FACTORS ASSOCIATED WITH MALARIA PREVALENCE AMONG PREGNANT WOMEN ATTENDING ANTENATAL CLINIC AT KAGADI HOSPITAL KIBAALE DISTRICT WESTERN UGANDA

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A RESEARCH REPORT SUBMITTED TO THE UGANDA NURSES AND MIDWIVES EXAMINATION BOARD IN PARTIAL FULFILMENT OF THE REQUIREMENT OF THE AWARD OF THE DIPLOMA IN NURSING SCIENCES.

OCTOBER, 2017
ABSTRACT

Malaria is a major public health problem especially in the African region. Globally about one million deaths occur annually as a result of malaria. In Uganda, malaria is highly endemic with 63% of the population exposed to high transmission. The main objective was: To determine the factors associated with malaria prevalence among pregnant women attending antenatal clinic at Kagadi hospital-Kibaale district. A descriptive cross section study design was used, simple random sampling method used to recruit 49 participants for the interview. The sample size was determined by Fisher’s method. A self-administered questionnaire was used to collect information from the participants.

Results

The results of the study indicated that socio demographic factors such as: maternal age, education, gravidity, and housing; health service factors such as: distance from the health facilities and availability of malaria treatment and individual factors such as: knowledge about malaria prevention, use of ITNs and uptake of IPTp by pregnant mothers were associated with malaria prevalence among pregnant women.

Conclusion: The district has high malaria prevalence among pregnant women and therefore there is need for the district authorities to implement targeted interventions towards malaria prevention in Kagadi district.
DECLARATION

I declare that this study on the factors for malaria prevalence among pregnant women attending antenatal clinic at Kagadi hospital is of my own original work.

Signature…………………………………………………

Date…………………………………………………………
APPROVAL

This report has been compiled under my supervision and am fully satisfied that it is fit to be submitted to the Uganda Nurses And Midwives Examination Board for the partial fulfillment for the award of a Diploma in nursing.

SUPERVISOR

Name: TURYASINGURA JOHNAN

Signature: .................................................................

Date.................................................................

PRINCIPAL

Name: KABANYORO AGNES

Signature.................................................................

Date.................................................................
DEDICATION

This research is dedicated to my beloved parents, my mum Miss Nyakato M Juliet Adyeri, and my dad Mr. Irumba Edward Amooti for the endless support offered to me during my education.
ACKNOWLEDGEMENT

I am grateful to God Almighty for His mercy and for giving me strength and courage whenever I faced obstacles in my academics and enabling me accomplish this research. I will praise and worship Him forever.

I acknowledge the administration of Kampala International University Nursing School for the efforts put to make me thrive in my academics.

Special acknowledgement to my supervisor Mr. Turyasingura Johnan for guiding me from the start of this report to its completion.

Special appreciation to the staff of Kagadi hospital and the pregnant women for cooperating with me when I was conducting my research study.
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LIST OF ACRONYMS.

ANC: Antenatal Care

CDC: Centre for Disease Control

DDT: Dichlorodiphenyltrichloroethane

DHT: District Health Team

IPTp: Intermittent Preventive Treatment

ITNs: Insecticide Treated Nets

IRS: Indoor Residual Spraying

MOH: Ministry Of Health

MIP: Malaria in Pregnancy

SP: Sulphadoxine - pyremethamine

SPSS: Statistical Package for Social Science


WHO: World Health Organization
DEFINITION OF KEY TERMS

Antenatal care: Is a planned, methodical, practical and continuous supervision of a pregnant mother both physically, socially, and mentally to ensure that she gets a successful labour, peuperium, lactation and subsequent care of the child.

Antenatal clinic: Is a health unit where pregnant women are examined, health educated and treated for any condition or disease during pregnancy.

Antenatal: Is the period before birth.

Endemic: A disease regularly found among particular people or in a certain area.

Incidence: Is the rate of new (or newly diagnosed) cases of the disease.

Mortality: Relative incidence of death within a particular group categorized according to age or some other factor such as occupation.

Prevalence: The spread or frequency with which an event or circumstance occurs per unit of time, population, or other standard of comparison.

Prophylaxis: Action taken to prevent disease especially by specified means or against a specified disease.
CHAPTER ONE

1.1 INTRODUCTION

This chapter describes; the background information about malaria prevalence; the problem statement; purpose of the study; specific objectives; research questions and justification of the study.

1.2 BACKGROUND

Malaria is a life threatening parasitic disease caused by the protozoa of the genus plasmodium. Five species are known to inflict humans namely: P.falciparum, P. malariae, P.ovale, P.vivax, and P. Knowlesi. The disease is transmitted by the bite of infected female anopheles mosquito. Malaria pregnancy is caused mainly by the species P.falciparum which is the most common species in Africa. (Fana SA et al, 2015).

Approximately 125 million pregnant women worldwide are exposed to the risks of malaria in pregnancy (MIP) each year, resulting in 200,000 infant death. In India, 28 million pregnancies take place every year with 67,000 maternal deaths (Register General of India, Sample Registration System, Special Bulletin on Maternal Mortality in India, 2014-06 ), with one million women left with chronic ill health and one million maternal deaths; (Sohali . M, et al, 2015).

According to the WHO reports (2016), Malaria is endemic in tropical regions and in Africa; it is more prevalent in Sub-Saharan countries including Uganda. Sub-Saharan
Africa continues to carry a disproportionately high share of the global malaria burden. In 2015, the region had 90% of malaria cases and 92% malaria deaths.

In India, malaria is not uniformly distributed. India contributes over one fifth (22.6%) of clinical episodes of plasmodium falciparum and 42% of episodes of plasmodium vivax globally. (Singh et al, 2015).

In Tanzania, between 2006 and 2012, the reported rate of malaria related deaths decreased by more than a half; nonetheless, there were still some 1.5 million cases of malaria reported in 2013. More than 80% malaria cases are linked to infection with plasmodium falciparum. The species is dangerous for pregnant women as it typically invades large numbers of erythrocytes, causing severe anemia which is crucial in pregnancy. (Zablon, et al, 2015).

Approximately 35 million pregnant women are at risk of malaria infection each year in Sub-Saharan Africa. Adverse consequences of malaria infection during pregnancy include: Maternal anemia, intrauterine growth retardation, preterm delivery, stillbirth and low birth weight associated with neonatal death; (Chaponda, et al, 2015), (Boudova' et al, 2014).

Estimates from the MOH show that around 16 million cases of malaria occur annually in Uganda, with 100,000 people dying from the disease mostly pregnant women and children. In July 2015, the government of Uganda reported an unusual outbreak of malaria in the Northern region of the country.
The outbreak has affected one million people since July 2015, with 658 people dying from malaria in Northern Uganda. (Inter health Worldwide, 2016).

The World Health Organization global Malaria Program recommends the following three primary interventions for malaria control: Early diagnosis of malaria cases and treatment with effective medicines; distribution of ITNs, to achieve full coverage of population at risk of malaria; and indoor residual spraying (IRS) as a major means of malaria vector control to reduce and eliminate malaria transmission including where indicated, the use of DDT. Additionally, for the prevention of malaria in pregnancy, use of effective chemo-prophylactic agents for intermittent prevention of malaria is recommended. (WHO, 2011).

According to Olowo James, the medical superintendent of Kagadi hospital, the number of malaria cases in Kagadi district have doubled compared to the same period last year. The hospital registers about 40 malaria patients daily and as a result the hospital has run out of drugs.
1.2 PROBLEM STATEMENT

Malaria is one of the most severe public health problems worldwide. It is the leading cause of death and disease in many developing countries where young children and pregnant women are the groups most affected; (CDC, 2016).

Approximately 35 million pregnant women are at risk of malaria infection each year in sub-Saharan Africa; (Chaponda et al, 2015).

In Uganda, approximately 25 million pregnancies are at risk of p. falciparum infection every year and 25% of these women have evidence of placental infection at the time of delivery; (Namusoke et al, 2010).

The antenatal records of kagadi hospital (2016) indicated that 186 pregnancy women reported with malaria and 36 of them were admitted. In spite of the intervention taken to prevent malaria among pregnant women, malaria has remained high in kagadi district. Therefore it will be important to understand underlying factors for malaria prevalence among pregnant women in kagadi hospital.

1.3 Purpose of the study

To determine the factors associated with the prevalence of malaria among pregnant women attending antenatal care clinic at Kagadi hospital –Kibale district.

1.4 Specific objectives

1. To determine the health service factors associated with malaria prevalence among pregnant women attending antenatal care clinic at Kagadi hospital.
2. To determine the socio-demographic factors associated with malaria prevalence among pregnant women attending antenatal care clinic at Kagadi hospital.

3. To identify the individual factors associated with malaria prevalence among pregnant women attending antenatal care services at Kagadi hospital.

1.5 Research question.

1. What are the health service factors associated with malaria prevalence among pregnant women attending antenatal clinic at Kagadi hospital?

2. What are the socio-demographic factors associated with malaria prevalence among pregnant women attending antenatal clinic at Kagadi hospital?

3. What are the individual factors associated with malaria prevalence among pregnant women attending antenatal care clinic at Kagadi hospital.

1.6 Justification of the study

Despite tremendous prevention and control measures, malaria is still a major public health problem in many regions including Kagadi district. On the basis of the above, it will be therefore vital to understand the factors associated with malaria prevalence among women attending antenatal at Kagadi hospital. The paucity of data on the risk factors associated with malaria in pregnancy, despite the current massive malaria interventions necessitated this study. Results from this study will be useful to the Nursing field in the prevention and control of malaria in communities, for study purposes and also help in future researchers as literature review; it will also be useful to the MOH, DHT and
Other related health organizations in planning for malaria prevention and control in Kagadi district.
CHAPTER TWO: LITERATURE REVIEW.

2.1 INTRODUCTION

This chapter reviews information that has been researched before about factors associated with malaria prevalence among pregnant women.

It includes literature review about health service factors associated with malaria prevalence among pregnant women; socio-demographic factors which include, maternal age, education, gravidity, and housing; individual factors which include, knowledge about malaria, use of ITNs, behavioral factors.

2.2 HEALTH SERVICE FACTORS

According to the study done in Sub-Saharan Africa, health service factors were identified as the factors hindering the provision of IPTp and ITNs thus increasing the burden of malaria among pregnant women; (Hill J et al, 2013).

2.2.1 Access to health facilities.

Another study conducted in Korogwe district, North-East Tanzania showed that access to health facilities was related with malaria prevalence among pregnant women besides affecting the routine health supervision activities, the long distances and transport problems are among the factors discouraging the utilization of antenatal services at peripheral health facilities; (Mubyazi et al, 2009).

Also a study conducted in Kenya showed that access to health services for effective malaria treatment is a big determinant of morbidity and mortality due
to malaria. Access to health care is important for proper case management. This in turn reduces the level of parasitemia among the individuals in the community; (O’Meara et al, 2009).

However health service factors such as availability of malaria drugs in health facilities, health worker attitudes towards pregnant mothers had not deeply been investigated thus the need to further carry out a study on these factors.
2.3 SOCIO-DEMOGRAPHIC FACTORS

2.3.1 Maternal age

A study conducted in Lagos Nigeria; maternal age was associated with malaria prevalence and a pregnant woman of young maternal age is at a greatest risk of malaria infection as well as having the highest parasite densities; (Chimere O Agomo and Wellington Oyibo, 2013).

Another study conducted in the semi-urban area of Argungu, Kebbi state, Nigeria showed that prevalence and parasite density decreased as age increased;(Fana et al, 2015).

2.3.2 Education

There was a significant association between malaria prevalence and education levels in the study conducted in the semi-urban area of Argungu, North-West Nigeria. Malaria prevalence in women with no education was 63.0% while in those with primary, secondary and tertiary education, it was 45.3%, 32.3% and 27.3% respectively; (Anka et al, 2015). A study conducted in Benin City showed that there was a relation between the level of education and malaria prevalence among pregnant women. 38.5% who had tertiary level of education had significantly lower prevalence of malaria infection; (Oladeinde B.H et al, 2012).
2.3.3 Gravidity

In malaria endemic areas, pregnant women in particular primigravidae, are known to be susceptible to malaria and to have higher prevalence and densities of parasitaemia than are non-pregnant women from the same population. The size of excess risk varies with the age of the pregnant woman, reflecting cumulative exposure to malaria in the previous pregnancies; (Eijk et al, 2015).

Primigravidae are at higher risk than multigravidae though less in low transmission settings while in epidemic areas, the risk is not affected by parity. (Ebako and Umberto, 2013). Prim gravid were associated with increased odds of co-infection with malaria according to the study conducted in Ghana; (Yatich et al, 2009).

2.3.4 Housing

A study conducted in South Africa showed that there is a high malaria infection risk of people living in mud-walled houses compared to those in brick dwellings. The study further noted that relatively wealthier households within the third and fourth wealth quartiles had a lower risk of malaria.; (Coleman et al, 2010). Dwellings that are constructed with readily available materials might allow mosquitoes to enter more easily than well-constructed housing with Screened windows thus leading to increased malaria prevalence among pregnant women living in such housings; (Francesco R, 2012).

However the studies above did not specify exactly how maternal age and nature of housing are associated with malaria prevalence thus the need to fill this gap through conducting this study.
2.4 INDIVIDUAL FACTORS

2.4.1 Knowledge about malaria

According to the study conducted in peri-urban communities of Port Harcourt city in Nigeria, a total of 666 (83.8%) of the women identified malaria as the most common disease in their environment. Majority of them 709(89%) linked malaria transmission with mosquito bite, however a high proportion cited at least one incorrect cause of malaria such as eating oily foods- 188(23.6%), too much sunlight-106(13.3%), and repercussion of past evil deeds- 2 (0.3%) as causes of malaria.; (Tobin. W, 2016).

A study conducted in north Nigeria showed that knowledge on prevention of malaria among pregnant women and care takers of children below five years was associated with malaria prevalence among pregnant women and children below five years. 57.7% of the participants had poor knowledge of malaria prevention and this made them susceptible to malaria; (Adebayo M.A et al, 2015).

2.4.2 Use of ITNs

Use of ITNs was significantly associated with malaria prevalence and parasite density as the number of participants who did not use ITNs regularly reported a high occurrence of malaria infection with a high parasite density as compared to those who used ITNs on a daily basis according to the study conducted in Argungu, North-West Nigeria;(Anka et al, 2015).
2.4.4 Behavioral factors

Human behaviors often influenced by social and economic reasons can influence the risk of malaria for individuals and communities. Human activities can create breeding sites for larvae like presence of irrigation ditches near the housing ;( CDC, 2010).

However, other individual factors such as compliance to malaria prophylaxis treatment by pregnant mothers, refusal to take treatment during pregnancy and cultural issues had not been investigated clearly in these studies thus the need to fill this gap in individual factors associated with malaria prevalence among pregnant women.
CHAPTER THREE: METHODOLOGY

3.1 Introduction

This chapter describes the detailed procedure of the study that is: study design, study settings, study population, sample size and sampling procedures, inclusion and exclusion criteria, definition of variables, research instruments, data collection procedures, data management, data analysis, ethical considerations, limitations of the study and dissemination of results.

3.2 Study design and rationale

A descriptive cross-sectional study design was used to examine pregnant women attending antenatal care clinic at Kagadi hospital. The cross-sectional study design was selected because it aided in rapid data collection and allowed a "snap shot" interaction with a small number of respondents at a point in time.

3.3 Study settings and rationale

The study was carried out at Kagadi hospital - Kagadi district in Western Uganda, Bunyoro sub-region. Kagadi general hospital was built and is owned by the government of Uganda. Kagadi hospital is a general hospital which has a capacity of 100 beds. The hospital was founded in 1969 and is located on Kyenjojo-Kabwooya road, in Kagadi district about 246.8km North-West of Kampala the capital city of Uganda. Kagadi hospital receives about 250 patients at the outpatient department every day out of which 50 are pregnant women attending antenatal clinic every day.
This study was chosen because of easy access to the hospital and also the study on factors for malaria prevalence among pregnant women had not been conducted in this hospital before.

3.4 Study population
The study was conducted among pregnant women attending antenatal clinic at Kagadi hospital in Kagadi district. This study population was chosen because malaria is more prevalent among pregnant women and young children due to their susceptibility as a result of reduced immunity

3.4.1 Sample size determination

The sample size was determined using Fisher's method (1990) in which sample size was given by the expression;

\[ n = \left(\frac{z*z}{d*d}\right) \times p \times q \]

\((d*d)\)

\(n = \) desired sample size \(z =\) standard normal deviation set at 1.96 for maximum sample size at 95%.

\(p = 50\% \) (constant) or 0.5% since there were no measures estimated.

\(q = 1-p\)

\(= 1-0.5\)

\(= 0.5\)

\(d =\) degree of accuracy desired 0.14 or 0.14 probability level (at 95% confidential interval)
By substituting:

\[
\begin{align*}
    n &= (1.96*1.96)(0.5*0.5) \\
    &= (0.14*0.14) \\
    &= 49
\end{align*}
\]

Therefore sample size was 49.

3.4.2 Sampling procedure

The pregnant women in antenatal clinic were selected by simple random sampling. To reduce bias, the number of mothers present in the antenatal clinic were determined by writing equal numbers of papers assigned "yes" and "no", folded and then mixed in the box and each mother was given chance to pick one. Questionnaires were then self-administered to those participants who picked “yes”. Mothers who picked "no" were not eligible for participating and when the sample size was not realized, another round of picking papers by mothers made to come up with the required sample size.

3.4.3 Inclusion criteria

Pregnant women attending antenatal clinic at Kagadi hospital.

3.4.4 Exclusion criteria

Children and adult males were excluded from the study.

Non-pregnant women were also excluded from the study.
3.5 DEFINITION OF VARIABLES

3.5.1 Dependent variables

Prevalence of malaria

3.5.2 Independent variable

i. Socio-demographic factors such as age, parity, level of education.

ii. Health service factors such as availability of drugs, distance from hospital, altitude of health workers.

iii. Individual factors such as use of ITNs, compliance to IPTp, personal behaviors, knowledge of individuals.

3.6 Research Instruments

The data was be obtained by using a structured questionnaire. The questionnaire was be divided in to four sections; The first section was used to collect data about the socio-demographic profile. The second section was used to collect data on the health service factors associated with malaria prevalence among pregnant women and the third section used to collect data about Individual factors associated with malaria prevalence among pregnant women at Kagadi hospital.

3.7 Data Collection procedures

Sampling was done and the investigator introduced herself to the participants and read the consent form with detailed information about the title and purpose of
the study as well as the rights of the participants and explained in the language that is well understood by the participants.

When the participants agreed to be interviewed, he or she would be asked to provide written consent by signing or finger printing. Those who would not be interested in being interviewed, would be left un interviewed. After obtaining a written consent, the investigator entered the questionnaire serial number and date of interview and proceeded from the first question until all the questions were answered by the participant. The questionnaires were self-administered to the participants since most of the mothers were unable to read English. All questions were asked in the language that is understood by the participants. The participants were required to give appropriate answers to the asked questions.

The process of data collection continued until every participant had been interviewed. The completed questionnaires were kept safely by the researcher.

### 3.7.1 Data management

Completed questionnaires were checked for accuracy and completeness at the end of the day. Data was coded and entered into the computer using Microsoft excel and the Epi-Info 3.5.1 software for social scientists (SPSS) version 16.0 software for analysis.

### 3.7.2 Data analysis

Data was entered by descriptive statistics using SPSS version 16.0 software and presented in frequency tables, pie charts and bar graphs.
3.8 Ethical considerations

Approval to conduct the study was sought from Kampala International University Western Campus school of nursing. Permission was obtained from the medical superintendent and the Senior Principle Nursing Officer Kagadi hospital then from the maternal child health clinic in charge. The investigator provided an explanation of the purpose, risks and benefits of their participation in the study. Individuals were assured that the information shall be treated with utmost confidentiality.

Participants were also informed of their right to withdraw from participation in the study at any time without fear. Participant's verbal consent to participate in the study were be ensured and respected.

3.9 Limitation of the study

Some pregnant women would not be able to provide adequate information due to the fact that they would be tired since the patients at the hospital were very many compared the health personnel attending to them thus stay for a long time without being attended to. Also due to congestion at the antenatal clinic, confidential information would not be disclosed by the participants. The investigator ensured that she arrived at the hospital early in order to collect information before the pregnant mothers are tired. The investigator also ensured that each pregnant woman is attended to separately and privately.
3.10 Dissemination of Information

Copies of results were disseminated to Kagadi district health office, Kampala International University Nursing library, The Uganda nurses and Midwives examination board as one of the requirements for the award of Diploma in nursing.
CHAPTER FOUR

4.0 INTRODUCTION

This chapter includes: Description of the sample and presentation of data collected inform of graphs, charts and frequency tables.

4.1 BIO-DEMOGRAPHIC PROFILE OF THE RESPONDENTS.

A sample size of 49 respondents was chosen and all the 49 participants gave clear answers to the questionnaires.

Table. Shows the age of respondents.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Frequency(n)</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (years)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>18-25</td>
<td>19</td>
<td>38.8</td>
</tr>
<tr>
<td>26-35</td>
<td>22</td>
<td>44.8</td>
</tr>
<tr>
<td>35-50</td>
<td>08</td>
<td>16.4</td>
</tr>
<tr>
<td>50 and above</td>
<td>00</td>
<td>00</td>
</tr>
<tr>
<td>Total</td>
<td>49</td>
<td>100</td>
</tr>
</tbody>
</table>
19(38.8\%) of the respondents were between the age of 18-25 years; 22(44.8\%) of the respondents were between 26-35 years; 08(16.4\%) of the respondents were between 35-50 years and none of the respondents was above 50 years.

**Table 2. Shows the tribe of the respondents.**

<table>
<thead>
<tr>
<th>Parameters</th>
<th>Frequency(n)</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tribe of the respondents.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Banyoro</td>
<td>21</td>
<td>41.8</td>
</tr>
<tr>
<td>Bakiga</td>
<td>16</td>
<td>32.8</td>
</tr>
<tr>
<td>Batooro</td>
<td>08</td>
<td>16.4</td>
</tr>
<tr>
<td>Bakonjo</td>
<td>04</td>
<td>09</td>
</tr>
<tr>
<td>Total</td>
<td>49</td>
<td>100</td>
</tr>
</tbody>
</table>

Majority of the respondents, 21(41.8\%) were Banyoro; 16(32.8\%) were Bakiga; 08(16.4\%) were Batooro and 04(09\%) of the respondents were Bakonjo.
Figure 1: Shows the location of the respondents.

N=49

All of the respondents, 49(100%) lived in Kibaale district and none of the respondents lived in other districts apart from Kibaale district.
Figure 2: Shows the occupation of the respondents.

N=49

Majority of the respondents, 22(44.8%) were farmers; 13(26.9%) were business women and 14(28.3%) were not employed.
Table 3: Shows the marital status of the respondents.

N=49

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Frequency(n)</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Marital status of the respondents</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Married</td>
<td>37</td>
<td>74.6</td>
</tr>
<tr>
<td>Single</td>
<td>11</td>
<td>22.4</td>
</tr>
<tr>
<td>Separated</td>
<td>01</td>
<td>03</td>
</tr>
<tr>
<td>Total</td>
<td>49</td>
<td>100</td>
</tr>
</tbody>
</table>

37(74.6%) of the respondents were married; 11(22.4%) were single mothers while 01(03%) had separated with the husband.
Figure 3: Shows the level of education of the respondents.

N=49

08(16.4%) of the respondents had not attended any level of education; 30(61.2%) had attended primary level of education; 10(19.4%) had attended secondary level of education and 01(03%) had attended tertiary level of education.

4.2 HEALTH SERVICE FACTORS ASSOCIATED WITH MALARIA PREVALENCE AMONG PREGNANT WOMEN ATTENDING ANTENATAL CLINIC AT KAGADI HOSPITAL.

The health service factors assessed included: distance from the health facility, and availability of malaria treatment in the hospital.
Figure 4: A pie chart showing the distance of the participants from the health facility.

N=49

29(59.7%) of the participants lived more than or equal to 5km from the health facility while 20(40.3%) of the participants lived less than 5km from the health facility.
14(28.4%) of the participants reported that malaria treatment at the hospital was available while 35(71.6%) of the participants reported that malaria treatment was not available at the hospital and that they were told to go and buy the treatment from outside pharmacies.

### 4.3 Socio Demographic Factors Associated with Malaria Prevalence Among Pregnant Women Attending Antenatal Clinic at Kagadi Hospital.

The socio demographic factors studied included: Age, education, location of the home, gravidity and nature of housing.
Figure 6: A pie chart showing the nature of housing of the respondents.

N = 49

47(95.9%) of the respondents lived in houses in a good condition that is houses with good roofing and with no other openings apart from doors, windows and ventilators; while only 2(04%) lived in houses in poor condition.
Figure 7: A bar graph showing the gravidity of the participants.

16(32.8%) of the respondents were primigravidas while 33(67.2%) were multigravidas.
4.4 INDIVIDUAL FACTORS ASSOCIATED WITH MALARIA PREVALENCE AMONG PREGNANT WOMEN ATTENDING ANTENATAL CLINIC AT KAGADI HOSPITAL.

The individual factors studied included: number of attendance of antenatal clinic, completion of malaria prophylaxis treatment, knowledge about malaria prevention practices.

Figure 8: A bar graph showing the percentage of individuals who slept under an ITN every night.

09(18.4%) never slept under an ITN every night, 21(42.9%) slept under an ITN every night, and 38.8% slept under an ITN once in a while.
Table 4: Showing the percentage of pregnant women who had correct knowledge about malaria preventive practices and uptake of malaria IPT by pregnant Mothers.  

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Frequency(n)</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mothers who had correct knowledge about Malaria prevention.</td>
<td>39</td>
<td>79.6</td>
</tr>
<tr>
<td>Mothers who did not have correct knowledge About malaria prevention.</td>
<td>10</td>
<td>20.4</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>49</strong></td>
<td><strong>100</strong></td>
</tr>
<tr>
<td>Mothers who had taken IPT.</td>
<td>38</td>
<td>77.6</td>
</tr>
<tr>
<td>Mothers who had not taken IPT.</td>
<td>11</td>
<td>22.4</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>49</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

39(79.6%) had correct knowledge about malaria prevention, while 10(20.4%) did not have correct knowledge about malaria prevention and mentioned other different way like bathing daily, cleaning the house and cooking from a clean place. 38(77.6%) of the participants had taken IPTp while 11(22.4%) had not taken IPTp.
CHAPTER FIVE: DISCUSSION OF RESULTS.

5.0 INTRODUCTION

This chapter involves discussion of the study findings got about the study on factors for malaria prevalence among pregnant women attending antenatal clinic at Kagadi hospital. The results are discussed according to the set specific objectives which are: Health service factors, socio demographic factors and individual factors Associated with malaria prevalence among pregnant women attending antenatal clinic at Kagadi hospital.

5.1 HEALTH SERVICE FACTORS ASSOCIATED WITH MALARIA PREVALENCE AMONG PREGNANT WOMEN ATTENDING ANTENATAL CLINIC AT KAGADI HOSPITAL.

The following health service factors were studied: Distance from the health the health facility and availability of malaria treatment in the hospital.

5.1.1 Distance from health facilities.

Women who lived more than 5km from the health facility, 29(59.7%) had suffered from malaria and were at more risk of being re- infected with malaria compared to those who lived less than 5km away from the health facility, 20(40.3%). This was because pregnant mothers would not manage travelling long distances to the far health facility for malaria prophylaxis treatment. This predisposed them to malaria infection thus increased malaria prevalence among such pregnant mothers. These results agree with the results of Mubyazi et al, 2009 who conducted a study in
Korogwe district, North West Tanzania and showed that long distances to health facilities discouraged utilization of antenatal services thus leading to increased malaria prevalence among pregnant women who could not access the malaria prophylactic treatment.

5.1.2. Availability of malaria treatment in the hospital.

14(28.4%) of the respondents reported that malaria treatment was available at the hospital however in small quantities while 35(71.6%) of the respondents reported that malaria treatment was not available in the hospital and they were always told to go and buy it by themselves. This left those who cannot afford buying the treatment susceptible to malaria infection thus high malaria prevalence among pregnant women.

These findings agree with the findings of Hill J et al, 2013 who conducted a study in sub Saharan Africa which indicated that health facility issues like stock outs increased the burden of malaria among pregnant women.

5.2 SOCIO DEMOGRAPHIC FACTORS ASSOCIATED WITH MALARIA PREVALENCE AMONG PREGNANT WOMEN ATTENDING ANTENATAL CLINIC AT KAGADI HOSPITAL.

5.2.1 Maternal age

Maternal age was greatly associated with malaria prevalence among pregnant mothers attending antenatal clinic at Kagadi hospital. 19(38.8%) of the respondents were between the age of 18-25 years; 22(44.8%) were between 26-35 years and 08(16.4%) were between 35-50 years.
This was because women of a greater maternal age had been exposed to malaria before. These study findings agree with the study findings of Chimere O Agomo and Oyibo, 2013, who conducted a study in Lagos Nigeria and indicated that maternal age was associated with malaria prevalence among pregnant women as pregnant women of young maternal age were at great risk of malaria infection.

5.2.2 Education.

Education was associated with malaria prevalence among pregnant women attending antenatal clinic at Kagadi hospital. 30(61.2%) of the participants had attended primary level of education; 10(19.4%) had attended secondary level; 01(03%) had attended tertiary level and 08(16.4%) had not gone to school at all. There was high malaria prevalence among participants who had not gone to school and those with a primary level compared to those with a higher education that is secondary and tertiary education. This was attributed to ignorance about malaria preventive measures among those without education or with less education. These findings agree with the findings of Fana et al, 2015, who conducted a study in a semi urban area of Argugu, North west Nigeria and indicated that malaria prevalence was high in women with no education and less educated compared to the highly educated pregnant women;
5.2.3 Gravidity.

Gravidity was associated with malaria prevalence among pregnant women. 16(32.8%) of the participants were primigravidas and 33(67.2%) had at least had one pregnancy and above before. Primigravidas had an increased malaria prevalence compared to their counterparts who had been pregnant before. This was attributed to the fact that women who had more than one pregnancy before had been exposed to malaria in the previous pregnancies. These findings agree with the findings of Eijk et al, 2015, who conducted said that primigravidas were susceptible to malaria more than the non-pregnant women and the multigravidas from the same population.

5.2.4 Housing.

Poor housing was not associated with malaria prevalence among pregnant women. 47(95.9%) of the participants lived in houses in good condition while only 02(4.1%) lived in houses in poor conditions. Women who lived in poorly roofed, houses with other inlets other than the windows doors and ventilators had suffered from malaria however they were very few since most of the participants lived in houses of good condition. This was because mosquitoes would easily access these mothers living in such houses thus increasing malaria prevalence. These are in agreement with the findings of Coleman et al, 2010, who conducted a study in South Africa which indicated that there was a high malaria infection risk of people living in poor housing compared to those living in good housing.
5.3 INDIVIDUAL FACTORS.

The individual factors studied were: Knowledge about malaria; use of an ITN every night; attendance of antenatal clinic; completion of malaria prophylaxis treatment; knowledge about malaria prevention practices; Presence of an auto immune disease like AIDs.

5.3.1 Knowledge about malaria.

In this study, knowledge about malaria prevention was associated with malaria prevalence 13 (26.5%) of the participants did not have correct knowledge about malaria prevention and 36(73.5%) had correct knowledge about malaria. Those who did not have correct knowledge about malaria were susceptible to malaria infection at any time in case they came into contact with infected anopheles mosquito because they did not know how to prevent malaria infection. These findings agree with the findings of Tobin W et al, 2016, who conducted a study in North Nigeria which revealed that knowledge about malaria was associated with malaria prevalence among pregnant women.

5.3.2 Use of an ITN every night.

This was greatly associated with malaria prevalence among pregnant women 09(18.4%) of the participants reported not sleeping under an ITN every night while 19(38.8%) reported sleeping under an ITN once in a while whereas 21(42.9%) reported sleeping under an ITN every night.
Those who never used an ITN daily and those who used it once in a while had a very high malaria prevalence compared to those who used an ITN every night who had less malaria prevalence. This was because those who slept under an ITN every night were protected from infected mosquitoes which caused malaria thus less prevalence of malaria in these women. These findings agree with the study findings of Fana et al, 2015, who conducted a study in Argugu North Nigeria which indicated that use of ITN was significantly associated with malaria prevalence as the number of participants who did not use an ITN regularly reported a high occurrence of malaria infection compared to those who slept under an ITN every night.

5.3.3 Uptake of IPT.

This was associated with malaria prevalence among pregnant women. 38(77.6%) of the participants had taken IPT while 11(22.4%) had not taken IPT completely. This exposed mothers who had not taken IPT or not completed the dose to malaria infection. This is because the mothers were not protected from malaria during their pregnancy. These findings are in agreement with the study findings of Bako et al, 2009, which indicated that non utilization of IPT was associated with the prevalence of malaria among pregnant women.

5.4 CONCLUSION

The study established that malaria prevalence among pregnant women in Kagadi district was high and was contributed to the following factors: Health service factors such as distance from the health facility, availability of health workers at the
hospital, health worker’s attitudes towards the pregnant women and availability of IPT and malaria treatment at the hospital. Socio-demographic factors such as maternal age, education, distance of homes from the water body, nature of housing and gravidity.

Individual factors such as knowledge about malaria infection, use of ITNs and uptake of IPT by pregnant mothers.

5.5 RECOMMENDATIONS

When implementing malaria control interventions in Kagadi district, the DHT should take into account the high prevalence of malaria among pregnant women.

More efforts should be put in health educating the public through radios, televisions, home visits about malaria and its preventive measures to equip the public with the knowledge about malaria.

Efforts should be put in extending health centers to villages in Kagadi district to enable easy access to health services by pregnant mothers in order to fight malaria prevalence among pregnant women.

5.6 IMPLICATIONS TO THE NURSING PRACTICE

The study established that malaria prevalence was high among pregnant women ion Kagadi district. This calls for nurses’ efforts in health educating the public about malaria and its preventive practices during pregnancy. It also calls for nurses to organize community outreaches so that pregnant mothers who cannot afford reaching
the far health facilities for malaria IPT can be treated.
REFERENCES.


Francesco Ricci. Social Implications of malaria and their relationship with poverty; 2012


Godfrey Mubyazi, Paul Bloch, Mathias Kamugisha, Andrew Kitua and Jasper Ijumba. Intermittent preventive treatment of malaria during pregnancy: a quantitative study of knowledge, attitudes and practices of district health managers,


Karen N Zablon, Charles Kakilla, Tatiana Lydian, Victoria Minakova, Alphaxad Chibago and Zanda Bochkaeva. Prevalence of plasmodium falciparum malaria among pregnant students in Dodoma regional Tanzania; No cases have been detected. Malaria Research and Treatment, 2015.


APPENDICES

APPENDIX I: CONSENT FORM

Good morning / afternoon / evening

Am by names of AHURRA MIRIAM, a student at Kampala International University Nursing School, pursuing a diploma in nursing. Am conducting a study on factors associated with malaria prevalence among pregnant women attending antenatal clinic at Kagadi hospital. The purpose of the study is for the partial fulfillment of academic requirements for the award of a diploma in nursing.

You have been selected randomly (by chance) and your participation in this study is voluntary. The participant is free to answer questions that he/she feels free answering them. No one will be forced to answer any question out of his or her wish. The participant is free to stop the interview at any time if you feel not comfortable to continue. All the information that will be provided during this interview will be kept confidential and no one will be negatively affected by the information provided. Your participation in this study will be highly appreciated.

If u agree to participate in this study, you can sign below;

Signature/ thumb print of respondent.................................................................

Date............................................................................................................................
APPENDIX II: QUESTIONNAIRE

SECTION A: DEMOGRAPHIC AND SOCIODEMOGRAPHIC FACTORS.

1. Age in years (tick the age bracket)
   a. 18 - 25
   b. 26 - 40
   c. 41 - 50
   d. 50 and above

2. Location (fill in the blank)
   a. Sub-county
   b. Parish
   c. Village
   d. District

3. Nature of the house the mother is staying in.
   a. Grass thatched with mud and wattle walls
   b. Iron roof with mud and wattle
   c. Iron roof with brick walls with a ceiling
   d. Others (specify)

4. Is your home near any water body? (Pond, river, lake, stream, swamp etc.)
a. Yes

b. No

If yes, how far is the water body from the house?

a. Less than 1km

b. More than 1km

5. What is your level of education?

a. Primary

b. Secondary

c. Tertiary

d. None

6. What kind of work do you mainly do? (Occupation)

a. Farmer

b. Business person

c. Civil servant

d. NGO worker

e. Others (specify).................................................................

7. What is your husband’s occupation?
a. Farmer
b. Business person
c. Civil servant
d. NGO employed
e. Not employed
f. Others (specify)...

8. What is your religion?
   a. Catholic
   b. Protestant
c. Muslim
d. Pentecostal
e. SDA
f. Others (specify)...

9. What is your monthly income?
   a. Less than 10,000 per month.
   b. More than 10,000 per month

11. Marital status
a. Married

b. Window

c. Separated

d. Single

**SECTION B: HEALTH SERVICE FACTORS**

1. How far is the nearest health facility from your home?
   
a. Less than 5km
   
b. More than 5km

2. How do you get to the nearest health facility?
   
a. Walk on foot
   
b. Using a bicycle
   
c. Using a motor cycle
   
d. Using a car
   
e. Others (specify).........................................................
SECTION C: INDIVIDUAL FACTORS

1. Have you ever suffered from malaria?
   a. Yes.
   b. No

2. Do you have a mosquito net?
   a. Yes
   b. No

3. Do you sleep under a treated mosquito net every night?
   a. Yes
   b. No
   c. Once in a while

6. How old is your pregnancy?

   ..............................................................................................................

7. Do you think a pregnant woman should sleep under a treated mosquito net?
   a. Yes
   b. No
   If yes, why?
9. From the time you understood that you are pregnant, have you ever taken Fansider tablets as a way of prevention of malaria?
   a. Yes
   b. No

   If yes, how many times? (Ask for antenatal card to confirm).
   a. One time
   b. Two times
   c. Three times
   d. More than three times

13. Do you know how malaria can be prevented?
   a. Yes
   b. No

14. Do you know what malaria means?
   a. Yes
   b. No
15. How many pregnancies have you had before?

a. First pregnancy.

b. Second and above.
APENDIX 3: A MAP OF UGANDA SHOWING THE LOCATION OF KIBAALE DISTRICT
APENDIX 4: A MAP OF KIBALE DISTRICT SHOWING THE LOCATION OF KAGADI SUB-COUNTY.
TO WHOM IT MAY CONCERN

Dear Sir/Madam,

RE: AHURRA MIRIAM - DNS/0001/14/NDU

The above mentioned is a student of Kampala International University – School of Nursing Sciences undertaking Diploma in Nursing Science and she is in her final academic year.

She is recommended to carry out her data collection as a partial fulfillment for the award of the Diploma in Nursing Science.

Her topic is FACTORS ASSOCIATED WITH MALARIA PREVALENCE AMONG PREGNANT WOMEN ATTENDING ANTENATAL CLINIC AT KAGADI HOSPITAL KIBAALE DISTRICT WESTERN UGANDA

Any assistance rendered to her will be highly appreciated.

Thank you in advance for the positive response.

[Signature]

Natalinna Sarah
RESEARCH COORDINATOR