



# University of Malawi

Kamuzu College Of Nursing

Research Proposal

On

~~A study to assess~~ knowledge & perceptions of pregnant women  
on the dangers of pica during pregnancy at Dwangwa Health  
Centre in Kasungu District

A Proposal Submitted to the Faculty of Nursing in Partial Fulfillment for  
the Award of Bachelor of Science in Nursing.

SUBMITTED BY: SYLVESTER DAMALEKNI ZIMBA

SUPERVISED BY: MRS. M. CHIRWA.

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Ndafokozeredwa bwino lomwe za kafukufukuyi ndipo ndaventsetsa.

Ine.....ndavomera kutengapo mbali pa kafukufuyu.

Ine.....ndakana kutengapo mbali pakafukufukuyu.

**Wotengapo mbali.....Dzina.....Tsiku.....malo.....**

**Mboni..... Dzina ..... Tsiku.....malo.....**

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## LIST OF ABBREVIATIONS

- AJFAND: A Journal of Food, Agriculture, Nutrition and Development.
- DC : District Commissioner.
- DHO : District Health Officer.
- HBM : Health Belief Model.
- KCN : Kamuzu College of Nursing.
- MDHS : Malawi Demographic & Health Survey.
- NHANES: National Health & Nutrition Examinations Survey.
- MIS : Multiple Indicator Survey.
- USA : United States of America.

## CHAPTER ONE

### 1.0 INTRODUCTION

Pica is a word derived from Latin word “magpie” which is a bird that will eat anything (World book encyclopedia, 1992). Medically, pica is an eating disorder where there is persistent eating of non-nutritive food substances for a period of at least one month at an age in which this behaviour is developmentally inappropriate (Smith, 1999). Frazer & Cooper (2003), defined pica as bizarre craving for and compulsive, secret chewing of food or ingestion of non food substances. Most literature shows that pica is generally diagnosed in children and pregnant women. Examples of items that are craved for include: clay, dirt, stones, hair, insects, buttons, glue, feces, ice, charcoal, cigarette butts and fingernails (Moby’s medical, nursing & allied dictionary, 2002).

Pica occurs throughout the world in countries like USA and UK. It is common in western Kenya, South Africa, and India and has been reported in Australia, Canada, Israel, Iran and Uganda (Lopez, 2006). Pica has been reported in some parts of the world where there is poverty that contribute to the shortage of iron containing foods (Tayie, 2006). In Malawi, pica has been reported from different cultures but there are no exact prevalence rates. However, it is a common sight to see clay soils being sold at local markets where the pregnant women are the ones who buy and eat.

Eating non-food substances during pregnancy is potentially dangerous to both the mother and her unborn child. These may interfere with food nutrients absorption that leads to their deficiencies (Edward, Porcereli & Victoria, 2000). Edward et al further explained that pica causes bowel obstruction due to ingestion of hard materials that block the intestines. Other harmful effects of pica include lead poisoning and parasitic infection that come because of ingestion of lead and eggs of worms respectively and dental injury due to chewing of hard materials that injure the teeth (Berkow, 1999).

Maternal health has been greatly affected worldwide specifically in developing countries like Malawi due to micro-nutrients deficiencies for example iron deficiency anemia is a

major threat to maternal health as it contributes to low birth weights, miscarriages, lowered resistance to infection and poor cognitive development in babies (Malawi Demographic & Health Survey (MDHS), 2004). It is therefore important that women have knowledge on the dangers of pica during pregnancy as it will assist the women to prevent the effects that pica brings. This study aims at exploring women's knowledge and perception on the dangers of pica during pregnancy. The study participants targeted are pregnant women who are attending antenatal clinic at Dwangwa health centre who will participate in the study with informed consent. The researcher has adopted a quantitative design for the study.

## **1.1 BACKGROUND**

Several explanations have been put forward to explain the phenomenon of pica during pregnancy. The first explanation of pica centers on nutritional deficiency where iron deficiency is the major cause (Olds, London & Ladwig, 2006). Iron is a part of protein hemoglobin, which carries oxygen in the blood, part of myoglobin in muscles, which makes oxygen available for muscle contraction (Sizer & Whitney, 2008). Because pica sometimes occurs with iron deficiency and that some soils contain iron, therefore, pica develops because the body craves for what it needs (Taylor & Antony, 1983). However, iron rich clays and soils contain substances that interfere with iron absorption in the intestines, so eating clay and soils is unlikely to benefit the iron status in the body (Sizer & Whitney, 2008).

The second explanation for the development of pica in pregnancy is the cultural factors. In some cultures, pica is a culturally accepted way of increasing spirituality or treating certain physical illness (Simpson, Mull & Longley, 2002). This shows that culture has an impact on the development of pica in pregnancy.

Simpson further explains that the third reason for the development of pica is psychological problems. Mental illness or psychological trauma can trigger pica in some people. Pica is often a hallmark of extreme stress, fear or abuse.

Malnutrition is one of the major public health and developmental problems that people around the world and especially the developing countries are challenged with. The causes include insufficient intake of various food nutrients, food insecurity and consumption of non-food substances (Malawi Demographic & Health Survey, 2004). This has had an impact on both maternal and child health at large. The problem becomes worse during pregnancy when women develop a desire to crave for non-food substances, pica.

According to the nation news paper of 8<sup>th</sup> May 2009 reported by MANA, the Multiple Indicator Survey (MICS) of 2006 estimated the maternal mortality for Malawi to be 807 per 100,000 live births while neonatal mortality ratio was 33 per 1000 live births. One of the contributing factors to these high mortality rates is poor nutrition where pica is inclusive (Nation News paper, 2009).

Micronutrients deficiencies of vitamin A, Iodine and iron/folate are a public concern in Malawi. According to National Micronutrient Survey (MOHP 2003b), about 60% of children under five, 57% of non pregnant women and 38% of men and school children had a sub clinical vitamin A deficiency. The survey also reported that 80% of children under five, 27% of men had anemia and the 60% of anemia among children was due to iron deficiency (Demographic & Health Survey, 2004).

The woman's nutritional status has important implications on the outcomes of the pregnancy as it affects both the mother and the unborn child physically. The demographic survey further stated that among the children with anemia, 82% had mothers with anemia. Pica is one of the factors causing anemia during pregnancy. This shows how transferable problems are related to nutrition during pregnancy.

During pregnancy, there are several physiological changes that occur in the body for example there is demand on the iron, which is in the body. The single fetus accumulates about 300mg of iron and the placenta about 70mg while the increased maternal red corpuscular mass requires an average about 290mg of iron (Taylor & Antony, 1983).

Therefore, these demands on iron during pregnancy increase the pregnant woman's need for iron and this eventually makes a woman to crave for items to compensate for the inadequate iron.

Women may understand that what they are eating is strange and odd but the compulsion is so strong that they eat it anyway (A-Z Family health encyclopedia, 1999). Most women who have pica during pregnancy feel ashamed of their habit and keep craving in secrecy (Olds, London & Ladwig, 2006). Olds et al also noted that during antenatal clinic, pregnant women receive health education on good nutrition but little emphasis is placed on the dangers of pica in pregnancy.

## **1.2 PROBLEM STATEMENT**

The demand for various food nutrients in the body of a woman increases during pregnancy due to physiological changes that take place. This is to cater for the needs of both the mother and the developing fetus. In developing countries like Malawi, the problem is exaggerated due to poverty that contributes to lack of food rich in nutrients especially for the growing girl child. Studies have shown that most women in childbearing age in developing countries have some degree of malnutrition (WHO, 2004). This condition greatly affects them when they fall pregnant. These women mostly manifest with low blood levels (anemia). These pregnant women who are anemic may develop unhealthy behaviours such as craving for non-nutritive substances (Charcoal, stones, soil, glue, newspapers, ice and ash) or excessive consumption of food substances in order to fulfill that desire.

The non-nutritive substances pose dangers on both the mother and the unborn baby as they may lead to bowel obstruction, neonatal lead poisoning, dental injury, impaired cognitive development and miscarriages. The researcher observed that most women at antenatal clinics he worked have the problem of craving for non-food substances such soil, Charcoal, maize flour, and ash. However, on routine health education given to pregnant women at antenatal clinics, he further observed that there was little emphasis on

dangers of craving for non-nutritive substances (pica). This therefore necessitated the researcher to conduct a study to explore the knowledge and perceptions of pregnant women on the dangers of pica during pregnancy at Dwangwa health centre in Kasungu district.

### **1.3 SIGNIFICANCE OF THE STUDY.**

The findings of the study will:

- Help health workers especially those working in maternity to know how much information the pregnant women have on the dangers of pica and will assist in developing appropriate interventions like policies and programmes that will address the problem of pica. This will promote good eating habits in pregnant women.
- Will also help in developing a model for antenatal clinics that emphasize on screening for pica antenatally, nutritional education to pregnant mothers, food fortification and iron supplementation during pregnancy and the training of health workers on management of pica during pregnancy.
- Will help to bring awareness to the community about the dangers of pica through radio, television and drama.
- Will be channeled into the nursing schools curriculum so that nurses are trained on the management of pica while at pre-service.

### **1.4 PURPOSE OF THE STUDY**

The purpose of the study is to explore knowledge and perceptions of pregnant women on the dangers of pica during pregnancy at Dwangwa health centre in Kasungu district.

## 1.5 OBJECTIVES OF THE STUDY

- To assess knowledge of pregnant women on craving for non nutritive substances (pica) during pregnancy.
- To explore reasons for craving for non-nutritive substances during pregnancy.
- To explore the types of non-nutritive and other substances that pregnant women crave for.
- To explore sources of information that pregnant women have on the dangers of pica during pregnancy.
- To identify the risks associated with pica during pregnancy as perceived by pregnant women.

*Add - Purpose*

## 1.6. OPERATIONAL DEFINITIONS

**Compulsion:** The strong desire that pregnant women have for non food items.

**Dangers:** The negative impact that pica has on pregnancy

**Knowledge:** One's ability to know in and out of the subject matter, in this respect it means to know more about pica in pregnancy.

**Perceptions:** Feelings towards the practice of pica.

**Pica:** A behaviour in which pregnant women eat non-food substances like soil, soap, newspaper or eating of food substances in exaggeration.

**Pregnant women:** pregnant women at any gestational age .

## **CHAPTER TWO**

### **2.0 LITERATURE REVIEW.**

#### **2.1 INTRODUCTION**

The following section will discuss literature that relates to prevalence of pica worldwide as well as in Africa, the knowledge and perceptions of pregnant women on craving habits, the dangers of pica during pregnancy, the substances that pregnant women crave for and the type of information that pregnant women receive at antenatal clinics.

Literature review is a discussion of previous relevant studies that others have conducted in a particular area of interest (Wilson, 1989). In this respect therefore, it refers to all discussions related to pica during pregnancy. This background of information helps the reader to figure out how the topic understudy relates to the previous studies in the field. This also helps the researcher to determine whether the study at hand is original or not.

#### **2.2 PREVALENCE OF PICA AMONG PREGNANT WOMEN**

A study done by Simpson et al, (2002) on low-income Mexican pregnant women found that out of 75 participants, 33(46%) reported pica behaviour. Simpson also conducted a similar study on pregnant women in California in USA and the results showed that 46 (31%) out of 150 participants reported pica behaviour. The high prevalence rates of pica in both Mexico and California indicate that pregnant women should be screened for pica and get educated about the potential effects on both the mother and the child (Simpson et al, 2002).

Another study was done by Lopez & Rita (2007) at a hospital in urban Buenos in Argentina to determine prevalence and whether there were differences in iron concentration between women with pica and control during the postpartum period. It was found out that among 324 women who were selected at randomly in postpartum period, 71 of those with low iron concentration were diagnosed as having pica, which then were

compared to a control group of 71 women without a disorder. Women with low iron concentration revealed ingesting ice (70%), dirt (18%), soap, chalk, (3%), or thread, nail polish or salt (4%) and most consumed the substances on daily basis

In a study done in Denmark to determine the prevalence of pica in more privileged Danish women whether pica is a myth or a reality to privileged women by Broby & Nybo, it was found that out of 100,000 pregnant women who were asked about pica at 25 weeks gestation only 14 (0.02%) women reported to have eaten substances that were not food. This therefore, indicates that pica is more of a myth in the privileged population than a reality (Broby, Anderson & Nybo, 2007). This may be due to availability of iron containing foods in more privileged group.

A Journal of food, Agriculture, Nutrition and Development (AJFAND, 2002), reports an observation in Ghana that among 502 pregnant women studied, 48% had pica and clay eating formed the major form. Tayie (2006) agrees that pica is prevalent in Africa. In his study in South Africa urban and rural areas, he discovered pica habit in pregnant women to be 38% and 44% respectively.

To establish the prevalence of pica habit during pregnancy and to identify substances commonly ingested and their prevalence in Kenya, Ngozi (2008) in his study found that out of 1171 antenatal women, 973 (74%) reported pica on daily basis: soft stones (odowa) 89%, soil 60% and others 9.6% and 26% without pica (Ngozi, 2008).

According to Tayie (2006) in Malawi it is unusual for a pregnant woman not to practice pica since it is used as an indicator for pregnancy. This shows that though there are no specific statistics for the prevalence of pica in Malawi, but the practice is common.

The high rates for the prevalence of pica in most parts of the world, might not only be due to the strong compulsion that women have for these non nutritive substances but rather may be due to lack of knowledge by pregnant women on the dangers of pica during pregnancy hence a need to assess women's knowledge on the subject matter.

### **2.3 KNOWLEDGE OF PREGNANT WOMEN ON THE DANGERS OF PICA DURING PREGNANCY.**

2.3 Knowledge on Pica or pregnancy

A study by Anti, Lafevre and Rayama, (2008) to determine knowledge and perceptions of pregnant women on craving habits during pregnancy, the findings showed that among anemic women 63% in Great Tunis and 80% in the South West Tunis displayed iron deficiency. The major factors were low dietary intake of ferrous and pica. It was also found that most women related anemia to the following causes: malnutrition, lack of hygiene and their heavy workload and responsibilities.

### **2.4 PERCEPTIONS OF SOIL EATING AMONG PREGNANT WOMEN**

In a study done by Geisha, Prince and Poda (1992) in Kenya to determine the perceptions of soil eating and anemia among pregnant women, it was found out that 72% of the participants ate soil regularly. The women described soil eating as a predominantly female practice with strong relations to fertility and reproduction. They made associations between soil eating and certain bodily states; pregnancy, lack of blood and illness called "Safura" which means weak blood. The women believed that the consumption of these items would solve these body problems. These women's ideas about soil eating show the significance of both social and cultural contexts where women derive their knowledge about soil eating.

Edwards, (1994) points out that in some cases pica results in weight gain of the pregnant woman if the food items craved for have high calories content but disagrees that this gives problems during delivery. The belief of easy baby delivery makes some women to look at pica as not dangerous because they feel its impact on pregnancy would be to their advantage.

### **2.34 2.5 DANGERS OF PICA DURING PREGNANCY**

An American study by Edwards, (1994) which investigated the effects of pagophagia (ingestion of large quantities of ice or freezer frost) in more than 500 pregnant African-American women. He found that 8.1% of these women consumed between one to two

cups of ice a day on 1 to 7 days a week. These pregnant mothers had significantly lower blood iron levels than mothers who didn't eat ice and it was also found that the heads of babies born to the pica mothers were smaller than babies born to mothers who didn't indulge in pagophagia.

Another dangerous effect of pica is shown by Erden, Hernandez and Iwashii (2008), who report of a case in Mexican- American family of a child who was found with high levels of lead in blood (lead poisoning) due to pica of the mother who craved for soil during pregnancy. Lead is fatal to babies.

A study done by Nyaruhucha (2009) in Dar es slaam in Tanzania to determine the effects of craving during pregnancy found out that among 204 pregnant women, 82.8% reported experiencing nausea and vomiting. Of these women, 43.2% experienced severe nausea, 9.5% experienced severe vomiting alone and 3.5% experienced both nausea and vomiting. The food craved for most included meat (23.3%), mangoes (22.7%), yoghurt (20%), oranges (20%), plantains (15.3%) and fish (30%).

Rose (2009) reports that the carcinogens that women get through craving the cigarette butts increase the risk for cervical cancer and colon cancer. She further said that other effects of pica include bowel obstruction due to ingestion of hard materials like hair, wires, stones and sand and that those who practice pica suffer emotionally. He further stated that many feel ashamed of their behaviour and keep craving in secret.

→ *Handwritten note: The prevalence of pica among pregnant women is high and it is a public health problem.*

## 2.7 CONCLUSION

From the literature review, the findings indicate that several studies have been conducted on pica. For example knowledge and perception bout pica, prevalence of pica amongst pregnant women, dangers of pica to the pregnant women and their unborn babies.

Most literature has revealed that craving for non-nutritive food substances and overeating can lead to obstruction, lead poisoning, and dental injuries, affecting mental and physical development of the unborn baby. However literature recommends that women should have good nutrition prior to pregnancy, pregnant women should have thorough screening

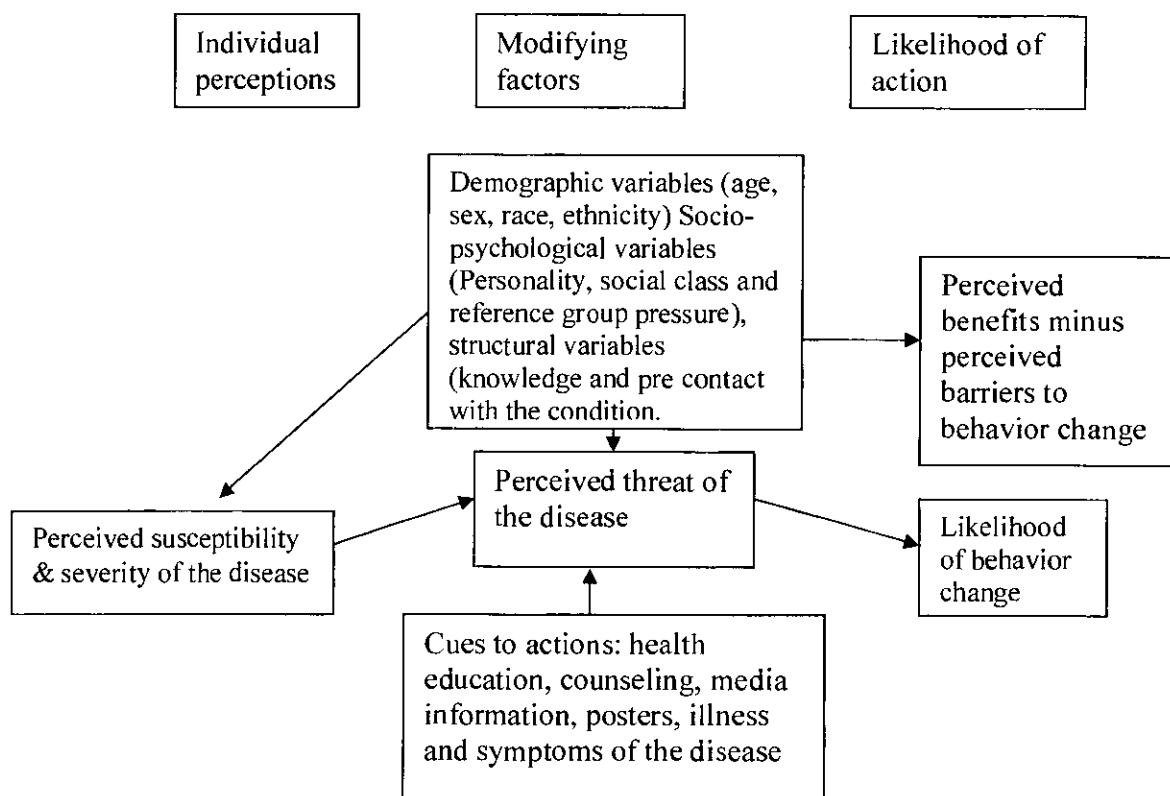
for pica during pregnancy, and advise on good nutrition behaviour. Efforts to identify literature for specific management of pregnant women with pica proved unsuccessful.

## 2.8. CONCEPTUAL FRAME WORK

### 2.8.1. INTRODUCTION

This section will discuss the description of the model adopted in the study, which includes its core assumptions, a diagrammatic presentation and its application to the study. Conceptual framework is defined as an abstract, logical structure of meaning that guides the development of the study and enables the researchers to relate the findings to the body under study (Burns & Grove, 2001). The model, which has been adopted in this study, is Health Belief Model (HBM).

### 2.8.2 THE HEALTH BELIEF MODEL



*Reference: Clemens S.M, McGuire L.S & Eigsit D.G. (2002). Comprehensive Community Health Nursing,(6<sup>th</sup> Ed) Mosby.St Louis.*

### 2.8.3. DESCRIPTION OF HEALTH BELIEF MODEL (HBM) AND HOW IT HAS BEEN USED IN THE STUDY.

Health belief model (HBM) is a psychological model that attempts to explain and predict health behaviors through focusing on the attitudes and beliefs of individuals. The model explains that individuals perceived susceptibility and perceived severity of the disease determines a perceived threat that will increase likelihood of the preventive actions or one's participation in the health interventions (Clemen-stone et al, 2002). Health belief model is useful in this study, as it will assist in explaining health promoting behaviours that are triggered by an interest in preventing the condition, pica. The HBM was first developed in the 1950s by social psychologists Hochbaum, Rosenstock and Kegels working in the United States of America public health services (Stretcher & Rosenstock, 1997).

The core assumptions in the HBM is based on the understanding that a person will take a health related action if that person feels that a negative health condition can be avoided, that the person has a positive expectations that by taking a recommended action, she/he will avoid a negative health condition and finally that the person can successfully take a recommended health action (Clemen-stone et al, 2002).

Rosenstock et al (1997) spelled out the HBM in the four constructs representing the perceived threat and net benefits thus: Perceived susceptibility, perceived severity, perceived benefits and perceived barriers. ( — )

#### PERCEIVED SUSCEPTIBILITY.

This is a person's opinion of chances of getting a particular condition. This is based on whether someone thinks is in the population at risk or that he has personal features that make him/her susceptible to a condition. This will determine whether someone will take health related actions or not. In this study, it refers to an individual's opinion of developing conditions that come due to pica such as bowel obstruction, anemia, infections, diarrhoea, low birth weights and miscarriages in pregnancies. This will determine one's stand on taking the preventive actions towards pica such as eating nutritive foods that will not have harmful effects on the women.

### **PERCEIVED SEVERITY**

This is one's opinion of how serious a condition and its consequences are. If an individual feels that a certain condition is very serious, he will be able to think of ways to avoid the condition. Likewise, when an individual feels that the conditions that pica brings in pregnancy are so severe and very serious, she is likely to perceive the threat of the condition and would take the appropriate measures to prevent the practice.

### **PERCEIVED BENEFITS**

This is an individual's belief in the efficacy of the advised action to reduce risk or seriousness of the impact. When one sees that the possible available solution will solve the problem at hand, he/she is likely to follow the solution than a solution that seems not working. When the pregnant women believe that by avoiding pica in pregnancy, they benefit a lot together with the unborn babies, they are likely to follow the advice to stop craving during pregnancy.

### **PERCEIVED BARRIERS**

This is one's opinion of the tangible and psychological costs of the advised action. When an individual feels that action to good health has a lot of barriers, one is unlikely to pursue the action. In respect to the study, pregnant women will weigh the consequences of stopping pica habit and how much will the suggested preventive measures cost them for example fighting against a strong compulsion to crave or how easily would suggested food items be available to substitute those craved for. These barriers would make the women not to abide to the preventive actions.

### **MODIFYING FACTORS.**

An individual's demographic variables (age, sex, race and ethnicity), socio-psychological variables (personality, social class and reference group pressure) and structural variables (knowledge prior contact of the condition) have an impact on one's development of the condition. This is indeed true with the development of pica in pregnant because.

## **CUES TO ACTION**

Health education, counseling, media information, posters, advice from professionals and symptoms of the illness will help people to perceive the threat of a particular disease.

The provision of information to pregnant women on the dangers of pica during pregnancy through media, counseling, posters and reminders by health workers will equip these women with information on the dangers of pica as such the women will be able to perceive the threat of pica. This too will determine the likelihood of behavioural change toward pica practice during pregnancy.

## **2.8.4 CONCLUSION**

The Health Belief Model is useful in this study as it depicts the relationship between women's motivation to take preventive measures upon seeing the threat of effects of pica in pregnancy. It is clearly explaining the concepts that would help pregnant women to seek preventive measure of pica in pregnancy and hence promote good eating habits during pregnancy which will results into good outcome of the mother and the baby. This model has assisted to relate the concepts in the study.

## CHAPTER THREE

### 3.0 STUDY METHODOLOGY

#### 3.1 INTRODUCTION

This section will describe the methodology used in the study. Methodology refers to an overall plan for obtaining information that will answer the question under study and is used to handle some difficulties encountered during the research process (Polit & Hungler, 2001). It gives the researcher a guideline to follow when obtaining information from the research participants. It will consist of study design, study setting, study population that include the target population, sample and sampling technique and the inclusion criteria of the study subjects.

#### 3.2 STUDY DESIGN

The researcher intends to use a <sup>descriptive</sup> quantitative design in the study. According to Fain (1999), quantitative researcher's measure and analyze the casual relationships between variables at a particular time. The advantages of using quantitative design are that the study is objective and that the researcher studies a topic without having preconceptions or preference about the outcomes of the subject matter (Burns & Grove, 2005). However, quantitative approach may not get in-depth information about the topic under study. This type of design has been chosen to be able to measure the level of knowledge that pregnant women have on the dangers of pica in pregnancy and be able to present the results in a statistical form that will include the use of graphs, bar charts, frequencies, means, mode, median and pie charts.

#### 3.3 STUDY SETTING

The researcher intends to conduct this study at Dwangwa Health Centre in Kasungu District. This site has been chosen because it offers Antenatal services where pregnant women access various antenatal services and therefore this would be an appropriate place to meet the desired population, the pregnant women.

### **3.4 STUDY POPULATION.**

#### **3.4.1 TARGET POPULATION**

The target population consists of total membership of a defined set of objects (people, animals, plants etc) from which the study subjects are selected and to whom the data will be generalized (Abdellah & Eugene, 1986). The study target population in this study will be pregnant women attending antenatal clinic at Dwangwa Health Centre.

### **3.5 SAMPLE AND SAMPLING TECHNIQUE.**

#### **3.5.1 SAMPLE SIZE.**

Sampling is a process of selecting a portion of a target population for the study (Polit & Hungler, 1991). The researcher wishes to recruit thirty pregnant women for the study. Pregnant women will be chosen for the study because they are the one's that crave for non-nutritive substances in pregnancy.

#### **3.5.2 SAMPLING TECHNIQUE.**

The women who will participate in the study will be chosen by random sampling. Random sampling is the selection criteria in which every population member is given an equal opportunity to be chosen and that the characteristics of the chosen population members represent the whole population (Polit & Hungler, 1991). However, random sampling may sometimes make the researcher to get a sample that will not give appropriate responses and may not truly represent the whole population. This method has been chosen to ensure that every member of the population is given equal opportunity to be chosen and that it will help to generalize the results of the findings. The numbers will be written on pieces of paper and the women will pick from the collection of the papers. The women who will pick numbers from one to thirty will be taken as participants of the study.

### **3.5.3 INCLUSION CRITERIA**

An inclusion criterion outlines who is eligible to participate in the study and what characteristics qualify one to be the subject in a particular study. The participants in this study will be pregnant women at any gestation period, of ages from 20 to 35 years, those who will be attending antenatal clinic at Dwangwa Health Centre, those that will consent to participate in the study voluntarily and finally women of any gravidity or parity.

### **3.6 DATA COLLECTION**

This is the way in which the researcher collects data e.g. observation, questioning, interviewing and measurements (Burns & Grove, 2005). Data collection will be done using a semi-structured questionnaire, which will be administered by the researcher. A questionnaire is a data collection tool that has a series of questions that are given to the respondents through post, email, telephone or being administered by the researcher (Seaman, 1982). The advantages of a questionnaire include the provision of uniform responses, high response rate, covers a wide range of respondents and that there is less stress put on respondents (Fain, 1982).

A semi-structured questionnaire consists of both open ended and closed questions. The advantage of using a semi-structured questionnaire is that it provides respondents with an opportunity to express situations in their own words while at the same time answering closed questions. The questions will be formulated in English and be translated into Chichewa version for easy communication with subjects that might find problems with English and that Chichewa is commonly used language by many people hence making communication easy. The semi-structured questionnaire will include demographic data of participants, knowledge of pregnant women on the dangers of pica during pregnancy and women's perceptions on the dangers of pica.

### **3.7 DATA ANALYSIS**

This is a process by which the researcher summarizes and describes data and if possible makes inferences from the study sample to the population from which the sample was drawn (Seaman, 1982). Data will be prepared statistically thus the use of pie charts, frequency tables, bar charts and their interpretation. Verbal responses will be coded into numerical forms for statistical results presentations. A statistical Package for the Social Sciences (SPSS) will be used to analyze data because its manual contains detailed and clearly written instructions and that the package offers a range of statistical procedures with explicit instructions hence easy use (Burns et al, 2005).

### **3.8 PILOT STUDY**

This is a small-scale dress rehearsal that proceeds as if it were the actual study except for the fact that subjects who will participate in the actual study are not used in the pilot study (Seaman, 1987). The researcher will do a pilot study prior to the actual study to check the validity and reliability of the data collecting tool, to rectify any ambiguity with the questions in the questionnaire and to correct all the mistakes before conducting the actual study. A total of 3 subjects will be used in the pilot study.

### **3.9 ETHICAL CONSIDERATIONS**

A good research conforms to moral, ethical and legal standards of scientific inquiry and that any research that is harmful, violates the ethical code of nursing and may be illegal (Seaman, 1982). Before conducting the study, an authorization will be sought from the Kamuzu College of Nursing Research, Ethics and Publications Committee, Kasungu District Hospital Officer (DHO), Kasungu District Commissioner (DC) and the clinic in charge of Dwangwa Health Centre.

The participants will be informed about the study, its objectives and will be asked to sign a consent form. The information got from the clients will be kept confidentially, kept in

locked place. During the study, privacy will be maintained by administering the questionnaire in a private room. The participants will be free to pull out of the study any time they wish without being threatened or that their medical care being affected in one way or another. The participation of the subjects will be kept anonymous by not writing the names of the subjects on questionnaires rather numbers or codes will be used. The researcher will explain the risks and benefits of the study to the participants.

The risks include psychological stress as most women would not feel comfortable to talk about reproductive issues with a person they don't know much while there would be no direct benefit for the participants, however, the benefits will be that of contributing to information that will be used to improve the services for pregnant women who have pica. The researcher will counsel those participants that will be psychologically affected with this research and proper arrangements will be made to refer such participants to trained counselors for counseling where necessary.

**3.1.0 TIME FRAME OF THE RESEARCH STUDY (ACTIVITY AGAINST PERIOD IN MONTHS).**

2009

ACTIVITY	APRIL	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV
PROBLEM IDENTIFICATION								
LITERATURE REVIEW								
PROPOSAL WRITING & SUBMISSION								
PILOT STUDY & CORRECTION OF QUESTIONNAIRE								
DATA COLLECTION								
DATA ANALYSIS								
REPORT WRITING								
SUBMITTING DISERTATION								
RESULTS DISSEMINATON								

### 3.1.1 BUDGET FOR THE STUDY

ITEM	COSST/ITEM	NO. OF ITEMS	TOTAL COST
<b>STATIONERY</b>			
Flash Disk	K5000.00 each	1	K5000.00
Ball Pens	K 25.00 each	5	K125.00
Pencils	K20.00 each	2	K40.00
Rubber	K30.00 each	1	K30.00
Envelops (small size)	K20.00 each	5	K100.00
Reams of paper	K850 each	3	K2550.00
Files	K400.00	2	K800.00
Pencil sharpener	K50.00 each	1	K50.00
Note pads	K250.00 each	2	K500.00
Stapling machine	K400.00 each	1	K400.00
Tipex	K350.00 each	1	K350.00
A4 Envelops	K50.00 each	3	K150.00
<b>PRINTING SERVICES</b>			
Printing & binding of Proposal.	K760.00 each	3	K2300.00
Dissertation	K900.00 each	4	K3600.00
<b>Internet services</b>			K1000.00
<b>Transport to Kasungu</b>			K2000.00
<b>Subsistence allowance</b>			K8000.00
<b>Communication (Phone)</b>			K1000.00
<b>Contingency of 10%</b>			K2299.50
		<b>GRAND TOTAL</b>	<b>K30294.50</b>

### **3.1.2 JUSTIFICATION OF THE BUDGET**

The stationery stated in the budget will be used for writing of rough work, printing, and for storing and transferring of information. The other money will be used for printing services of proposal and dissertation copies and binding of the copies. The researcher will need transport money to go to Kasungu to collect data for the study. There will also be money needed to buy airtime to make calls to the participants and the research supervisor. Subsistence allowance will be used by the researcher to buy food during the data collection. The 10% money kept as contingency will be used to cover in case the prices of materials rise due to inflation of Kwacha.

### **3.1.3 LIMITATIONS OF THE STUDY**

Time for preparations for the study was not enough especially that as a student, the researcher has also been committed to other academic work that equally put a strain on the time schedule.

Another limitation is lack of funds for effective carrying out of the study. The researcher needed to train the personnel to administer the questionnaires so as to target a larger population sample in order to get reliable results that would comfortably be generalized to the whole population.

### **3.14 PLANS FOR DISSEMINATION OF THE RESULTS**

When the study is completed, the reports will be sent to the following: Dwangwa Health Centre, Kasungu District Officer, Kasungu District Commissioner and to Kamuzu College of Nursing in partial fulfillment for my Bachelor of Science degree award. Furthermore, the findings will be disseminated at local and international conferences/ seminars and through publication.

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## 5.0 APPENDICES

### APPENDIX 1. A SEMI-STRUCTURED QUESTIONNAIRE ON KNOWLEDGE & PERCEPTIONS OF PREGNANT WOMEN ON DANGERS OF PICA DURING PREGNANCY

TITLE: A study to assess knowledge and perceptions of pregnant women on the dangers of pica during pregnancy at Dwangwa Health Centre in Kasungu district.

#### SECTION A

##### DEMOGRAPHIC DATA

1. Age

- (a) 16-21 [ ]
- (b) 22-27 [ ]
- (c) 28-33 [ ]
- (d) 34-39 [ ]
- (e) 40-45 [ ]

2. Marital Status

- (a) Married [ ]
- (b) Single [ ]
- (c) Divorced [ ]
- (d) Widowed [ ]

3. Number of children

- (a) One [ ]
- (b) Two [ ]
- (c) Three [ ]
- (d) Four [ ]

Others specify-----

4. Religion. (i) Christianity [ ]
- (a) Roman Catholic [ ]
  - (b) Seventh Day [ ]
  - (c) CCAP [ ]
  - (d) Assemblies of God [ ]

Others specify-----

- (ii) Islam [ ]

5. Tribe.

- (e) Chewa [ ]
- (f) Tumbuka [ ]
- (g) Lomwe [ ]
- (h) Yao [ ]
- (i) Sena [ ]

Others specify-----

6. Education

- (j) Std 1-3 [ ]
- (k) Std 4-6 [ ]
- (l) Std 7-8 [ ]
- (m) Form 1-2 [ ]
- (n) Form 3-4 [ ]

Others specify-----

1. Occupation

- a. Farming [ ]
- b. Business [ ]
- c. Employed [ ]

Others specify-----

**SECTION B: KNOWLEDGE & PERCEPTIONS ON DANGERS OF PICA**

1. When women are pregnant, do they have eating problems?

(a) Yes [ ]

(b) No [ ]

2. If yes, what are these problems? Mention-----  
-----  
-----

3. Do you think craving for non nutritive foods or exaggerated liking for some foods is one of the problems?

(a) Yes [ ]

(b) No [ ]

4. Explain to me more about pica  
-----  
-----

5. How many times have you been pregnant in your life?

(a) First pregnancy [ ]

(b) 2 times [ ]

(c) 3 times [ ]

(d) 4 times [ ]

Others specify-----

6. Did you have pica with any of your previous pregnancies?

(a) Yes [ ]

(b) No [ ]

If yes, what were the items you craved for?

(a) Clay soil [ ]

(b) Stones [ ]

(c) Fingernails [ ]

(d) Green mangoes [ ]

(e) Papers [ ]

(f) Insects [ ]

Others specify-----

7. How often did you crave for these items?

(a) Several times a day [ ]

(b) Once a day [ ]

(c) Weekly [ ]

(d) Monthly [ ]

8. Apart from you, have you ever seen other pregnant women with pica?

(a) Yes [ ]

(b) No [ ]

If yes, what were the items they crave for? -----

-----

9. Does your culture allow women to practice pica in pregnancy? If no, explain why-

-----

-----

10. What do you think are the dangers of pica during pregnancy? Explain-----

-----

-----

11. Where do you get education on nutrition during pregnancy

(a) Hospital [ ]

(b) TBAs [ ]

(c) Friends [ ]

Others specify-----

12. Does the education include pica in pregnancy?

(a) Yes [ ]

(b) No [ ]

10. Do you think you have enough information on pica?

(a) Yes [ ]

(b) No [ ]

11. Do you feel pregnant women can prevent pica during pregnancy?

(c) Yes [ ]

(d) No [ ]

12. If you had developed pica today what would you do?-----  
-----

13. If you crave, what do you think are the reasons that make you crave?

(a) Strong compulsion [ ]

(b) Imitating friends [ ]

(c) Don't know. [ ]

Others specify-----  
-----

14. What are your feelings towards pica habit in pregnancy? -----  
-----

15. Do you think pica has an impact on the pregnancy outcomes?

a. Yes [ ]

b. No [ ]

If yes, explain-----  
-----

16. What would be your recommendation for the management of women who crave  
during pregnancy-----  
-----

**APPENDIX 2. MNDANDANDA WA MAFUNSO MCHICHEWA KAFUKUFUKU WOFUNA KUDZIWA KUTI AMAI APAKATI AMADZIWAPO CHIYANI KOMANSO MALINGALIRO AWO NDI WOTANI PA ZAKUWOPSA KWA KUDYA ZAKUDYA ZOPANDA PAKE KOMWE KUMABWERA AMAI AMBIRI AKAKHALA NDI PAKATI.”**

**GAWO LOYAMBA.**

**MAFUNSO A ZAMBIRI YA MUNTHU**

1. Muli ndi zaka zingati?

- (a) 16-21 [ ]
- (b) 22-27 [ ]
- (c) 28-33 [ ]
- (d) 34-39 [ ]
- (e) 40-44 [ ]

2. Kodi muli pa banja?

- (a) Eya [ ]
- (b) Ayi. [ ]
- (c) mamuna anamwalira [ ]
- (d) Ndinasiyana ndi mamuna [ ]

3. Muli ndi ana angati?

- (a) M’modzi [ ]
- (b) Awiri [ ]
- (c) Atatu [ ]
- (d) Anai [ ]

4. Ndinu achipembedzo chanji?

- (l) Chikhirisitu [ ]
  - (a) Katolika [ ]
  - (b) Seventh day [ ]
  - (c) CCAP [ ]
  - (d) Assemblies of God [ ]

- (e) Last church [ ]  
(ii) Chisilamu [ ]

Zina Tchulani-----

5. Ndinu mtundu wanji?

- (a) Chewa [ ]  
(b) Lomwe [ ]  
(c) Tumbuka [ ]  
(d) Yao [ ]

Zina Tchulani-----

6. Kodi sukulu munafika nayo pati?

- d. Std1-3 [ ]  
e. Std 4-6 [ ]  
f. Std7-8 [ ]  
g. Form 1-2 [ ]  
h. Form 3-4 [ ]

Zina tchulani-----

2. Mumagwira ntchito yanji ?

- c. Yaulimi [ ]  
d. Yogulitsa malonda [ ]  
e. Yolembedwa patikiti [ ]

### GAWO LACHIWIRI

1. Kodi amai akakhala ndi pakati amakhala ndi mavuto a madyedwe ?

- (a) Eya [ ]  
(b) Ayi [ ]

2. Ngati yankho ndi eya, mavuto ake ndi monga ngati ati ? tchulani-----

3. Kodi mukuganiza kuti khalidwe lomadya zinthu zomwe siziri zakudya ndi limodzi mwa mavuto amene amkumana nalo amai apakati.

- (a) Eya [ ]  
(b) Ayi [ ]

4. Ngati kudya zinthu zimenezi ndi limodzi mwamavuto amenewa, tafotozani kuti mumadziwapo chiyani za khalidweli ?-----  
-----  
-----

5. Kodi mimbayi ndiyachingati?

- (a) Yoyamba [ ]
- (b) Yachiwiri [ ]
- (c) Yachitatu [ ]
- (d) Yachinayi [ ]

Zina Tchulani-----

6. Kodi munakhalapo ndi khalidweli lomadya zinthu zomwe siziri zakudya?

- (a) Eya [ ]
- (b) Ayi [ ]

Ngati yankho lanu pamwambapa ndi eya, mumadya zinthu zANJI?

- (a) Dothi [ ]
- (b) Miyala [ ]
- (c) Zikhadabo [ ]
- (d) Timango tatiwisi [ ]
- (e) Tizilombo towuluka. [ ]

Zina Tchulani-----

7. Kupatula inuyo, kodi munawonapo amai ena apakati ali ndi khalidwe limeneli?

- (a) Eya [ ]
- (b) Ayi [ ]

Ngati yankho lanu ndi eya, amadya zinthu zANJI?-----  
-----

8. Kodi chikhalidwe chanu chimalora amai kukhala ndi khalidwe lomadya zinthu zomwe siziri zakudya akakhala ndi pakati? Fotokozani-----  
-----

9. Kodi mukuganiza kuti kuwopsa kwakudya zinthu zomwe siziri zakudya amai akakhala ndi pakati ndi kotani? Fotokozani-----

-----  
-----  
10. Kodi maphunziro a zakudya amai akakhala ndi pakati mumawapeza kuti?

(a) Kuchipatala [ ]

(b) Kwa azamba [ ]

(c) Kwa anzthu [ ]

Kwina Tchulani-----

11. Kodi maphunziro amene mumalandirawa amakkambapo za khalidwe lakudya zinthu zosiyanasiyana zomwe amai apakati amadya?

(a) Eya [ ]

(b) Ayi [ ]

12. Kodi mukuwona kuti mwalandira uphungu wokwanira pa za khalidwe limeneli lomwe amai apakati amakhala nalo?

(a) Eya [ ]

(b) Ayi [ ]

13. Ngati muli ndi khalide lomadya zinthunzi, mukuganiza kuti ndichifukwa chiyani mumadya zinthuzi?

(a) Chilakolako [ ]

(b) Kutengera amnzanga [ ]

(a) Sindikudziwa [ ]

14. Kodi mukuganiza kuti amai apakati angapewe khalidwe lomadya zinthu zomwe siziri zakudya akakhala ndi pakati?

(a) Eya [ ]

(b) Ayi [ ]

15. Kodi panopa mutati mwagwidwa ndi chilakolako chofuna kudya zinthu imenezi mungachite chiyani? Fotokozani-----

-----  
-----  
16. Kodi maganizo anu ndiwotani pa khalidwe limeneli mwa amai apakati? Fotokozani--

-----  
-----

17. Mukuganiza kuti kudya zinthu zomwe siziri zakudya kungabweretse mavuto ena aliwonse mwa amai apakati?

(a) Eya            [ ]

(b) Ayi            [ ]

Ngati yanhko lanu pamwambapa ndi eya, fotozani-----

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**APPENDIX 3. A LETTER REQUESTING FOR PERMISSION TO CONDUCT A STUDY**

University of Malawi,  
Kamuzu College of Nursing,  
P/bag 1,  
Lilongwe.  
**June 12, 2009.**

**The Chairperson,**  
KCN Research & Publications Committee,  
Private Bag 1,  
Lilongwe.

**Dear Sir/ Madam,**

**APPLICATION FOR PERMISSION TO CONDUCT A RESEARCH STUDY AT  
DWANGWA HEALTH CENTRE.**

My name is Sylvester Zimba, I am a fourth year student at Kamuzu College of Nursing pursuing a Bachelor of Science Degree in Nursing. In partial fulfillment for the award of the degree in nursing, am required to conduct a research study. My research topic is “**A study to assess knowledge and perceptions of pregnant women on the dangers of pica during pregnancy at Dwangwa Health Centre**”. I intend to conduct the study at Dwangwa Health Centre in the months of August and September, 2009.

The results of the study will assist health workers and policy makers to develop interventions and programmes that will address nutrition problems that pregnant women have during pregnancy. I would like to request for an approval to conduct this study at Dwangwa Health Centre in Kasungu district.

Your consideration will be greatly appreciated,  
Yours Faithfully,

**Mr. Sylvester Zimba (Principal Investigator)**

**Mrs. M. Chirwa. (Supervisor)**

**APPENDIX 4. A LETTER OF REQUEST TO KASUNGU DHO TO CONDUCT A STUDY.**

University of Malawi,  
Kamuzu College of Nursing,  
P/bag 1,  
Lilongwe.  
June 12, 2009.

The District Health Officer,  
Kasungu District Hospital,  
P.O Box 19,  
Kasungu.

Dear Sir/Madam,

**A REQUEST TO CONDUCT A STUDY AT DWANGWA HEALTH CENTRE**

My name is Sylvester Zimba, I am a fourth year student at Kamuzu College of Nursing pursuing a Bachelor of Science Degree in Nursing. In partial fulfillment for the award of the degree, am supposed to conduct a research study. I intend to carry out this study at Dwangwa health centre in the months of August and September. My study topic is “**A study to assess knowledge and perceptions of pregnant women on the dangers of pica during pregnancy**”. The results of the study will assist health workers and policy makers to develop interventions and programmes that will address nutrition problems that pregnant women face during pregnancy.

I would like to request for your permission to conduct this study at Dwangwa H/ Centre in Kasungu district.

Looking forward to your favorable reply,

Yours Faithfully,

**Mr Sylvester Zimba (Principal Investigator)**

**Mrs. M Chirwa (Supervisor)**

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**APPENDIX 5.A LETTER OF PERMISSION TO KASUNGU DC TO CONDUCT A STUDY**

University of Malawi,  
Kamuzu College of Nursing,  
P/bag 1,  
Lilongwe,  
June 12, 2009.

**The District Commissioner,**  
Kasungu District Assembly,  
P.O Box 249,  
Kasungu.

Dear Sir/Madam,

**APPLICATION FOR PERMISSION TO CONDUCT A STUDY AT DWANGWA  
HEALTH CENTRE**

My name is Sylvester Zimba, I am a fourth year student at Kamuzu College of Nursing pursuing a Bachelor of Science Degree in Nursing. Am supposed to conduct a research study and submit to the college in partial fulfillment for the award of the degree. My research topic is **“A study to assess knowledge and perceptions of pregnant women on the dangers of pica during pregnancy at Dwangwa health centre”**.

The results of the study will assist health workers and policy makers to develop interventions and programmes that will address nutrition problems that pregnant women face during pregnancy. I would like to request for your permission to conduct this study at this Dwangwa Health Centre which is scheduled in the months of August and September, 2009.

Your consideration will be greatly appreciated,

Yours Faithfully,

**Mr Sylvester Zimba (Principal Investigator)**

**Mrs. M Chirwa (Supervisor)**

**APPENDIX 6. A LETTER TO DWANGWA H/ CENTRE OF REQUESTING PERMISSION TO CONDUCT A STUDY**

University of Malawi,  
Kamuzu College of Nursing,  
P/bag 1,  
Lilongwe,  
June 12, 2009.

**The Clinic In- charge,**  
Dwangwa Health Centre,  
P.O Box 165,  
Kasungu.

**Dear Sir/Madam,**

**APPLICATION FOR PERMISSION TO CONDUCT A RESEARCH STUDY AT YOUR INTITUTION**

My name is Sylvester Zimba, I am a fourth year student at Kamuzu College of Nursing pursuing a Bachelor of Science Degree in Nursing. As a requirement, am supposed to conduct a research study and submit to the college for the award of the degree. My research topic is **“A study to assess knowledge and perceptions of pregnant women on the dangers of pica during pregnancy at Dwangwa health centre”**. I intend to conduct the study in the months of August and September, 2009. I chose Dwangwa Health Centre because you offer antenatal care services that will enable me to meet the targeted population, the pregnant women.

I would therefore, like to ask for your permission to conduct this study at your institution.

Your consideration will be greatly appreciated,

Yours Faithfully,

**Mr. Sylvester Zimba.** (Principal Investigator)

**Mrs. M Chirwa** (Supervisor).

**APPENDIX 7. INFORMED CONSENT**

**Dear Participant,**

My name is Sylvester Zimba; I am a fourth year student at Kamuzu College of Nursing pursuing a Bachelor of Science Degree in Nursing. As a requirement, am supposed to conduct a research study and submit to the college for the award of the degree. My research topic is **“A study to assess knowledge and perceptions of pregnant women on the dangers of pica during pregnancy at Dwangwa health centre”**.

You have been chosen to participate in the study. Please note that participation in this study is voluntary and that you can pull out from the study any time. If you decide to pull out from the study or refuse to answer any question, the care you will receive from this institution will not be affected in any other way. For more details please contact me on **0999425724**

All the information will be kept confidentially and your name will not be written on the questionnaire to ensure anonymity. There are no known risks associated with the study however the study will help health workers to develop policies, interventions and programmes that will address nutrition problems that women face during pregnancy hence you will benefit as one of people who access medical care from the health institutions. Your duty in the study will be answering questions that will be administered by the investigator. Your participation in the study indicates that you have fully understood the details of the study and that you have given consent. The study has been thoroughly explained to me and I have understood the concepts.

I..... **agree** to take part in the study

I.....**disagree** to take part in the study.

**Participant.....Signature.....Date.....Place.....**

**Witness..... Signature .....Date.....Place.....**

**APPENDIX8. KALATA YOPEMPHA CHILLEZO CHOLOWA NAWO MUKAFUKUFUKU**

Mayi,

**KALATA YOPEMPHA CHILOLEZO KUTI MULOWE NAWO MU  
KAFUKUFUKU**

Dzina langa ndine Sylvester Zimba, wophunzira wa chaka cha chinayi pa sukulu yawukachenjede ya za wunamwino yalembedwa pamwambapayi. Pokwaniritsa maphunziro athu pasukuluyi, timayenekera kupanga kafukufuku. Mutu wa kafukufuku wanga ndi: **“Kafukufuku wofuna kudziwa kuti amai apakati amadziwapo chiyani komanso malingaliro awo ndi wotani pa zakuwopsa kwa kudya zakudya zopanda pake komwe kumabwera amai ambiri akakhala ndi pakati.”** Ngati muli mafunso mutha kuyimba lamya pa 0999425724.

Inuyo mwasankhidwa kuti mutengapo mbali pakafukufuku ameneyu. Muli ndi ufulu wokana kapenanso kutuluka mukafukufukuyu nthawi iriyonse mungafune mosakakamizidwa potero sizidasantha chithandizo chomwe mumalandira pa chipatala pano. Muliwodziwitsidwanso kuti zonse zomwe mutadzandiwuze mukafukufukuyu zidzakhala za chinsinsi posawuza munthu dera ayi komanso simudzalembedwa dzina pakawundula wina aliyense ayi.

Kafukufukuyu athandiza anthu ogwira nchito ku chipatala kuti apange njira zothana ndi mavuto omwe amadza pokhudzana ndi za madyedwe mwa amai oyembekezera kotero kuti ndi wa phindu kwa inunso ngati munthu m’modzi amene mumalandira chithandizo kuno ku chipatala.

Ndichikhulupiliro changa kuti potengapo mbali ndiye kuti mwanvetsa bwino za kafukufukuyi choncho muli wolandiridwa mu kafukufuku ameneyu.

Zikomo potengapo mbali.