



**THE UNIVERSITY OF MALAWI  
KAMUZU COLLEGE OF NURSING**

**KNOWLEDGE AND PERCEPTIONS OF PREGNANT WOMEN ON THE  
DANGERS OF PICA  
DURING PREGNANCY AT DWANGWA HEALTH CENTER IN KASUNGU  
DISTRICT**

**A DISSERTATION SUBMITTED TO THE FACULTY OF NURSING IN PARTIAL  
FULFILLMENT OF THE REQUIREMENT FOR THE AWARD OF BACHELOR  
OF SCIENCE DEGREE IN NURSING**

**SUBMITTED BY :SYLVESTER DAMALEKANI ZIMBA**

**SUPERVISED BY : MRS. M. CHIRWA**

2009

**DECLARATION**

I declare that this research study and its results are a product of my own work and it has neither been presented for the award of degree anywhere else nor that someone is currently presenting it for the same purpose.

**Principle Investigator:** Mr. Sylvester Damalekani Zimba

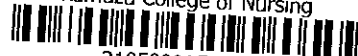
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**Supervisor:** Mrs. M. Chirwa

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## DEDICATION

This research study is dedicated to my mother and my father Mr. and Mrs. Damalekani Zimba , my sister Mphatso and my brother Prince who offered me support and encouragements throughout my four years of my study. My study would have not been a success if it were not for the support of these people.

## ACKNOWLEDGEMENTS

Firstly, I thank my research supervisor, Mrs. M.Chirwa, for the support and guidance she gave me throughout the writing of this document. I also extend my thanks to the Kamuzu College of Nursing library staff for the assistance in the searching for information on internet.

This work would not have been complete if it were not for the support of my family members specifically Mphatso and Prince who offered financial and psychological support.

Greatly, I thank God for the gift of life, good health and my success in academic life.

Lastly, I thank everybody who assisted me in doing this work yet I have not mentioned their names here, May God Bless you abundantly.

## **ABSTRACT**

### **Introduction**

Pica is a bizarre craving for and compulsive, secret chewing of food or ingestion of non-food substances that usually cause problems in pregnancy such as bowel obstruction, dental injury, miscarriages, severe nausea and can also affect fetal development. Pica occurs as a result of physiological changes that take place in pregnant women.

### **Purpose**

The purpose of the study was to explore knowledge and perceptions of pregnant women on the dangers of pica during pregnancy.

### **Methodology**

The researcher used a descriptive quantitative design and data collection was done using semi-structured questionnaire which was administered by the researcher. To ensure reliability of the results, a pilot study was done and short falls of the data collecting tool were corrected. Thirty pregnant women attending antenatal clinic at Dwangwa Health Center in Kasungu District were recruited as study participants through random sampling. Health Belief Model (HBM) developed by Rosenstock and Hochbaum guided the study. The researcher took into consideration all ethical issues

### **Data Analysis**

The data collected from the participants was analyzed using word excel package.

### **Findings**

The findings of the study are being disseminated through written reports to Kamuzu College of Nursing libraries, Kasungu District Hospital, Dwangwa of Health Center and to the Ministry of Health. The findings will also be disseminated at local and international seminars.

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## LIST OF ABBREVIATIONS

- AJFAND: A Journal of Food, Agriculture, Nutrition and Development.
- ANC : Antenatal Clinic
- 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 aimed at exploring women's knowledge and perceptions on the dangers of pica during pregnancy. The study participants targeted were pregnant women who were attending antenatal clinic at Dwangwa health centre who participate in the study with informed consent. The researcher has adopted a descriptive quantitative design for the study.

### **1.1.1 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.
- 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.
- Help to bring awareness to the community about the dangers of pica through radio, television and drama.
- 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 was 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 explore pregnant women's perceptions towards craving habit (pica).

#### 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 under study 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 ABOUT PICA AMONGST PREGNANT WOMEN**

Landman and Jacqueline, (2006) asked 47 pregnant women on their knowledge about pica at University hospital in West Indies. The results showed that 62% had heard about pica while 53% pregnant women had seen other pregnant women who ate a variety of unusual items.

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. It was also found that most women related anemia to the following causes: malnutrition, lack of hygiene and their heavy work load and responsibilities. Few showed the relationship between pica and anemia.

### **2.4 PERCEPTIONS ON PICA 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 perceived 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 perceive pica as not dangerous because they feel its impact on pregnancy would be to their advantage.

## 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.

## 2.6. CONCLUSION

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

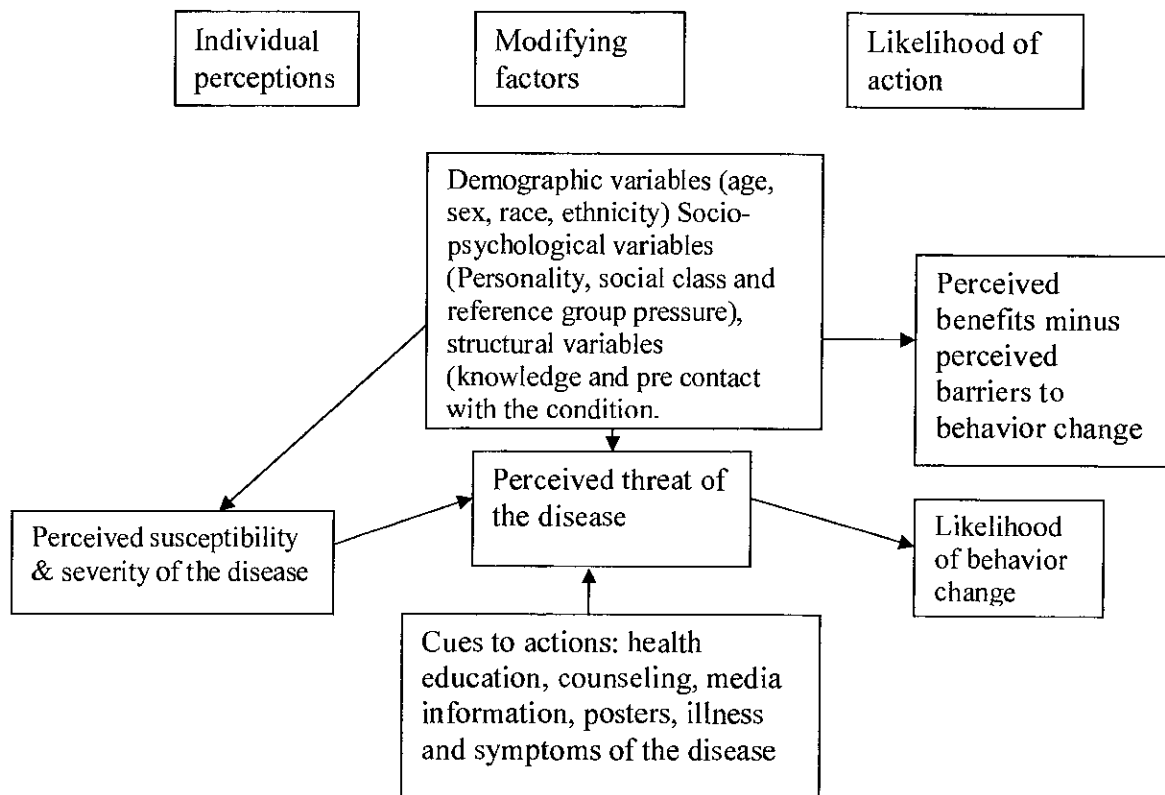
Most literature has revealed that craving for non-nutritive food substances and overeating can lead to obstruction, lead poisoning, and dental injuries, affecting mental and physical development of the unborn baby. However literature recommends that women should have good nutrition prior to pregnancy,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

## 2.7. CONCEPTUAL FRAME WORK

### 2.7.1. 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 understudy (Burns & Grove, 2001). The model, which has been adopted in this study, is Health Belief Model (HBM).

### 2.7.2. Figure 1. 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.*

### **2.7.3. DESCRIPTION OF HEALTH BELIEF MODEL (HBM) AND ITS APPLICATION.**

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 (Clemens et al, 2002). Health belief model was useful in this study, as it assisted 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 are 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 (Clemens 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.

## **2.7.4 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 which was 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. The methodology in this study consisted study design, study setting, study population that included the target population, sample and sampling technique and the inclusion criteria of the study subjects.

#### **3.2 STUDY DESIGN**

The researcher used a descriptive quantitative design in the study. According to Fain (1999), descriptive quantitative studies measure and analyze the casual relationships between variables at a particular time. The participants are given an opportunity to explain some of their answers and feelings. The advantages of using a descriptive 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). This type of design was chosen to be able to measure the level of knowledge that pregnant women had 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, median and pie charts.

#### **3.3 STUDY SETTING**

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

### **3.4. 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 was all pregnant women who were attending antenatal clinic at Dwangwa Health Centre.

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

Sampling is a process of selecting a portion of a target population for the study (Polit & Hungler, 1991).

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

The researcher recruited thirty pregnant women for the study which is appropriate for this level of Bachelors of Science in nursing. Pregnant women were chosen for the study because they are the one's that crave for non-nutritive substances during pregnancy.

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

The women who participated in the study were 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 had been chosen to ensure that every member of the population was given equal opportunity to be chosen and that it helped to generalize the results of the findings. The numbers were written on pieces of paper and the pregnant women were told to pick from the collection of the papers. Those who picked numbers from one to thirty were taken as participants of the study.

### **3.5.3 INCLUSION CRITERIA**

An inclusion criterion outlines who is legible to participate in the study and what characteristics qualify one to be the subject in a particular study. The participants in this study were pregnant women at any gestation period, of ages from 20 to 35 years, those who were attending antenatal clinic at Dwangwa Health Centre, those who voluntarily gave consent to participate in the study 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 was done using a semi-structured questionnaire, which was administered by the researcher. A questionnaire is a data collecting 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 semi- structured questionnaire include 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 was used in the study for data collection, it consisted 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 were formulated in English and were translated into Chichewa version for easy communication with subjects who could find problems with English and that Chichewa is commonly used language by many people hence making commutation easy. The semi-structured questionnaire included 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 was prepared statistically thus the use of pie charts, frequency tables, bar charts and their interpretation. Verbal responses were coded into numerical forms for statistical results presentations. A word excel programme package was used to analyse data and the data has been presented in tables, bar charts and pie charts.

### **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 did a pilot study prior to the actual study at Gogode Health Center 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 were used in the pilot study and problems with the data collecting tool were identified and rectified.

### **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 was 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 permission was granted from these institutions to conduct the study.

The participants were informed about the study, its objectives and were asked to sign a consent form. The information got from the clients was kept confidential, kept in locked place. During the study, privacy was maintained by administering the questionnaire in a private room. The participants were told to be free to pull out of the study any time they wished without being threatened or that their medical care being affected in one way or another. The participation of the subjects was kept anonymous by not writing the names of the subjects on questionnaires rather numbers were used. The researcher explained the risks and benefits of the study to the participants.

The risks included psychological stress as most women were uncomfortable to talk about reproductive issues with a person they don't know much and the subjects were told that there was no direct benefit for them, however, the benefits was that of contribution to information that will be used to improve the services for pregnant women who have pica. The researcher counselled the participants that were psychologically affected with the questions.

### **3.1.0. LIMITATIONS OF THE STUDY**

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

Another limitation was lack of funds for effective carrying out of the study activities. The researcher trained one personnel to assist in the administration of 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.

### **DISSEMINATION OF THE RESULTS**

The results will be disseminated through written reports to KCN Libraries, Kasungu District Hospital, and Dwangwa hospital and to the researcher supervisor.

## CHAPTER FOUR: PRESENTATION OF THE FINDINGS

### 4.0 INTRODUCTION

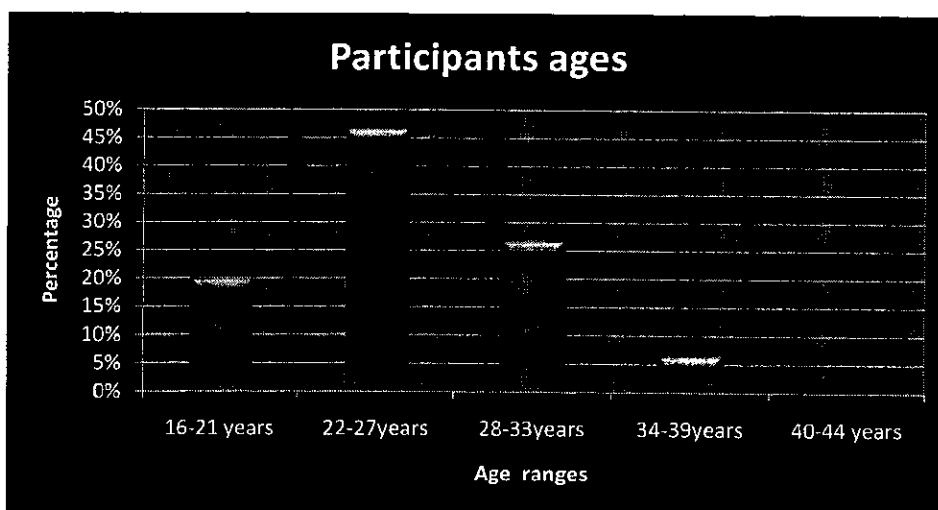
This section presents the findings of the study of which its aim was to find out the knowledge and perceptions of the pregnant women on the dangers of pica during pregnancy. The findings include section one which has demographic data of the study participants which comprises of the ages of the participants, the distribution of the tribes of the participants, the religion of the participants, the education background of the participants and occupation. The chapter also has section two which includes findings on knowledge and perceptions of the pregnant women on the dangers of pica during pregnancy.

This descriptive study has used word excel package for data analysis. Different tools have been used to interpret data such as bar charts, pie charts and frequency tables.

### SECTION ONE

#### 4.1 DEMOGRAPHIC DATA

Figure 2: Age Distribution of the Participants (N=30)

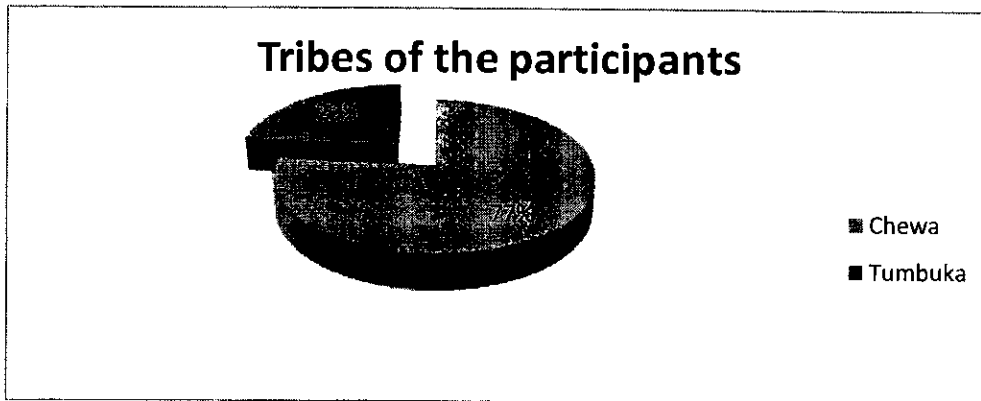


The percentages in the bar chart shows that the high percentage of women who participated in the study was those pregnant women who were in the age range of between 22-27 years of age which constituted about 47%, then seconded by those women with age range of between 28-33 years which constituted about 27%.

#### 4.1.1. DISTRIBUTION OF PARTICIPANTS BY MARITAL STATUS (n=30).

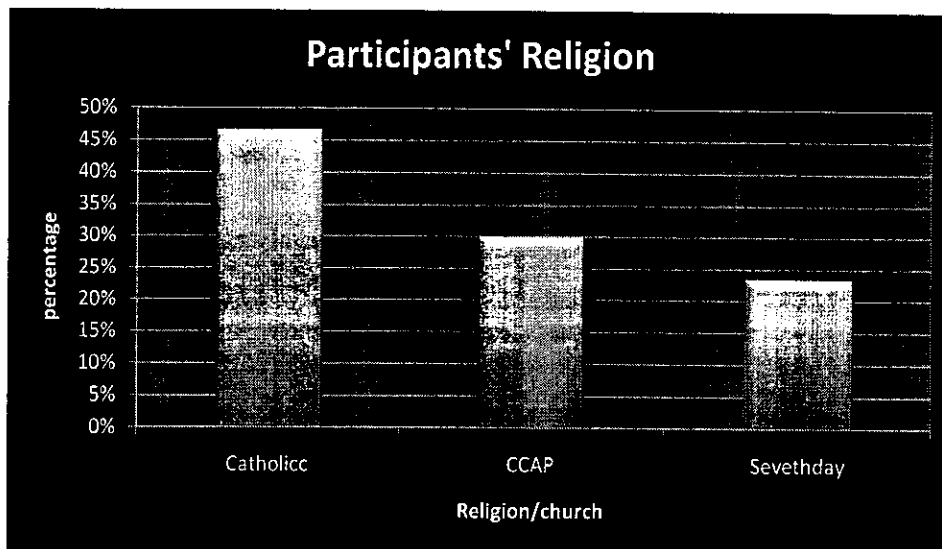
All the participants in this study were married women which represent 100%.

Figure 3: Distribution of Participants by tribe (n=30).



The pie chart shows that 77% of study participants were Chewa and that 23% of the participants were the Tumbuka. This high proportion of the Chewa and Tumbuka is attributed to the setting of the study in Kasungu where the tribes common are the Chewa and the Tumbuka. Kasungu forms a boundary shares boundary with Mzimba where the Tumbuka tribe is common and Kasungu where the Chewa tribe is common.

4.1.2. Figure 4. Religion of the Participants (n=30)



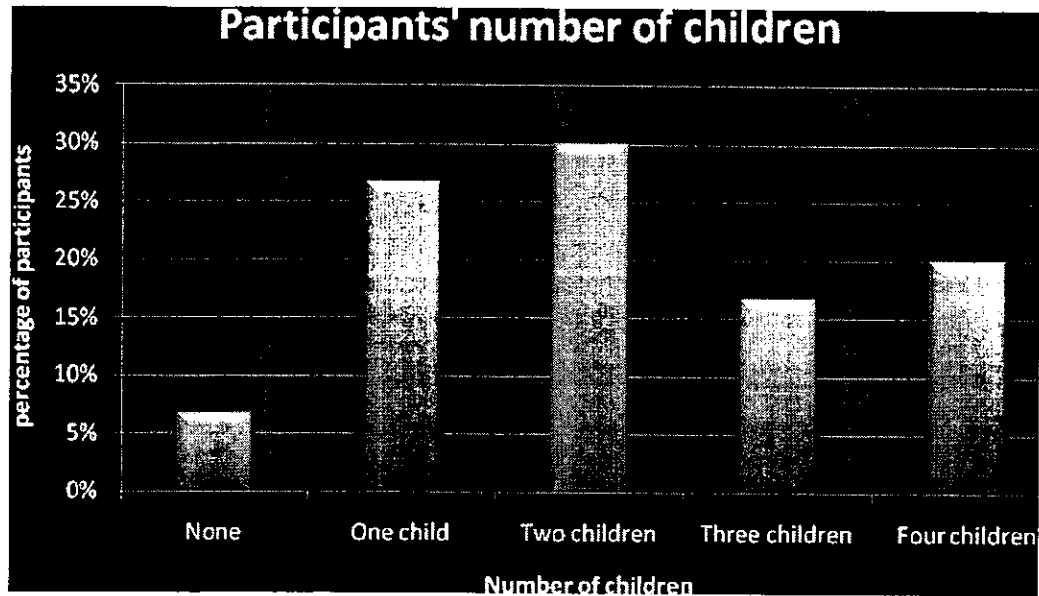
According to distribution of the participants by religion, 47% of the participants were Catholics, seconded by CCAP who were 30% and a 23% for Seventh day participants.

4.2.3. Table 1. SHOWING PARTICIPANTS GRAVIDITY (n=30)

Number of pregnancy	Frequency	Percentage
First Pregnancy	4	13.3%
Second Pregnancy	8	26.6%
Third Pregnancy	7	23.3%
Fourth Pregnancy	4	13.3%
Others	7	23.3%
<b>Total</b>	<b>30</b>	<b>100%</b>

The table above clearly shows that most of the participants ever had some pregnancies. For the 26.6% of the participants, this was their second pregnancy, 13% had this as their first pregnancy, 23.3% were in their third pregnancy, 13.3% were in their fourth pregnancy and others constituted 23.3% who were in their pregnancy beyond fourth time.

4.1.4. Figure 5. Participants' Number of Children (n=30)



About 30% of the study participants had two children each, 27% had one child, 20% had four children, 17% had three children while 6% had no child at all, this was their first pregnancy.

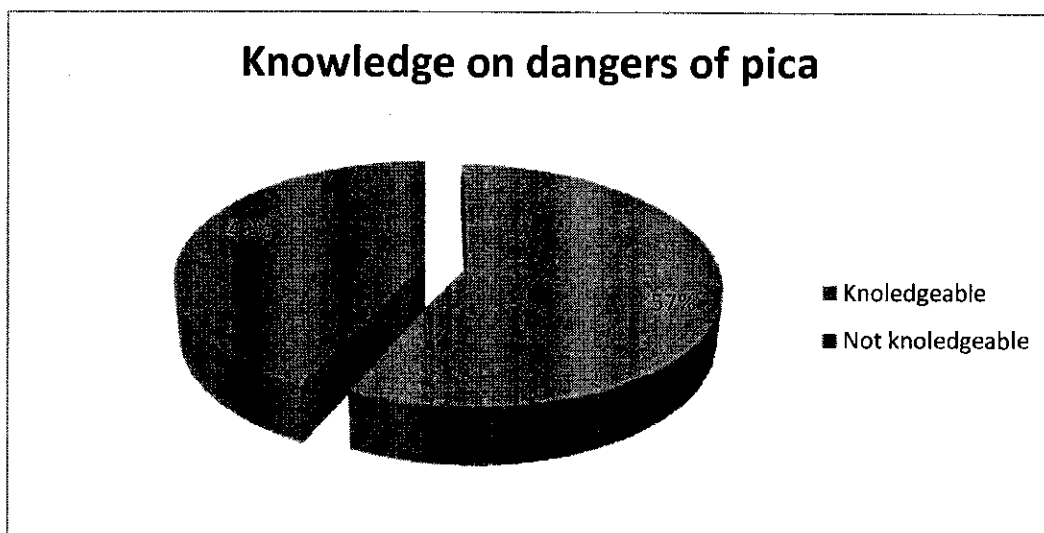
#### 4.1.5. PARTICIPANT'S OCCUPATION

All the participants in the study were farmers by occupation, this represented 100%. Most grew crops like maize, millet, potatoes and cassava for food.

## SECTION TWO

### 4.2. KNOWLEDGE AND PERCEPTIONS OF PARTICIPANTS ON DANGERS OF PICA

4.2.1. Figure 6. Participant's Knowledge on Dangers of Pica



When asked on the dangerous effects of pica in pregnancy, 57% of the participants expressed knowledge on the dangers of pica during pregnancy while 43% of the participants reported that they did not know the effects of pica in pregnancy.

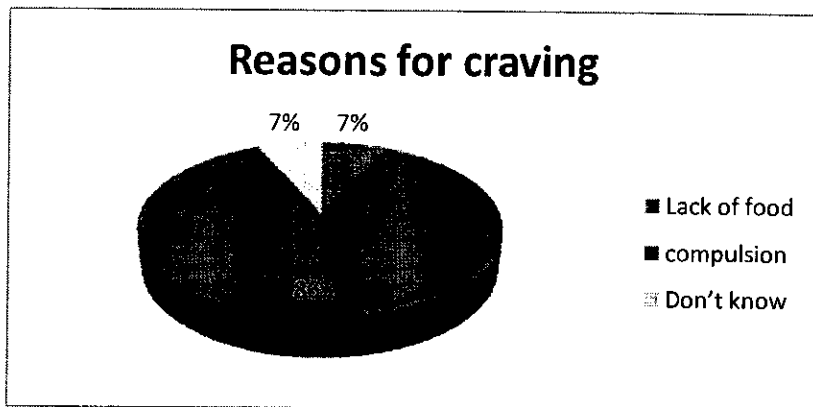
4.2.2. Table 2. Showing the Pregnant women's Perceived Dangers of Pica

REASON	FREQUENCY	PERCENTAGE
Constipation	9	30%
Failure to deliver	4	13.3%
Abdominal pains	5	16.7%
Intestinal worms	2	6.66%
Delayed labour	1	3.3%
Don't know	9	30%
<b>Total</b>	<b>30</b>	<b>100%</b>

The participants were asked to state what they perceive as dangers of pica in pregnancy. The table above shows the responses that were given. The majority (30%) reported that constipation is one of the dangers of pica. However, an equal 30% reported that they did not know the dangers. Some women reported factors that were not really directly related to pica like 3.3% said delayed labour and 13.3% said failure to deliver is one of the dangers of pica.

#### 4.2.3. KNOWLEDGE ON REASONS FOR CRAVING IN PREGNANCY

Figure 7. Pie chart showing the reasons for Craving in Pregnancy (n=30)



The following pie chart shows the percentages on the reasons why women crave during pregnancy. Out of 30 participants, 26(86%) participants reported that women crave because of strong compulsion they have for the non food items, while 2(7%) participants reported that it is due to lack of food and the other 2(7%) participants said did not know any cause for the craving.

#### 4.2.4. KNOWLEDGE ON EATING PROBLEMS RELATED TO PREGNANCY

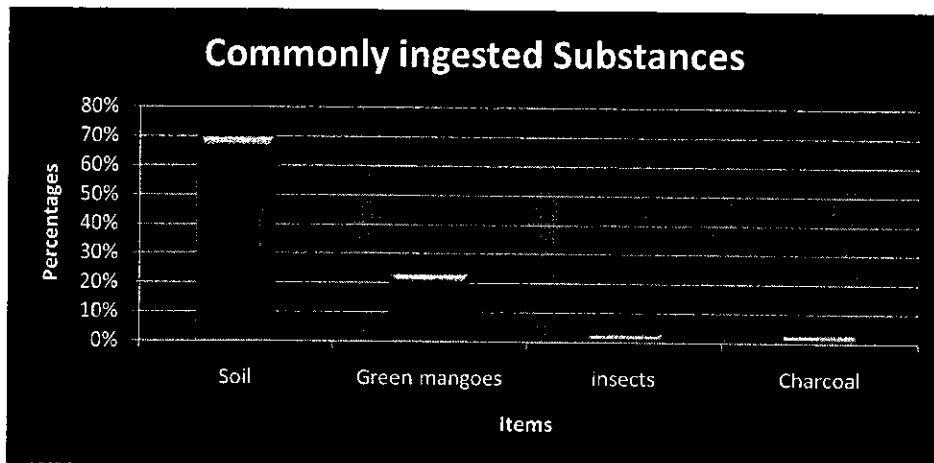
Table 3. Eating Problems related to Pregnancy (n=30)

Problem	Frequency/ number of responses	Percentage
Lack of food	8	27%
Loss of appetite	4	13%
Craving/ pica	13	43%
Vomiting	2	7%
Nausea	3	10%
Total	30	100%

In a question to find out the knowledge of the participants on the eating problems related to pregnancy, the findings above in the table shows that 13(43%) participants reported that craving is one of the problem, 8(27%) participants cited lack of food, 4(13%) participants said loss of appetite, 3(10%) said nausea and 2(7%) of the participants reported vomiting as the major problem.

When participants were asked whether craving for non food substances is one of the major problems that these women experience during pregnancy, 29 out of 30 participants said craving is one of the problems and this represents 97%.

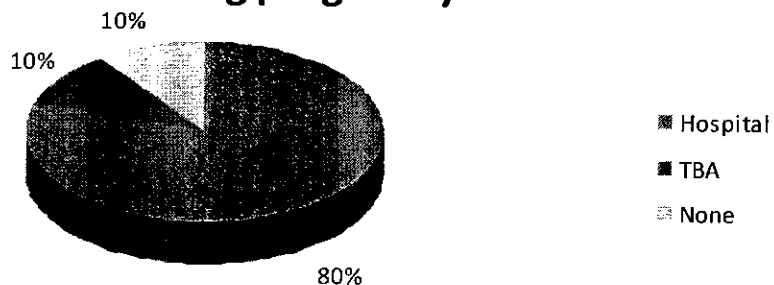
4.2.5. Figure 8. Bar Chart Showing Commonly Ingested Substances During Pregnancy



The bar graph above shows the commonly ingested food and non food items. The majority of participants in the study report that soil is mostly eaten by pregnant women with a percentage of 70% of the respondents. This is seconded by green mangoes with 23%, 3% for insects (e.g. grass hoppers) and another 3% for those eating charcoal.

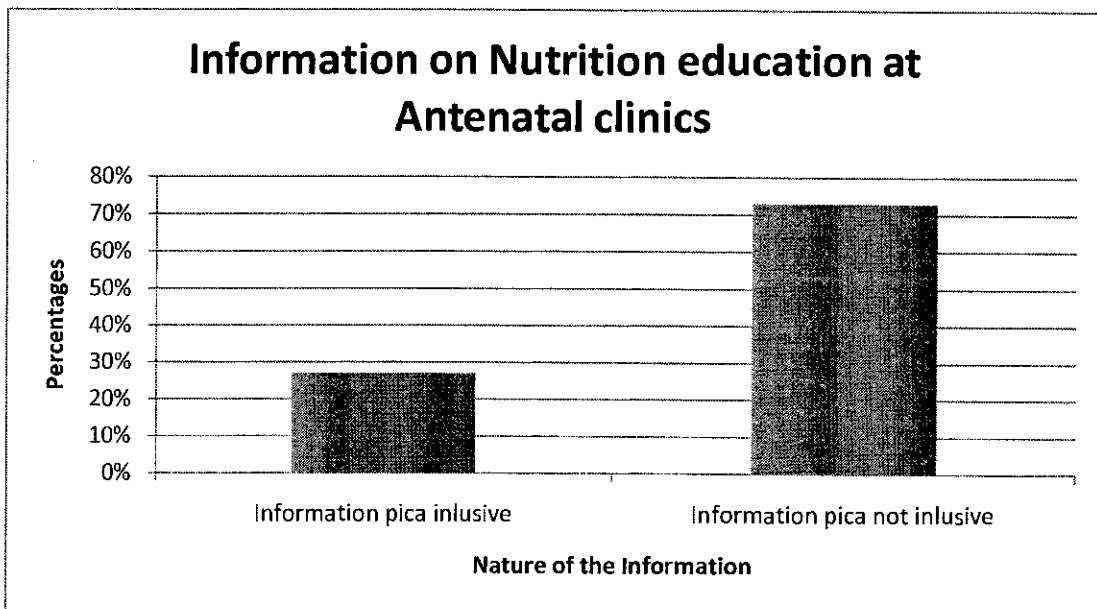
4.2.6. Figure 9. Sources of information on Nutrition in Pregnancy

Sources of information on Nutrition During pregnancy



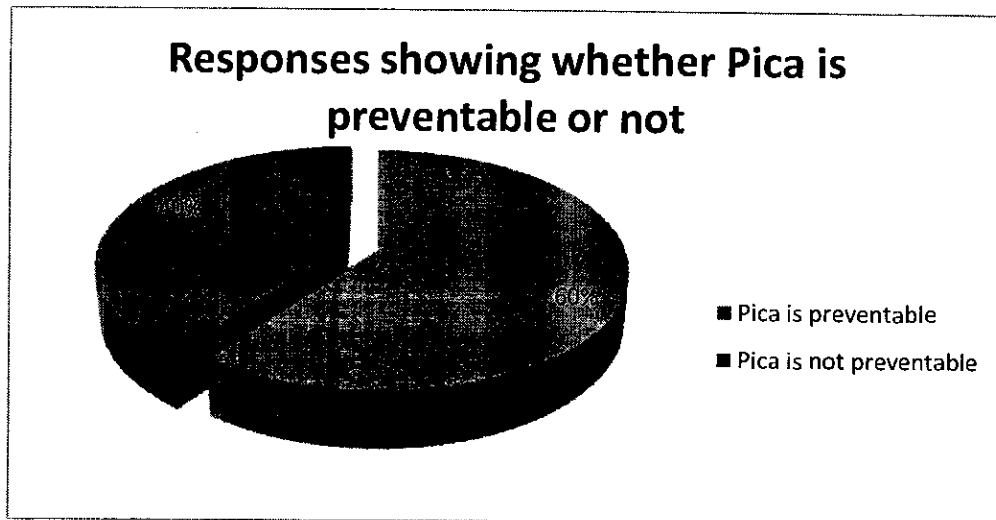
Participants were asked as to state where they get information on proper nutrition during pregnancy. As shown in the pie chart above. Out of 30 participants, 24 said they get the information from the hospital (Antenatal Clinic) representing 80%, 3 (10%) of the participants got the information from the Traditional Birth Attendants (TBA) and other 3 (10%) of the participants had never received any information on proper nutrition in pregnancy.

**4.2.7. Figure 10. The information on Pica that pregnant women receive at Antenatal Clinics**



A further question was asked to determine how much information related to pica is included in the information that these women receive at antenatal clinics. The findings in the bar chart above show that 27% of the participants said that the information they get from antenatal clinics include pica as a subject of discussion while 73% of the participants said that the nutrition education they got from antenatal clinics never included discussion on pica and its impact on pregnancy.

4.2.8. Figure 11. Participants as to whether Pica is preventable or not (n=30)



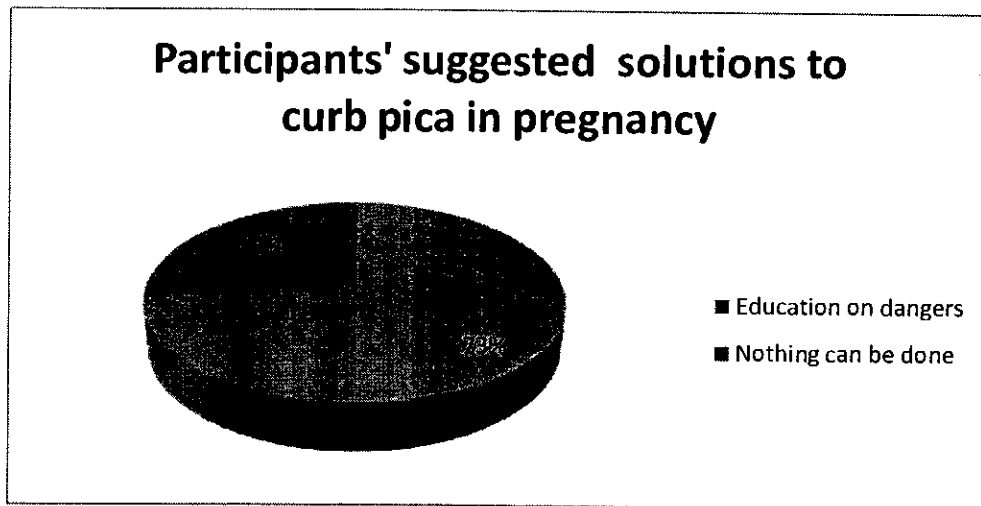
The participants were asked whether women can prevent this habit of craving during pregnancy or not. The findings in the pie chart above shows that 60% of the respondents said it is possible to prevent this habit in pregnancy while 40% of the respondents stated that it is impossible to prevent this habit because of the strong compulsion that women have for these food and non food items.

#### 4.2.9. PREGNANT WOMEN'S PERCEPTION ON PICA HABIT

On how women perceive pica habit during pregnant, the majority (59%) reported that though pica satisfies the strong compulsion that women have for these items, they believed it is a bad practice. The other participants (41%) said that there was nothing wrong with craving during pregnancy. These women stated that all women who crave and those that don't crave give birth normally.

4.2.1.0. SUGGESTED RECOMMENDATIONS ON MANAGEMENT OF PICA

Figure 12. Showing Participants Suggested Solutions



In another question the participants were asked to give their recommendations on how pregnant women with pica can be managed. The pie chart above clearly shows that out of 30 participants, 22(73%) reported that health education on the dangers of pica in pregnancy at antenatal clinics is one of the solutions that would help women stop this behaviour of craving. However, 27% stated that nothing can be done to stop pregnant women from craving citing strong compulsion for these items as the major reason.

## **CHAPTER FIVE**

### **DISCUSSION OF THE FINDINGS**

#### **5.1 INTRODUCTION**

This chapter discusses the findings of the study and relate the concepts within the descriptive study. The discussion has also focused on showing the relationship between the findings of the study and other studies that other researchers have found related to the topic under study. The researcher has also tried to suggest what the findings infer in relationship to pica in pregnancy. The discussion includes the demographic data, the women's knowledge on the dangers of pica in pregnancy and the women's perception on the dangers of pica. The chapter concludes by giving the summery of the whole discussion.

#### **5.2 DEMOGRAPHIC DATA INTERPRETATION**

##### **Age**

The demographic data has shown that the majority of the participants were of the age range from 22-27 years constituting 47%, followed by the age range of 28-33years with a percentage of 26.6. This is so because these age ranges fall within normal child bearing age of most Malawian women which is from 18-35 years of age.

Denhiever (2008) reports the results of his study on the effects of age on knowledge acquisition. The results showed that age was a significant factor in the knowledge acquisition. This is so because in young people, the brain is not fully developed than in adults this makes young one not to grasp and synthesize information just as older people do. Conversely, much older people have degeneration of brain tissues that equally affects knowledge acquisition. The imparting of knowledge in the pregnant women on the dangers of pica will be influenced by the age of the pregnant women.

Age was an important component to look at in this study as it may affect the developmental processes in the body that equally will determine the woman's status in pregnancy. The younger and the old pregnant women will have more strain on the body nutritional status due to underdevelopment and wearing off of body processes respectively. The study findings show that 43% of the participants reported practicing pica. This is in line with the World Health Organization's observation in 2004 which reports that most studies have shown that most women in childbearing age in developing countries have some degree of malnutrition. Most malnourished women develop anemia which predisposes them to pica when they are pregnant.

### **Religion**

The study has also shown that the majority of the participants were Christians. The religion of a person is important as Owen (1988) reported that in other religions like CCAP, SDA and Roman Catholic health education is intensified though some religion are selective on some health issues. Roman Catholic constituted 46% of the participants, 23% were SDA and 30% CCAP.

The researcher is of the view that restrictions by religions on accessing health services affect the nature of information that women get from the hospital. Worse still, some religions restrict food consumptions based on religious reasons and this undoubtedly contributes to malnutrition that equally causes pica in pregnancy for example seventh day prohibits the consumption of some kinds of fish hence affecting the sources of proteins for the pregnant women. Furthermore, some religions encourage the consumption of some non food items for spiritual reasons for example the consumption of alcohol. Simpson et al (2002) agrees that in some cultures, pica is a culturally accepted way of increasing spirituality or treating certain physical illness

### **Tribe**

The study findings also indicated that 77% of the participants were Chewa and 23% were Tumbuka. This distribution by tribe is due to the site for the study. Kasungu north is densely populated by Chewa and Tumbuka. The tribe of an individual was important as

culture has an influence on nutrition and other health related issues of a person. This shows that culture has an impact on the development of pica in pregnancy for example in Tumbuka culture pregnant women are prohibited to eat eggs and meat which in real sense these would have been the best sources of proteins, iron and other food nutrients. Different tribes have different perceptions on reproductive health.

### **Education**

On education status of the participants, the findings have shown that the distribution was 46-6% women with standard 4-6, 40% of the participants had 7-8 education. Very few (3.3%) had gone to secondary school. Education plays a role in the acquisition of knowledge. Smith (2000) concurs with this by saying that education remains a key to success in reproductive health. It is directly related that the low level of education pregnant women contributes to less knowledge on the dangers of pica in the pregnancy and this also determines how they perceive the craving habit.

On the other hand, education determines the economic status of most people as it contributes to the type of the work one works and also it helps in the management of finance in turn one has a capacity to have adequate diet. In a study done in Denmark (2007) 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 low prevalence rate of pica in more privileged women was due to access to information on good nutrition in pregnancy and the availability of food containing iron.

The impact of low education therefore is twofold, low economy which affect the nutrition status of an individual and lack of information that determines which affect the ability of an individual to take preventive measures. This also determines the pregnant women's knowledge on the dangers of pica in pregnancy.

## **5.3 KNOWLEDGE AND PERCEPTIONS ON THE DANGERS OF PICA**

### **5.3.1 NUTRITIONAL PROBLEMS RELATED TO PREGNANCY**

The findings show that women have a lot of problems related to nutrition during pregnancy. However, craving for food and non food items was one of the major problems cited by many women registering 43%. These findings are in line with the findings of Tayie (2006) in his study in South Africa urban and rural areas, where he discovered that pica habit in pregnant women to be 38% and 44% respectively. This therefore calls for the need for education in pregnant women to prevent pica habit during pregnancy especially during antenatal clinics

### **5.3.2 REASONS FOR CRAVING**

The study has also revealed that 87% of participants reported that women crave for these items because of lack of food, 7% reported strong compulsion as the reason while another 7% did not know the exact reason for craving. In a study done by Geisha, Prince and Poda (1992) in Kenya to determine the perceptions of soil eating and anemia among pregnant women, found that there were associations made between soil eating and certain bodily states with lack of blood and illness called "Safura" which means weak blood. Failure to know the exact cause of pica in pregnancy determines level of women's knowledge on the dangers of pica in pregnancy. For the participants who said did not know the causes for pica indicate that there are some women who do not have enough information on the dangers of pica hence the need for education especially during antenatal care.

### **5.3.2 WOMEN'S KNOWLEDGE ON ADVERSE EFFECTS (DANGERS) OF PICA IN PREGNANCY**

It was also of the researcher's interest to know how much women know about the adverse effects of pica in pregnant. As the findings indicated that 53% of the participants were knowledgeable on the dangers of pica while 47% were not knowledgeable. These figures above are in line with what A-Z Family Health Encyclopedia (1999) which stated that women may understand that what they are eating is strange, harmful and odd but the compulsion is so strong that they eat it anyway to fulfill the desire at that time. However, 47% of women not knowledgeable is a big number to miss in terms of imparting knowledge related to health. This indicates that a good number of women don't have information on the effects of pica hence the need for education during antenatal care

### **5.3.4 SOURCES OF INFORMATION ON NUTRITION**

The findings of the study have revealed that 80% of women get their nutrition education in pregnancy from the hospital at antenatal clinics, 10% from the Traditional Birth Attendants and the other 10% never ever received any information on nutrition. However, it was also observed that pica is not mostly included as topic of discussion at antenatal clinics as revealed by 73% of women who reported that they had never had information of pica from the hospitals (antenatal care). As reflected in the health belief model by Stretcher & Rosenstock (1997) used in the study, health education, counseling, media information, posters and advice from professionals 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 and prevent the habit.

Personal experience of the researcher on the nature of information that pregnant women get at the hospitals indicates that pica as a nutritional condition is completely left out. Very little or none is said about pica and its prevention in pregnancy. This results in lack

of knowledge in women on the dangers of pica. Unfortunately, TBAs do not attend courses to provide reliable information on the health issues. It is also in the view of the researcher that the information that these TBAs give to some of these pregnant women may not be reliable. The 80% women who get their information from the hospital is statistically a good number. The problem is therefore not the number of people getting the information but rather the quality of the information. The hospitals should therefore consider including information related to pica.

### **5.3.5 PREVENTION OF PICA IN PRENANCY**

It was also interesting to note that 60% of the study subjects reported that pica in pregnancy is preventable while 40% reported that there is nothing that can be done. People are likely to take preventive measures if they perceive that the health problem can be prevented. One of the core assumptions in the Health Belief Model 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 (Stretcher et al, 1997). This therefore determines how much initiative women will take to avoid craving during pregnancy. The 40% women who say there is nothing that can be done to prevent pica is a reason enough to suggest that women need education on the dangers of pica in pregnancy.

### **5.3.6 PARTICIPANTS SUGGESTED SOLUTIONS FOR THE PREVENTION OF PICA IN PREGNANCY**

The majority of the respondents (73%) said that the only solution to prevent pica in pregnancy is to educate pregnant women on the dangers of pica. However, 27% of the women believed that there is nothing that can be done with those women that are craving because it is only eating these items that will satisfy the pregnant women and that its prevention is so difficult. This was important to find out as it may give base line information and may assist in planning for the next interventions. Women may know well the possible solutions to pica habit that client education is one of the solutions but the problem lies on whether these women can manage to follow the preventive measures.

### **5.3.7 IMPACT OF THE STUDY**

The findings of the study will have important implications for the community as the recipient of nursing care and the nursing as a profession. The results will also contribute to policy making at institutional and national levels. The following are the areas that the findings of the study will affect:

#### **NURSING PRACTICE**

It is obvious from the study findings that hospitals do not provide enough information to pregnant women on the dangers of pica. The findings will help health workers in various hospital settings to include pica on their services they provide to clients.

#### **NURSING EDUCATION**

These findings can be incorporated into the nursing syllabus so that nurses are equipped with knowledge at pre service stage on screening and management of pica in pregnancy.

#### **NURSING RESEARCH**

The findings of the study will help to spark knowledge in other researchers and challenge them to carry further research in other topics related to pica in pregnancy. This will help in the expansion of knowledge in the nursing profession related to pica in pregnancy

### **5.3.8. CONCLUSION**

In conclusion, most women do practice craving in pregnancy and the findings of the study have shown that some women do not know the dangers of pica in pregnancy. Hospitals give nutritional education to quiet a number of pregnant women but the information given does not include pica as a topic of discussion. Surprisingly, women who have information on the dangers of pica also practice the habit citing strong compulsion as the cause. This therefore poses a challenge as there must not only be a need for pica information in the maternity services but also the frequency and the emphasis in which this information should be given.

Age, prior knowledge on pica, occupation, parity, educational status and cultural/religious aspects should all be brought into consideration when issues of pica are under discussion for these have an impact its development as such would assist in its management.

#### **5.3.9. RECOMMENDATIONS**

There is a need that pica should be incorporated into the nursing education so that nurses learn its screening and management at pre service stage. This will help in increase in knowledge of nurses and be able to manage this condition in pregnancy.

There is a need to intensify public awareness on the dangers of pica in pregnancy. Some women know well the dangers of pica in pregnancy as indicated from the findings but what they need is to repeatedly remind them of the dangers so that they prevent the practice during pregnancy.

Pica screening should be done as any other routine antenatal services. This is because women who are craving will not say it as they feel shy and ashamed of their behaviour. This will ensure early detection of the condition hence its proper management.

#### **5.4.0. AREAS FOR FURTHER STUDIES**

There is a need to carry further studies on impact of culture on the development of pica in pregnancy. This is because it is obvious that culture influences the health of people and the knowledge derived from this will help to draft interventions.

Another study need to be done find out the involvement of men in the management of pica as a condition. This is important because women can have an impact on the management of the problem.

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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 WA  
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?

- (I) 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-----  
-----  
-----

**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)**

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**Mrs. M Chirwa (Supervisor)**

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**APPENDIX 5. 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.....**

APPENDIX 8. 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 za kudya 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 sizidzasintha 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 nethito 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.

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.....**



University of Malawi  
Kamuzu College of Nursing

RESEARCH AND PUBLICATIONS COMMITTEE

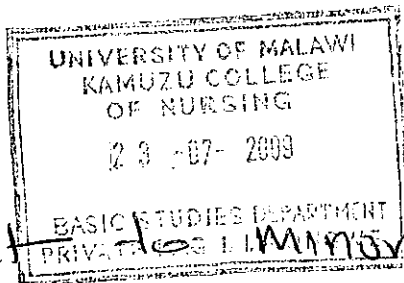
APPROVAL CERTIFICATE

TITLE: Knowledge & Perceptions of Pregnant  
Women on the dangers of Pica  
during pregnancy

INVESTIGATOR(S): S. D Zimba

YEAR OF STUDY: 4

REVIEW DATE:



DECISION OF THE COMMITTEE:

Approved Subject for ~~Private~~ <sup>Correction</sup>

SIGNATURE: [Signature] DATE: 22/07/09  
DEAN OF POSTGRADUATE STUDIES AND RESEARCH

CC: supervisor: Mrs Chirwa

**DECLARATION OF INVESTIGATOR(S)**

*I/We fully understand the conditions under which I am/we are authorized to carry out the above mentioned research and I/We guarantee to ensure compliance with these conditions. In case of any departure from the research procedure as approved, I/We will resubmit the proposal to the committee.*

DATE: 22/07/09 SIGNATURE(S): [Signature]

University of Malawi,  
Kamuzu College of Nursing,  
P/bag 1,  
Lilongwe.  
August 17, 2009.

The District Health Officer,  
Kasungu District Hospital,  
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.

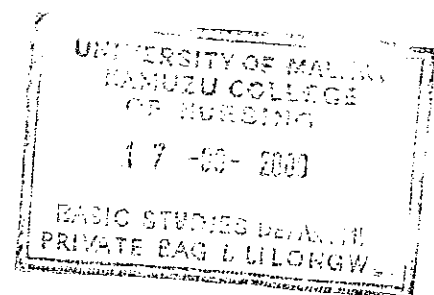
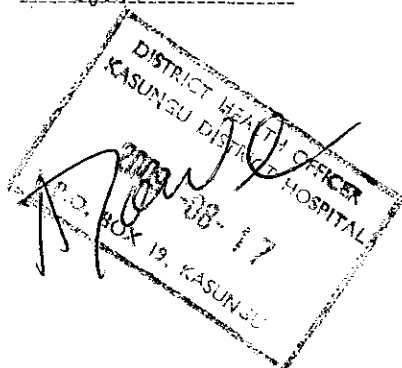
I would like to request for your permission to conduct this study at Dwangwa H/ Centre in Kasungu district.

Looking forward to your favorable reply,

Yours Faithfully,

Mr Sylvester Zimba (Principal Investigator)

Mrs. M Chirwa (Supervisor)



University of Malawi,  
Kamuzu College of Nursing,  
P/bag 1,  
Lilongwe,  
~~June 12, 2009.~~  
AUGUST 17, 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**

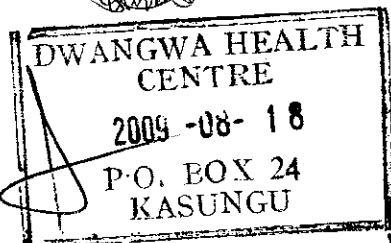
My name is Sylvester Zimba, I am a fourth year student at Kamuzu College of Nursing pursuing a Bachelor of Science Degree in Nursing. As a requirement, am supposed to conduct a research study and submit to the college for the award of the degree. My research topic is "A study to assess knowledge and 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).



*Permission granted*

