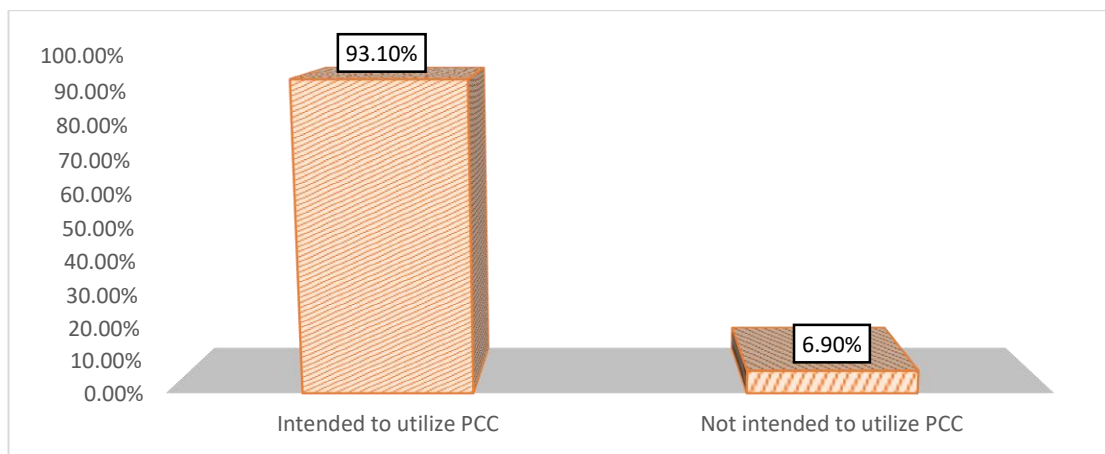


Figure 8: Intention to utilization of PCC

The relationship between some sociodemographic characteristics, PCC knowledge, attitude, and perceived behavioral control among pregnant women attending antenatal care clinics in Dodoma denoted significant variability. Some of the variables show a relationship to the utilization of preconception care services. These variables were education level ($\chi^2 = 11.844$, $p = 0.008$), preconception knowledge level ($\chi^2 = 6.011$, $p = 0.014$), positive attitude towards preconception care ($\chi^2 = 13.714$, $p < 0.001$), and perceived barriers ($\chi^2 = 10.432$, $p < 0.001$).

Table 8: Relationship between Socio-Demographic Characteristics, knowledge, constructs of planned behavioral theory and Intention utilization of preconception care (N=392)

Variable	Intention Not intended to utilize PCC n (%)	Intended to utilize PCC n (%)	Chi-square (P-Value)
Age group			0.885(0.642)
18-28 years	15(6.9)	203(93.1)	
29-39 years	9(6.1)	138(93.9)	
40-49 years	3(11.1)	24(88.9)	
Marital status			1.473(0.225)
Married	24 (7.7%)	289 (92.3%)	
Not married	3(3.8)	76(96.2)	
Religion			0.692(0.405)
Christian	14 (6.0%)	219 (94.0%)	
Muslim	13 (8.2%)	146 (91.8%)	
Occupation			6.945(0.074)
Housewife	14 (11.7)	106 (88.3)	
Student	1 (4.0)	24 (96.0)	

Employed	4(7.5)	49(92.5)	
Self-employed	8(4.1)	186(95.9)	
Educational level			11.844(0.008)
Not attended	5 (19.2%)	21 (80.8%)	
Primary	14 (9.8%)	129 (90.2%)	
Secondary	5 (3.6%)	132 (96.4%)	
College and above	3 (3.5%)	83 (96.5%)	
Parity			4.365(0.113)
Primigravida	9 (9.7%)	84 (90.3%)	
Multipara	7 (4.0%)	170 (96.0)	
Grand multipara	11 (9.0%)	111 (91.0)	
Knowledge level on PCC			6.011(0.014)
Knowledgeable	2(1.8)	107(98.2)	
Not knowledgeable	25(8.8)	258(91.2)	
Attitude on PCC			13.714(<0.001)
Positive	10(3.7)	260(96.3)	
Negative	17(13.9)	105(86.1)	
Subjective Norms on PCC			0.769(0.380)
No Support	26(7.2)	334(92.8)	
Support	1(3.1)	31(96.9)	
Perceived behavior control			10.432(0.001)
Perceived barrier	24(10.3)	209(89.7)	
Perceived facilitators	3(1.9)	156(98.1)	

The findings from the bivariate and multivariate logistic regression analysis models show the association between variables. It was revealed that pregnant women with secondary education levels were more likely to intend to utilize preconception care services {AOR = 4.842, 95% CI: 1.157, 20.268, p = 0.031}; moreover, having a positive attitude toward PCC increases the intention of utilizing preconception services [AOR = 5.756, 95% CI: (2.414, 13.726), p<0.001]. The findings also indicated that pregnant women who perceived more facilitators were more likely to utilize preconception care, compared to those who perceived more barriers [AOR=5.258, 95% CI: 1.448, 19.093, p = 0.012]. (Table 9).

Table 9. Bivariate and multivariate logistic regression analysis for Socio-Demographic Characteristics, knowledge, constructs of theory of planned behavior and intentional utilization of Preconception care (N=392)

Variable	COR	95% C.I		P value	AOR	95% CI		P value
		Lower	Upper			Lower	Upper	
Educational level								
Not attended	Ref			0.016				0.136
Primary	2.194	0.716	6.727	0.169	1.593	0.461	5.509	0.462
Secondary	6.286	1.675	23.585	0.006	4.842	1.157	20.268	0.031
College	6.587	1.456	29.798	0.14	1.928	0.328	11.336	0.468
Knowledge level on PCC								
Knowledgeable	5.184	1.207	22.273	0.027	4.606	0.885	23.974	0.070
Not knowledgeable	Ref							
Attitude on PCC								
Positive	4.210	1.866	9.494	0.001	5.756	2.414	13.726	<0.001
Negative	Ref							
Perceived behavior control								
Perceived barrier	Ref							
Perceived facilitators	5.971	1.766	20.186	0.004	5.258	1.448	19.093	0.012

CHAPTER FIVE

DISCUSSION

Women's health status before conception determines the pregnancy outcomes and health of future generations. The majority of health problems that occur during pregnancy, and in the postpartum period can be addressed before the women conceive. Preconception care is an evidence-based health intervention that helps to improve maternal and child health by reducing morbidities and mortalities both in high- and low-income countries. Knowledge, attitude, non-restrictive norms, and perceiving facilitators than barriers can increase their behavior of seeking health, increase intention to utilize a certain health service and modify their lifestyle. The findings of this study showed that pregnant women had inadequate PCC knowledge, positive attitudes perceived more barriers, and more than three-quarters of respondents had the intention to use preconception care.

5.1 Knowledge on preconception care

Findings revealed majority of the respondents had inadequate knowledge of preconception care. These findings were comparable to studies conducted in Kenya, Ethiopia, Zambia, and Nepal (Joyce, 2018; Khanal, 2020; Mutale et al., 2017; Nepali & Sapkota, 2017; Teshome et al., 2020). The findings of the current study are inconsistent with studies conducted by (Al-Kasseh et al., 2022; Gyamtsho et al., 2022) which reported high knowledge of preconception care among the respondents. The difference in knowledge level may be due to the study setting, socioeconomic status, and education level. The current study indicates that pregnant women with low education levels and the lack of preconception care in existing reproductive and antenatal care services could be contributing factors to low PCC knowledge.

5.2 Attitude towards preconception care

Nearly three-quarters of the pregnant women had a positive attitude towards preconception care. These findings are in line with a study conducted in Saudi Arabia, and Ireland (Al-Marwani & Al-Zahrani, 2022). These findings are inconsistent with a study conducted in India and Iran (Anuar et al., 2020; Moradi et al., 2020). Education level, previous experience of pregnancy-related complications, or problems in conceiving pregnancy can contribute to a positive attitude towards preconception care.

5.3 Subjective norms on preconception care

Regarding subjective norms of pregnant women towards preconception care, more than three-quarters of the respondents had no support from their close relatives. The majority of participants reported that at the family level, importance and understanding of preconception care services are not available, and seeking preconception care services could bring something bad to the family since pregnancy can occur by nature when an individual is of reproductive age. Adjusting body weight, screening and treatment of existing health conditions, and adjusting medication before becoming pregnant are not appreciated, claiming these practices are not just a local issue but a global one. The findings of this study are in line with those presented by (Alie et al., 2022; Bayrami et al., 2021). Cultural norms, religious beliefs, or the education level of the respondent's family members can be associated with poor support for preconception care.

5.4 Perceived behavioral control

According to findings of perceived behavioral control, more than half of pregnant women attending ANC clinics reported experiencing more barriers than facilitators when it came to preconception care services. The majority of respondents reported access to PCC, the cost of healthcare services, and cultural factors. These findings align with a study from Ethiopia, where the majority of participants encountered more barriers than facilitators when seeking PCC services (Behavior et al., 2021; Tena et al., 2024). However, findings of studies conducted in Iran reported that respondents perceived more facilitators than barriers (Khayeri et al., 2019; Mohebi et al., 2018). There may be problems getting PCC interventions if they are not available in existing reproductive and antenatal care services, if people don't know enough about preconception care, or if healthcare professionals don't know enough about it.

5.5 Intention to utilize preconception care services

Intention to utilize preconception care services was assessed, in which more than three-quarters of respondents had the intention to utilize preconception care services. The current findings are similar to other studies findings reported (Creanga et al., 2016; Endayehu et al., 2020; Teshome et al., 2020). However, the study in Southern part of Ethiopia reported inconsistent results (Khayeri et al., 2019; Nigussie et al., 2020; Temel et al., 2015) in which the respondents had no intention to utilize preconception

care services. Factors such as having a secondary or above education level, a positive attitude towards PCC, perceiving more facilitators, and having a previous bad obstetric experience could be the strongest predictors of intention to utilize preconception care services.

CHAPTER SIX

CONCLUSSION AND RECOMMENDATIONS

6.1 Conclusion

The current study concludes that more than half of the respondents had inadequate knowledge of preconception care and had a positive attitude towards preconception care; nearly three-quarters of respondent's perceived barriers in seeking preconception care services. Despite having inadequate knowledge of preconception care and perceiving more barriers than facilitators, more than three-quarters of the respondents had the intention to utilize preconception care services. High education level was the only socio-demographic variable found to be significantly associated with intention to utilize preconception care services. Among the three constructs of the Theory of Planned Behavior (TPB), positive attitude and perceiving more facilitators than barriers were strongly associated with their intention to utilize preconception care services showing that the theory used aligned with the outcome variable. Furthermore, the findings of the current study will provide potential contributions to future research.

6.2 Recommendations

The researcher proposes the following recommendations based on the study findings: To enhance preconception care education health authorities should implement educational programs to raise awareness about the importance and benefits of preconception care. Community outreach, media campaigns, and the integration of preconception care information into routine reproductive and antenatal services can accomplish this. Strengthen facilitators by ensuring PCC services are available in health facilities and geographically accessible, as well as training healthcare workers to provide personalized and respectful care regarding an individual's religious beliefs and cultural norms. Healthcare workers should provide women with lower education levels with simplified, clear, and actionable information while offering more in-depth resources to women with higher education levels to further empower them.

6.3 Limitations of the study

The study population includes only pregnant women who are already attending ANC clinics while excluding those who have not attended ANC clinics. The current study was hospital-based which limits the generalizability of the results. Access to healthcare

services including the quality and availability of preconception care may vary widely which could impact participants' intentions if these factors are not considered or controlled, they may skew results.

6.4 Strength of the study

The study used a large sample size, and the planned behavior theory provides a robust framework for understanding the factors (such as attitude, subjective norms, perceived behavioral control, and intention) that influence pregnant women's decision to utilize preconception services. Pregnant women attending ANC represent an ideal population to assess knowledge towards preconception care, identify barriers to PCC utilization, and thus inform interventions to improve maternal and neonatal health and reduce complications in pregnancy, birth, and the postpartum period.

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APPENDICES

Appendix 1: Consent statements (to be read by data collector for the study participants)

I am going to ask you questions about knowledge, constructs of Theory Planned Behavior, and intention to utilize preconception care. You are systematic selected to participate in the study. Your participation in this study doesn't involve any direct risk or benefit for you but is very useful to improve maternal and neonatal health outcomes in this area. Your name will not appear on this questionnaire, and all the information you provide to me will be strictly confidential. It takes only 15 minutes to finish the interview and you are not obliged to answer any question you don't wish to answer, you can also end this interview at any time you wish to do so. Would you like to participate in the study?

Yes _____ No _____

Interviewer, if the answer is "Yes" please sign (i.e. either using their signature or fingerprint) below.

Signature _____

Date _____

Identification No. _____

Contact address of principal investigator: mobile: +2556718547173

Email: lisothampangala@gmail.com

Appendix 2: Questioner (English vision)

PRECONCEPTION CARE ASSESSMENT TOOL

SECTION A: SOCIAL DEMOGRAPHIC CHARACTERISTICS

1. What is your age

- a) 18-28
- b) 29-39
- c) 40-49

2. What is your marital status?

- a) Married
- b) Not married

3. What is your occupation

- a) Housewife
- b) Student
- c) Government employee
- d) Self-employee

4. What is your education level

- e) Not attended
- f) Primary
- g) Secondary
- h) College

5. How many times have you been pregnant?

- a) Primigravida
- b) Multipara
- c) Grand multipara

SECTION B: KNOWLEDGE OF PRECONCEPTION CARE

Choose correct response: @ 1 Point for correct response

1. Meaning of PCC

- a) Care provided during pregnancy
- b) Care provided before getting pregnant
- c) Care provided during labor and delivery
- d) Care provided after giving birth
- e) Don't know

2. Not recommended component of preconception care

- a) Regular exercise
- b) Use of alcohol and smoking
- c) Eating high dietary food
- d) Don't know

3. Importance of folic acid

- a) Prevent birth defects of the brain and spine
- b) It helps induce labor
- c) It prevents morning sickness
- d) Reduces the risk of gestational diabetes
- e) Don't know

4. Time for start taking folic acid

- a) At least 6 months
- b) At least 3 months
- c) At least 1 month
- d) Only after conception
- e) Don't know

5. True regarding preconception care

- a) It is only important for women, not for men
- b) It can improve pregnancy outcomes
- c) It is only necessary for women with existing health conditions
- d) It is only necessary if the woman has had a previous healthy pregnancy
- e) Don't know

6. Risk factor for adverse pregnancy outcomes that preconception care can address

- a) Advanced maternal age
- b) Low socioeconomic status
- c) Lack of prenatal vitamins during pregnancy
- d) All of the above
- e) Don't know

7. Should be avoided during preconception and pregnancy

- a) Regular exercise
- b) Smoking
- c) Consuming fruit and vegetables
- d) Drinking plenty of water
- e) None of the above

8. Roles played by maintaining a healthy weight in preconception care

- a) It is not important for preconception care
- b) It can reduce the risk of gestational diabetes
- c) It increases the risk of birth defects
- d) It can cause infertility
- e) Don't know

SECTION C: ATTITUDE TOWARDS PRECONCEPTION CARE

Item	Disagree	Neutral	Agree
It is important to be in good health before becoming pregnant			
Preconception care improves pregnancy outcomes			
Preconception care applies only to women with pregnancy complications			
Preconception care is not mandatory			
Preparing before pregnancy might lead to pregnancy loss			

SECTION D: SUBJECTIVE NORMS TOWARDS PCC

Item	Yes	No
Your friends and family members think it is important for you to seek medical advice and screening before pregnancy		
Do you feel there is social pressure from your community to adopt a healthy lifestyle and maintain a proper diet before attempting to have a pregnancy?		
Your partner and or family members encourage you about preconception healthy practices like taking prenatal vitamins and managing chronic conditions		
Do believe society expects individuals or couples to avoid harmful substances like smoking and excessive alcohol consumption when planning for pregnancy		
In your social circle, there is a common understanding that it is important to address mental health and stress levels before trying to conceive		

SECTION E: PERCEIVED BEHAVIORAL CONTROL

Item	Yes	No
Are you confident to attend regular preconception check-ups?		
Do you have necessary skills to adhere to a preconception nutrition plan, including taking recommended supplements like folic acid?		
Do you have ability to manage and control any existing health conditions or chronic illnesses before planning for pregnancy?		
Do you have ability to adopt and maintain a preconception exercise routine that is suitable for your health before pregnancy?		

SECTION F: INTENTION TO UTILIZE PCC

Choose your option; @ 1 point

1. Visit

- a) Yes
- b) No

2. Reasons for visit

- a) To take folic acid
- b) To screened and treated for the disease
- c) To get a vaccination
- d) To receive medical advice
- e) To use Family Planning
- f) Don't know

3. Planning for maintaining body weight

- a) Yes
- b) No

4. Mechanism of body weight maintenance

- a) Modify diet
- b) Exercise

5. Substance to be avoided

- a) Cigarette smoking and or Alcohol consumption
- b) Don't know

Appendix 3: Research proposal ethical clearance



THE UNITED REPUBLIC OF TANZANIA
MINISTRY OF EDUCATION, SCIENCE AND TECHNOLOGY
THE UNIVERSITY OF DODOMA



Our. Ref. No. MA.84/261/70/27

19th February, 2024

To: Jotham Ezekiel Jotham,
The University of Dodoma.

RE: RESEARCH PROPOSAL ETHICAL CLEARANCE

The heading above is concerned.

2. The Institutional Research Review Ethics Committee (IRREC) convened for its 70th meeting on 15th February, 2024 and reviewed a research proposal titled **“Assessing Knowledge, And Constructs of Planned Behavior Theory Towards Utilization of Preconception Care Among Pregnant Women Attending Antenatal Care Clinics in Dodoma: Hospital-Based Analytical Cross-Sectional Study.”**

3. I am pleased to inform you that the committee has granted ethical clearance to the submitted proposal.

4. Furthermore, as the Principal Investigator of the study the following issues must be observed: -

- A progress report is submitted to the University of Dodoma.
- Copies of final publications are made available to the University of Dodoma.
- Study area: **Dodoma Region.**

Best regards,

Prof. Pendo S. Kasoga

Chairperson Institutional Research Review Committee (IRREC)

cc: Deputy Vice Chancellor-Academic, Research and Consultancy

Appendix 4: Research clearance



THE UNITED REPUBLIC OF TANZANIA
MINISTRY OF EDUCATION, SCIENCE AND TECHNOLOGY
THE UNIVERSITY OF DODOMA
OFFICE OF THE VICE CHANCELLOR



Ref. No. MA.84/261/02/A'70/127

27th February, 2024

Regional Administrative Secretary,
Dodoma Region,
P.O. Box 914,
DODOMA.

RE: RESEARCH CLEARANCE

Please refer to the above heading.

2. The purpose of this letter is to introduce to you **Mr. Jotham Ezekiel Jotham**, a student of the University of Dodoma who is required to conduct research. Our students undertake research activities as part of their study programmes.

3. In accordance with the Government Circular Letter with Ref. No. MPEC/R/10/1 dated 4th July 1980, the Vice Chancellor of the University can issue research clearances to staff members and students of the University on behalf of the Government and the Tanzania Commission for Science and Technology (COSTECH). I am pleased to inform you that, I have granted a research clearance to **Mr. Jotham Ezekiel Jotham**.

4. In view of the above, I kindly request you to provide the assistance needed for him to conduct the research. Specifically, I request your permission for **Mr. Jotham Ezekiel Jotham**, to visit various units within the Dodoma Region, to consult with relevant stakeholders in connection with his research.

5. The title of his research is "**Assessing Knowledge, And Constructs of Planned Behavior Theory Towards Utilization of Preconception Care Among Pregnant Women Attending Antenatal Care Clinics in Hospital-Based Analytical Cross-Sectional Study**" His research is from February to December 2024.

6. Should there be any restrictions, you are kindly requested to advise us accordingly. If you require further information, please do not hesitate to contact us through the Directorate of Research, Publications, and Consultancy, P.O. Box 259, Dodoma, Tel.+ (255) 262310301, Email: drpc@udom.ac.tz

Yours Sincerely,

Prof. Razack B. Lokina
For. VICE CHANCELLOR

Appendix 5: Kibali cha utafiti (Halmashari ya Jiji la Dodoma)



JAMHURI YA MUUNGANO WA TANZANIA
OFISI YA RAIS
TAWALA ZA MIKOA NA SERIKALI ZA MITAA
HALMASHAURI YA JIJI LA DODOMA



Unapojibu tafadhali taja:

Kumb. Na. HJD/F.10/695


15 Machi, 2024

Mkuu wa Divisheni,
Divisheni ya Afya, Ustawi wa Jamii na Lishe,
Halmashauri ya Jiji,
S.L.P 1249,
DODOMA.

YAH: KIBALI CHA KUFANYA UTAFITI

Husika na somo tajwa hapo juu.

2. Ofisi ya Mkurugenzi wa Jiji la Dodoma imepokea barua yenye Kumb Na. **HA.188/222/01A/58** ya tarehe **06 Machi, 2024** kutoka kwa Katibu Tawala Mkoa ikimtambulisha **Bw. Jotham Ezekiel Jotham** kutoka Chuo Kikuu cha Dodoma (UDOM) kuja kufanya utafiti kuhusu **"ASSESSING KNOWLEGDE AND CONSTRUCTS OF PLANNED BEHAVIOR THEORY TOWARDS UTILIZATION OF PRECONCEPTION CARE AMONG PREGNANT WOMEN ATTENDING ANTENATAL CARE CLINICS IN HOSPITAL-BASED ANALYTICAL CROSS-SECTIONAL STUDY"** utafanyika kwa muda wa miezi mitatu kuanzia April, 2024 hadi Juni, 2024.
3. Kwa barua hii, naomba apokelewe na kupatiwa ushirikiano ili aweze kufanikisha utafiti wake kama ilivyoelezwa hapo juu.
4. Ahsante.


Agness E. Shing'wenda
**Kny: MKURUGENZI WA JIJI
DODOMA**



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