KNOWLEDGE, ATTITUDES AND PRACTICES OF PREGNANT WOMEN ON PRECONCEPTION CARE IN BLANTYRE URBAN, MALAWI

Msc. (Midwifery) Thesis

By

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DECLARATION

I, Violet Talinda Chisoni Khonje, hereby declare that this thesis is my original work which has not been submitted to any other institution for similar purposes. Where other people's work has been used, acknowledgement has been made.

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Signature

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Date

Certificate of Approval

We, the undersigned, hereby certify that this thesis is the student's own work and effort and has been submitted with our approval.

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DEDICATION

I dedicate this work to my husband, son and daughter, thank you for your support and encouragement.

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ABSTRACT

Preconception care (PCC) is the care given to adolescents, women and couples prior to pregnancy. PCC has shown to improve the health of the mother and of the expected baby. Lack of PCC has resulted in continued occurrence of preterm birth, small for gestation babies, abortions, stillbirths and other pregnancy related complications despite prenatal care. In Malawi, studies on knowledge, attitude and practices of pregnant women were not traced. A descriptive quantitative study was conducted to explore knowledge, attitudes and practices of pregnant women on preconception care in Blantyre Urban. The main objective of the study was to explore knowledge, attitudes and practices of pregnant women on preconception care. The specific objectives were to; assess the knowledge of pregnant mothers on preconception care, describe the preconception practices that pregnant women were involved in, assess attitudes and beliefs of pregnant women on preconception care and describing factors that influence preconception care practices among pregnant women.The study setting was Limbe and Ndirande Health Centres. A total of 767 pregnant women; 384 from Limbe and 383 from Ndirande Health Centres were interviewed using a semi structured questionnaire. Consecutive sampling was used to recruit respondents for the study. Statistical Package for Social Sciences (SPSS) version 20 was used to analyse data. The study findings have shown lack of knowledge on PCC. Majority of women (70%; n=537) do not practice PCC while few (22.3%; n=171) have HIV testing to prevent mother to child transmision (PMTCT) of HIV. Most

respondents (97.3%; n=746) demonstrated positive attitude towards PCC. Close to half of the respondents (49.2%; n=377) felt that health workers would influence them to attend PCC services seconded by respondents' spouses (31.7%; n=243). Further, knowledge on PCC was mentioned as the major factor that would influence PCC attendance of most respondents (72.5%; n=556). There is need to educate women of childbearing age on the importance of PCC. PCC needs to be provided both at hospital and community level in order to reach majority of people.

Key words:Adolescents, Couples, Women, Preconception Care, Pregnancy, Outcome, Knowledge, Practices.

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LIST OF ABBREVIATIONS

AIDS	Acquired Immune Deficiency Syndrome
ANC	Antenatal Care
COMREC	College of Medicine Research and Ethics Committee
DHO	District Health Office
HIV	Human Immunodeficiency Virus
KCN	Kamuzu College of Nursing
MDGs	Millennium Development Goals
PCC	Preconception Care
STI	Sexually Transmitted Infections
UN	United Nations
UNAIDS	United Nations Programme on HIV/AIDS
UNCEF	United Nations Children's Fund
WHO	World Health Organization

CHAPTER 1

Introduction and Background

Introduction

Preconception care (PCC) is any intervention given to women of child bearing age prior to pregnancy aimed at improving the health of women, neonates and children (Bhutta & Lassi, 2007). The interventions mainly focus on health promotion, behaviour modification, screening and treatment with the aim of reducing risk factors that can affect pregnancy outcomes (Tuomainen, Cross-Bardell, Bhoday, Qureshi, & Kai, 2013). Provision of PCC to women has shown to improve the health of the mother and of the expected baby (Atrash, Johnson, Adams, Cordero, & Howse, 2006). Lack of PCC has resulted in continued occurrence of preterm birth, small for gestation babies, abortions, stillbirths and other pregnancy related complications despite prenatal care (Bhutta & Lassi 2007). The preconception period is the best time to identify and manage risk conditions that will affect the mother and the foetus. For example PCC offers an opportunity to counsel couples and mothers on nutrition. One's nutrition status has an impact on pregnancy outcomes and subsequent newborn growth and development. Low nutrition status results in delivery of low birth weight, or preterm who are prone to infections and breathing difficulties (Bhutta & Lassi, 2007). On the other hand, over nutrition increases the risk of preeclampsia and diabetes in pregnancy and often complicates to stillbirths and congenital abnormalities in the newborn (Becker, Vermeulen, Wyatt, Meier, & Ray, 2008).

In addition to nutrition counseling, clients who attend PCC are provided with folic acid and multivitamin which are essential for the prevention of neural tube defects and preeclampsia (Bhutta & Lassi, 2007; Cetin, Berti, & Calabrese, 2010). Intake of these micronutrients in pregnancy may not be effective to prevent congenital abnormalities as compared to preconception period (Mazza & Chapman, 2010). Spinal bifida, hydrocephalus and talipes are on the increase among newborns in Malawi (Mkandawire & Kaunda, 2004; Msamati & Igbigbi, 2000). The occurrence of these abnormalities could be reduced with interventions given preconceptionally such as folic acid supplementation.

PCC has also helped to institute interventions on the prevention of mother to child transmission of HIV (Ebrahim et al., 2006). Early initiation of antiretroviral therapy prior or early in pregnancy has proven to be effective in prevention of mother to child transmission of HIV (Abrams, Myer, Rosenfield, & El-Sadr, 2007). Malawi had about 17,000 women aged 15-49 years who acquired HIV in 2014 (UNAIDS, 2015). Further, studies conducted in Malawi among women who have HIV infection and health services providers working in HIV Care clinics have shown that there is a desire for pregnancy among women or couples who are infected with the virus (Kawale et al., 2014; Kawale, Mindry, Phoya, Jansen, & Hoffman, 2015). PCC can help to reduce transmission of the virus to babies born to these women.

According to HMIS data from Blantyre District Health Office (DHO) for the fiscal year 2014 to 2015, two thousand two hundred and seventy nine (2279) women got pregnant while on antiretral viral therapy (ART), 549 pregnant women started therapy in first and second trimester, 896 in third trimester and 66 women were initiated while in

labour. Further, 704 women were diagnosed to have pre-eclampsia, 172 had abortion complications, 103 severe aneamia, 43 sepsis while 3032 experienced pregnancy related complications.

Despite the fact that women receive care during the antenatal period, some of the conditions and behaviours women have are supposed to be managed prior to pregnancy. In Malawi most women start antenatal care late hence difficult to manage all the complications women may have (Chiwaula, 2011). Currently, Malawi has no structured PCC services though partial aspects of PCC are seen in family planning services, youth friendly services and HIV management. Properly structured PCC services in Malawi can help to reduce the high morbidity and mortality rates among women and neonates through early identification and management of conditions that threatens pregnancy outcomes.

Additionally, no published studies on PCC were traced in Malawi on knowledge, attitudes and practices of women regarding preconception care. Therefore, a quantitative study was conducted to explore the knowledge, attitudes and practices of women on PCC. The knowledge generated will help health care providers to develop standards and reorganize services so that PCC is provided to adolescents, women and couples prior to pregnancy.

Background

Globally, there are several interventions that are being carried out to reduce the burden of maternal and child morbidity and mortality. The World Health Organization (WHO) has been working with the United Nations Children's Fund (UNICEF), United Nations Population Fund and the World Bank to improve maternal, neonatal and child

health (Meeting to Develop a Global Consensus on Preconception Care to Reduce Maternal and Childhood Mortality and Morbidity, 2012). Maternal, newborn and child health services have been integrated at every level of health care with the aim of reaching out many people so that complications are prevented (Atrash et al., 2006).

Health care providers have been trained to identify risk conditions in pregnant mothers to ensure that mothers go through pregnancy, labour and postpartum period without problems. Focused antenatal care has been recommended by WHO with the aim of motivating women to have early antenatal care and targeted visits for identification and management of complications (Umeora, Sunday-Adeoye, & Ugwu, 2008). Despite this strategy some women continue to have poor pregnancy outcomes (Dowswell et al., 2010). In addition, many women do not report early for antenatal care such that initiation of preventive interventions may be difficult (Pell et al., 2013).

The United Nations (UN) introduced the Millennium Development Goals (MDGs) with the aim of reducing maternal, neonatal and child mortality by three quarters in 2015. Globally progress has been made in that deaths related to pregnancy and child birth have reduced from 523,000 in 1990 to 289,000 in 2013 (OECD & WHO, 2014). The global neonatal mortality has reduced from 33 to 20 deaths per 1,000 live birth (Alkema, Chao, You, Pedersen, & Sawyer, 2014). Despite the decrease in maternal and neonatal mortality globally, the Sub Saharan region has the highest maternal mortality ratio estimated at 510 per 100,000 live births. In addition, one out of eleven children born in the region dies before reaching five years of age (Say et al., 2014). In Malawi the maternal mortality ratio is at 675 per 100,000 while neonatal and child mortality is at 31 per 1000 and 50 per 1000 respectively (National Statistical Office, 2011a). The deaths

are higher than the global and the regional figures. Some of these deaths are attributed to poor health seeking behaviour among women. Despite that most pregnant women are delivered by skilled attendants in Malawi , most of them start antenatal care in their 2nd and 3rd trimesters and often have only one visit (Chiwaula, 2011). Late antenatal care deprives women of the essential care that would help reduce complications. If mothers are seen prior to pregnancy, the complications would be minimized further (Bhutta & Lassi 2007).

In the United States of America, Netherlands and Australia, PCC has helped adolescents and women to plan their pregnancies, stop alcohol intake and smoking prior to pregnancy, start antenatal care early and to have reduced neonatal deaths. In addition, the services have helped women to access folic acid prior to pregnancy which is essential for prevention of neural tube defects (Dean et al., 2014). Smoking and alcohol intake prior or during pregnancy may result in developmental abnormalities in the newborn (Aragón et al., 2008).

In China (Hong Kong), provision of PCC helped to identify and manage medical conditions that women had prior to pregnancy. In addition, China registered an increased number of women and couples testing for HIV prior to pregnancy due to PCC services (Ebrahim et al., 2006). Observed benefits from PCC such as decline in birth rates and recognition of the risks associated with pregnancy helped Hong Kong and South Korea to start PCC in 1998 and 2004 respectively. About 4000 women have benefited from PCC in Hong Kong while 60% of women in South Korea have had medical problems treated prior to conception thereby reducing adverse effects during pregnancy (Ebrahim et al., 2006).

In the United States of America stakeholders agreed and made recommendations that PCC should be considered as one of the primary health care interventions to reduce incidences of prematurity, congenital abnormalities, infant morbidity and mortality as well as unwanted pregnancies (Dunlop, Jack, & Frey, 2007).

Despite the benefits that PCC offers to adolescents, women and couples, many countries do not have policies and guidelines for the provision of the services. Health care providers have problems to provide PCC due to lack of these policies and guidelines(Curtis, Abelman, Schulkin, Williams, & Fassett, 2006) . There is no standard care offered to clients as a result of lack of guidelines (Curtis et al., 2006) In the United Kingdom, obstetricians offered whatever service they felt was necessary for their clients as part of PCC (Morgan, Hawks, Zinberg, & Schulkin, 2006).

Adolescents, mothers and couples should evaluate their health to see whether it is feasible to be pregnant (Hoyt, Storm, Aaron, & Anderson, 2012). PCC advocates that pregnancy should be planned. However, unplanned pregnancies are on the increase (Singh, Sedgh, & Hussain, 2010; Henry et al., 2014). Globally, there were about 208.2 million pregnancies in 2008 with 41% of them being unplanned. In Africa there were 49.1 million pregnancies with 39% of them being unplanned (Singh et al., 2010). Unplanned pregnancies are expensive to manage. In Norway the estimated cost for unintended pregnancy was about 164 million Norwegian Kroner among adolescents and young women aged 15 to 24 years (Henry et al., 2014). Apart from being expensive women who have unplanned pregnancy experience physical and psychological problems during pregnancy, labour and delivery. In a study done in Turkey by Karaçam, Önel and Gerçek (2011) women with unplanned pregnancies presented with mild aneamia, raised

blood pressure, risk of preterm delivery and postpartum depression compared to those with planned pregnancies. Similar findings were noted in a review done in developed and developing countries in which women who had unplanned pregnancies indulged in risky behaviours such as alcohol intake, use of illicit drugs and cigarette smoking. Most of them did not attend antenatal care or started antenatal care late while some had spontaneous abortions and low birth weight babies (Gipson, Koenig, & Hindin, 2008).

In Malawi there are no structured PCC services despite having poor maternal and neonatal outcomes. Most women are diagnosed with conditions such as aneamia, hypertension sexually transmitted infections (STIs) and malnutrition during pregnancy which result in death of mother or the newborn (UNCEF, 2007). Provision of PCC to women may help to detect and manage these conditions early before complications occur hence the need to explore knowledge, attitudes and practices of women on PCC.

Problem Statement

Preconception care is important in identifying and managing conditions that threaten pregnancy outcomes. There is evidence that women who have undergone PCC have planned pregnancy, start antenatal care early and have reduced risk of pregnancy related conditions such as preeclampsia, gestation diabetes, aneamia, abortions, preterm delivery, intrauterine growth retardation and delivering babies with congenital abnormalities compared to those who do not attend PCC(Atrash et al., 2006). In Malawi, some women are diagnosed with aneamia, under nutrition, STI and HIV, hypertension, urinary tract infections while pregnant (van den Broek, Jean-Baptiste, & Neilson, 2014). These conditions may result in abortion, preterm delivery, postpartum heamorrhage for the

mother and sepsis and prematurity in the newborn. Provision of micronutrients, nutrition counselling, screening and management of medical conditions and prevention of risky behaviours such as cigarette smoking and alcohol intake during PCC can help to reduce maternal and neonatal morbidity and mortality. Although there have been no general population based studies of PCC in Malawi, there have been focused efforts to provide PCC with HIV positive couples to ensure safer pregnancy outcomes (Kawale et al., 2014, 2015). Knowledge on PCC can help women with chronic conditions that worsen with pregnancy utilize available PCC services so that pregnancy related complications are reduced. This prompted the researcher to explore knowledge, attitudes and practices of pregnant women regarding PCC in Blantyre urban.

Significance of the Study

The study results will help to generate information on knowledge, attitudes and practices of mothers prior to pregnancy. The information will help to reorganize the delivery of nursing and midwifery services so that PCC is provided as a package to all couples and mothers preparing to get pregnant. Results will assist in the updating of policies and standards for the provision of PCC. Furthermore, results will help to plan education messages so that women understand the relationship between one's health status and pregnancy outcomes to ensure that pregnancy is planned. The study results will provide opportunity for the training of service providers on PCC so that quality services are provided to clients.

Study Objectives

Broad Objective

To explore knowledge, attitudes and practices of pregnant women on preconception care.

Specific Objectives

1. To assess the knowledge of pregnant mothers on preconception care.
2. To describe the preconception practices that pregnant women were involved in.
3. To assess attitudes of pregnant women on preconception care.
4. To describe factors that influence preconception care practices among pregnant women.

CHAPTER 2

Literature Review

Introduction

This chapter presents the review of studies related to PCC. The literature search focused on local and international studies. However, no studies on PCC were traced locally. The local studies found were not specifically on PCC but were used to support some of the information found in the other resources. The review was done to know what is known on PCC. Journals and peer reviewed articles published from 2000 to 2016 were used.

The databases used were mainly Google Scholar and HINARI. The search terms used were preconception care, preconception care AND knowledge, preconception care AND practices, preconception care AND attitudes AND beliefs, preconception care AND influencing factors. Citations / referencing style used were APA format. The reviewed literature has been presented in accordance with the study objectives.

Knowledge of women on preconception care (PCC)

Knowledge on the importance and availability of health services is essential if girls, women and couples are to use the services fully. Knowledge on PCC motivates clients to seek and demand for the services (Dean et al., 2013). Interventional trials on PCC conducted in Pennsylvania and China helped to improve knowledge of clients on

PCC (Charron-Prochownik, Ferons-Hannan, Sereika, & Becker, 2008; Ebrahim et al., 2006). In Pennsylvania, teenagers (n=53) aged 16 and 19 who were randomized into groups and given information, books, CD ROMs and counselling on PCC demonstrated adequate knowledge on importance of PCC and the need to stabilize their health prior to pregnancy (Charron-Prochownik et al., 2008). In China there was an increased demand for HIV /PCC services after understanding its importance. The clinic registered 1099 of the 1500 couples each month requiring preconception counselling and testing for HIV (Ebrahim et al., 2006).

On the contrary, a number of studies that have been conducted in developed and developing countries have shown that women have inadequate knowledge on PCC (Mazza & Chapman, 2010; Olayinka, Achi, Amos, & Chiedu, 2014 &Tuomainen, Cross-Bardell, Bhoday, Qureshi, & Kai, 2013) In a study conducted in Australia among 17 women whose aim was to explore factors that would enable utilization of PCC services , women preferred prenatal care to PCC due to lack of knowledge on the importance of PCC. Utilization of PCC was practiced by women who had experienced birth related complications after health service providers had counselled them to do so (Mazza & Chapman, 2010).

Further, Olayinka et al.(2014) in the study on awareness and barriers to utilization of maternal health care services(MHCS) in Nigeria found that only 2 out of 192 women knew about PCC. The majority of women did not utilize PCC services due to lack of knowledge and unavailability of the services in their setting. Additionally, Tuomainen et al. (2013) in a study that was aimed at finding opportunities and challenges for enhancing PCC in primary care among 41 women of diverse ethnic origin such as

Pakistani, Indian, Caribbean, African in the United Kingdom found that there was little knowledge on PCC despite that the women were attending other primary healthcare services.

Lack of knowledge on PCC makes women get pregnant without stabilizing pre-existing medical conditions which may worsen during pregnancy. It has been observed that most couples, women and adolescent girls are not knowledgeable on how their health conditions and social behaviours can affect pregnancy and its outcome (Dean et al., 2013). Studies conducted on women with chronic medical conditions have shown that no or little precaution is made prior to pregnancy (Chuang, Velott, & Weisman, 2010; Diabetes and Pregnancy Group, 2005; King & Wellard, 2009;

According to (Chuang, Velott, & Weisman, 2010) in a study conducted in USA, on knowledge, attitudes related to pregnancy and preconception health in women with chronic medical conditions, most women did not plan their pregnancies despite having knowledge on the risk factors that would arise during pregnancy as a result of their condition. They felt they were healthy and can go through pregnancy without preconception care. In a related study, French women who had diabetes mellitus did not know how their condition would impact pregnancy outcomes (Diabetes and Pregnancy Group, 2005). Further, in Australia, women with diabetes experienced low blood sugar levels, an increase in weight gain, visual disturbances and numbness during pregnancy due to lack of interventions prior to conception (King & Wellard, 2009).

On the other hand, studies conducted in Malawi among HIV couples and health service providers have shown that there is a desire for conception among couples (Kawale et al., 2014; Kawale, Mindry, Phoya, Jansen, & Hoffman, 2015). According to

Kawale and colleagues (2014) couples have a desire to have children despite their HIV status. The decision to get pregnant is either made sorely by the male counterpart or is an agreement by both. Further, providers have shown that they met couples who desire to have children and do not restrict clients from doing so (Kawale et al., 2015). However, these clients can have safe pregnancy outcomes if they have adequate knowledge on how HIV will impact pregnancy so that necessary precautions are taken prior to conception.

Apart from failure to stabilize ones medical condition, lack of knowledge on PCC makes women to have unplanned pregnancies which may further worsen their condition. A study conducted in Turkey which aimed at investigating the effects of unplanned pregnancy found that women developed aneamia in pregnancy, gestation diabetes, raised blood pressure and were at a higher risk of developing postpartum depression (Karaçam et al., 2011).

Some studies have found an association between one's education level and knowledge of PCC (Ezegwui, Dim, Dim, & Ikeme, 2008; Weisman et al., 2008). According to Ezegwui et al.(2008) women, in Nigeria, who were less educated had little knowledge on PCC compared to those with higher education. Similarly, in Pennsylvania Weisman et al. (2008) found that women who had higher education had control over their preconception health and able to influence their partners to utilize PCC services.

Apart from education and parity, previous pregnancy related complications are thought to increase women's knowledge on PCC and its utilization. In a study done in Pakistan, India, Caribbean region , Africa and elsewhere it was found that utilization of PCC was common among women who had delivered once or twice unlike those who had

not delivered before and those with higher parity (Lum et al., 2011; Tuomainen et al., 2013).

Practices of Women Prior or During Pregnancy

The practices or behaviours that women, couples and adolescent girls engage in prior or during pregnancy can have adverse effects on health of the mother or the foetus. Most women of the reproductive age have inadequate knowledge on the effects of their social behaviour on pregnancy outcome as a result they indulge in risky behaviours (Dean et al., 2013). Alcohol intake and cigarette smoking are the common risky behaviours that are practiced prior or during pregnancy. Alcohol intake during pregnancy regardless of amount is associated with fetal alcohol syndrome. The effects of alcohol intake during pregnancy affect growth and development of the child for lifetime. Affected children may have speech, motor and intellectual problems (Aragón et al., 2008).

Studies done in developed countries have shown that a considerable number of women do take alcohol prior or during pregnancy (Lum et al., 2011; Naimi, Lipscomb, Brewer, & Gilbert, 2008; Tough, Tofflemire, Clarke, & Newburn-Cook, 2006). A cohort study done by Lum et al. (2011) which intended to find the behaviour of women prior to pregnancy found that women did not stop taking alcohol despite planning to get pregnant. In a sample of 1042 in Canada 80%, 50% and 18% took alcohol prior, before recognizing and after recognition of pregnancy respectively (Tough et al., 2006). In USA, 14% of 72907 combined smoking and alcohol intake (Naimi et al., 2008).

A study on maternal and newborn health profile in Canada conducted among 453 women revealed that 38% of the women smoked prior to pregnancy and 34.9% of them

continued to do so during pregnancy (Oliveira et al., 2013). Smoking alters the parents DNA which end up with chromosomal abnormalities and other defects such as cleft lip, short limbs in the newborn and contributes to low birth weight among babies (Sawnani, Olsen, & Simakajornboon, 2010; Centers for Disease Control and Prevention (US), National Center for Chronic Disease Prevention and Health Promotion (US), & Office on Smoking and Health (US), 2010).

In addition to taking alcohol and smoking, some clients go through pregnancy while obese. Obesity during pregnancy predisposes mothers to pregnancy induced hypertension and gestation diabetes (Becker et al., 2008; Centre for Maternal and Child Enquiries (CMACE), 2010; Chu et al., 2007). The risk for developing gestational diabetes for overweight, obese and severe obese women in US was estimated to have an odds ratio of 2.14, 3.56 and 8.56 respectively when compared to women with normal weight gain (Chu et al., 2007a). Further, it has been noted that preeclampsia may start as early as 17th week of pregnancy with an odds ratio of 4.1 when compared with normal weight women (Becker et al., 2008).

Apart from developing medical conditions, obese women have a higher chance of delivering stillbirths. In UK out of 5068 women who were obese during pregnancy 23.3% developed medical problems, 9% had pregnancy induced hypertension while 8% developed gestation diabetes. Out of the women who developed the above complications there were 43 stillbirths representing 8.6 stillbirths per 1000 births (Centre for Maternal and Child Enquiries (CMACE), 2010). Interventions during the preconception period can help to improve the health of women. A study conducted in Pennsylvania which introduced preconception interventions among obese women helped to reduce the risk of

gestational diabetes and preeclampsia through proper diet, weight control and folate and multivitamin supplements (Weisman et al., 2011).

Furthermore, some women become pregnant while underweight. A study done in San Francisco on pre-pregnancy health status and the risk of preterm delivery found that women who are underweight have an increased risk of delivering preterm babies with an odds ratio of 2. 38 (Haas et al., 2005). Similar findings have been reported by Bhutta and Lassi (2007) in a review on preconception care and nutrition interventions conducted across low and middle income countries.

On the contrary, women who have gone through preconception care are able to modify their behaviour and adopt lifestyles that would result in good pregnancy outcome. In a study conducted in Netherlands by Elsinga et al.(2008) on effects of PCC counselling on lifestyle and other behaviour before and during pregnancy, women were equipped with knowledge, reduced alcohol intake and started using folic acid prior to pregnancy to prevent birth defects.

Attitudes and beliefs towards Preconception care

Women of child bearing age have different attitudes or beliefs towards PCC. Knowledge on health issues is thought to influence clients' utilization and attitude towards health services. Findings from studies done on PCC have shown mixed views on attitudes and beliefs on PCC. A study on pregnancy planning that aimed to explore attitudes of diabetic women towards PCC revealed that women were not concerned about PCC and felt it was not important. Most of them felt that to receive information and required care on ones condition prior to pregnancy would bring anxiety (McCorry, Hughes, Spence, Holmes, & Harper, 2012).

In a qualitative study on improving preconception care conducted in Australia by Mazza and Chapman (2010), women who lacked knowledge on PCC had the belief that prenatal care can offer all the services required for one to have good pregnancy outcome. Women felt that PCC was necessary for those who had experienced birth related complications. In addition, other women felt that pregnancy occurs naturally and there is no need to have any care prior to it. The findings by Mazza and Chapman correlate with what Callender et al. (2001) found that mothers who delivered babies with neural tube defects did not use PCC services initially but did so in subsequent pregnancies. Similar findings have also been reported by Tuomainen et al (2013) in UK where women view that pregnancy or childbirth complications arise only during pregnancy hence they do not attend PCC services.

In a related study conducted in Netherlands despite women acknowledging the importance of preconception counselling and showing positive attitude towards PCC, they did not seek PCC services. Most of them felt they were not the target population for PCC services despite being in the reproductive age and planning to get pregnant. They believed to do their own risk assessment and could not approach a health care provider for the same prior to pregnancy. Others had the belief that PCC was intended for those who had family history of genetically inherited diseases or those who had fertility problems. Further, women felt that seeking PCC would make others look down upon them as being infertile (Zee, Beaufort, Steegers, & Denktaş, 2012).

On the contrary, Holmes et al.(2012) found that diabetic women in the UK developed positive attitudes towards PCC after viewing an educational DVD. The women started to use contraceptives, plan their pregnancy and attending PCC services. In a

related survey done in China, the lifestyles of both men and women changed following the implementation of PCC services. There was use of folic acid prior to pregnancy. Men stopped smoking while women refrained from passive smoking and abstained from alcohol intake prior and during pregnancy (Ding, Li, Xie, & Yang, 2015).

Factors that influence preconception care practices

Studies conducted on PCC have shown that knowledge, policies on PCC, unplanned pregnancy, cultural beliefs, education, problems experienced in past pregnancy and parity can influence women to either attend or not to attend PCC services(Ebrahim et al., 2006; Fischl et al., 2010; Tuomainen et al., 2013; Zee et al., 2012)

Knowledge on PCC influences clients to utilize PCC services and adopt health practices that will positively impact on pregnancy and the foetus. Fischl et al. (2010) in a study on impact of preconception counselling program for teens with type 1 diabetes showed that teens who were counselled and given adequate information on PCC were able to utilize PCC services compared to those who had no information on PCC. The teens that were counselled were able to plan for pregnancy and ensure that their blood sugar levels were controlled prior and during pregnancy.

Policies that are made as regards provision of health services can influence women, girls or couples to attend PCC services. In a review conducted in selected countries on models of preconception care implementation by Ebrahim et al. (2006) , found that deliberate preconception care medical protocol initiated in South Korea that involved health assessment and laboratory investigations motivated women ,couples and

adolescent girls to attend PCC. The initiative reduced the occurrence of pregnancy related complications in 92% of all clients that attended the services. On the contrary, women in China stopped attending PCC services because government had revised its policy on PCC from compulsory to voluntary. The women felt that the services were no longer essential.

Planned pregnancy can influence women to practice preconception care while unplanned pregnancy makes it difficult for women to attend PCC services. In a study on opportunities and challenges for enhancing preconception care in UK by Tuomainen et al. (2013) where 41 women were interviewed, unplanned pregnancy led them not to practice PCC. Similar findings were found by Zee et al.(2012) in Netherlands in a study that wanted to explore women's hesitancy to seek preconception counselling. The findings show that women who were on contraceptives felt that it was difficult to plan pregnancy and incorporate preconception care issues.

Apart from unplanned pregnancy, laziness, cultural factors and not prioritizing PCC services are some factors that may influence preconception care practices among women (Delissaint & McKyer, 2011; Mazza, Chapman, & Michie, 2013; Tuomainen et al., 2013 and Zee et al., 2012). In a systematic review of factors related to preconception behaviours among women in childbearing period in United States, developed and developing countries conducted by Delissaint and McKyer (2011) women reported that they were lazy to seek preconception care. Some of them had heard about preconception care from providers but did not see the need to attend the services. Some women felt that God will help them have better pregnancy outcomes despite being involved in risky behaviour.

On the other hand, Mazza, Chapman, & Michie, (2013) observed that providers do not regard PCC as a priority compared to other preventive services hence clients are not given motivation talks on PCC issues. Some providers feel that some birth related complications can still occur despite PCC interventions. Further, in UK Murphy et al. (2010) in a study on personal experiences of women with diabetes who did not attend preconception care found that poor interpersonal relationship between health workers and the diabetic women led them not to seek care prior pregnancy. Additionally, Tuomainen et al. (2013) found that lack of community based providers in UK made women not to access PCC. Women had the view that PCC should be integrated with other primary care services within the community. Bhutta and Lassi (2007) in a review on preconception care and nutrition intervention have found that community based PCC led to reduction of neonatal mortality by 24%, increased antenatal care attendance and taking of folic acid supplements prior to pregnancy to reduce risk of birth defects.

On cultural issues, pregnancy is regarded as a secret thing among couples hence practicing PCC would reveal their secret intentions to be pregnant if they meet friends in the process of seeking PCC services. Additionally, attending PCC services would provoke stigma if the couple does not get pregnant as the community expects (Zee et al., 2012).

A part from the above factors, McCorry et al. (2012) in a qualitative study among diabetic women on their attitudes towards PCC in Ireland found that good interpersonal relationship and communication skills by providers can motivate clients to attend PCC . In addition, clients felt that health providers need to provide support and personalized care so that attendance for PCC services can increase.

Conclusion

The chapter has covered a review of studies related knowledge, practices, attitudes, beliefs and factors that influence PCC. The findings show that a lot of people lack knowledge. Those that have knowledge have mixed attitudes and beliefs towards PCC. Some view it as an essential component that will result in good pregnancy outcomes while others view it as care for those who have had complications with their previous pregnancies. The review has also shown that some women engage in risky behaviours that would impact pregnancy and foetus negatively. Lack of knowledge, cultural beliefs and unplanned pregnancy have been cited as factors that hinder most women to attend PCC services.

CHAPTER 3

Methodology

Study Design

This was a descriptive quantitative study which aimed at describing knowledge, attitudes and practices of pregnant women on PCC. The design was used to establish whether pregnant women in Blantyre Urban had knowledge on PCC. Further the design helped to describe the practices women were involved in prior or during early pregnancy and their attitudes regarding PCC. The design also helped to generate information on the acceptability of PCC services among women and the challenges associated with the provision of the services. According to Polit and Beck (2010), descriptive studies are helpful in describing a situation and its related factors.

Study Population

Respondents for the study were drawn from pregnant women living in Blantyre. The women were those attending antenatal care at Limbe and Ndirande Health Centres. Pregnant women were chosen because they may have had some care or information provided to them prior to pregnancy regarding preconception care.

Sample size

A sample size that is a representative of the total population helps to generalize research findings to the entire population (Polit & Beck, 2010). The sample size for the

study was calculated using Lemeshow et.al formula 1990 as shown below with a confidence interval of 95%.

$n = z^2 P (1-P)/e^2$

n = is the required sample size

Z = the value of normally distributed variables at 95% confidence interval which is 1.96

P = is the estimated population of pregnant women who attended antenatal care at the study sites(Limbe and Ndirande) for the fiscal year 2014- 2015 out of the expected pregnancies in the catchment population.

e = is the allowable error of the 95% confidence interval which is 5% (0.05 expressed as decimal).

Ndirande Health Centre

Catchment population = 126,737. Expected pregnancies=6337. Number of women that attended antenatal care in the fiscal year July 2014- June 2015= 2979 out of 6337 expected pregnancies (equal to 47% = 0.47 expressed as decimal). Therefore

$n = 1.96^2 \text{ x}0.47 (1- 0.47)/(0.05)^2$

n = 3.84x 0.47 x 0.53/0.0025

n = 382.6176

n =383

Limbe Health Centre

Catchment population = 74398, Expected pregnancies =3720 and the number of women that attended antenatal care in the fiscal year 2014- 2015 were 5005 out of the expected 3720. According to the HMIS desk officer for Blantyre District Health Office (DHO) the antenatal attendance for Limbe Health centre is high because the facility receives women from Bangwe, Machinjiri, Soche and Chigumula townships. Some of the areas in these townships do not fall under the catchment population of Limbe Health Centre hence difficult to isolate the actual antenatal attendance from the catchment population. The researcher therefore used 0.5 as P to calculate the sample size.

$n = 1.96^2 \times 0.5 \times (1- 0.5)/ (0.05)^2$

$n = 3.84 \times 0.5 \times 0.5/ 0.0025$

$n = 384$

Total sample size is 383 plus 384 = 767

Sampling method

Respondents for the study were chosen using consecutive sampling. Consecutive sampling is a non probability type of sampling in which all accessible clients are taken as a sample provided they meet the inclusion criteria up until the required sample is reached. This sampling method helps to get a sample that is likely to be a representative of the target population (Mathieson, 2014). The researcher therefore, approached all pregnant women attending antenatal care at the study sites. The women were found sitting on the waiting areas for the study sites waiting to be attended to. Explanation about the study, inclusion and exclusion criteria was made to all. Information sheet was provided to

illegible respondents and those that consented to participate in the study were interviewed by the researcher after signing a consent form.

Inclusion Criteria

The study recruited pregnant women aged 18 to 49 years of age who were willing to participate in the study. The mothers were those attending antenatal care at Ndirande and Limbe health centres and residing in the catchment area for the two health centres.

Exclusion Criteria

Pregnant mothers who were below 18 years of age and above 49 years. Women below 18 years were considered young and those above 49 years were above the childbearing age. Mothers attending antenatal care at the study sites but were not residing in the catchment area for the sites.

Study site

The study was conducted at Ndirande and Limbe Health Centres in Blantyre City. The Health Centres are under Blantyre District Health Office. Ndirande Health Centre lies in the township of Ndirande to the east of Blantyre City while Limbe Health Centre is to the south east of Blantyre City in the town of Limbe. The two Health Centres were chosen because they offer some of the services that can be offered during preconception period. Some of the services offered include youth friendly services which encompass issues of counselling the youth on abstinence of risky behaviours such as drug and alcohol abuse, and indulgence in premarital sex. In addition, the settings offer screening services for sexually transmitted infections and HIV, family planning services, prevention of mother to child transmission of HIV and general HIV care services, cervical cancer screening, under five services, general out patients services, antenatal, delivery and

postnatal services. Furthermore, these settings save a large catchment population and had a larger number of expected pregnancies in the fiscal year 2014 -2015.In the same year, Limbe Health Centre registered 205 women who got pregnant while on ART, 36 were initiated in 1st and 2nd trimester, 163 started in third trimester, 5 during labour, 34 had pre eclampsia, 2 sepsis, 1 severe aneamia and 236 other pregnancy related complications. At Ndirande Health Centre 223 women got pregnant while on ART, 28 started therapy in 1st and 2nd trimester, 88 in 3rd trimester, 199 had pre eclampsia, 9 abortion complications, 1 sepsis and 537 had other pregnancy related complications.

Data Collection

The respondents of the study were interviewed by the researcher using a semi structured questionnaire. A total number of 767 respondents were interviewed, 384 from Limbe Health Centre and 383 from Ndirande Health Centre. This represents 100% response rate. Data collection lasted for a period of one month and two weeks from 6th April to 11th May, 2016. Approximately 25 pregnant women were being interviewed on daily basis from 7 am to 2pm. Each interview lasted approximately 10 to 15 minutes. Two days per week were used to collect data from Limbe Health Centres (Tuesdays and Thursdays) while three days (Mondays, Wednesdays and Fridays) were used to collect data from Ndirande Health Centre. These days were chosen because the Health Centres register a lot of antenatal attendees. Data were collected at the study sites after getting permission from Blantyre District Health Office (Appendix I), Blantyre City Assembly (Appendix H) and COMREC (Appendix G). Upon reaching the study sites the researcher introduced herself to the Clinical and Nursing in charges of the facilities and briefly explained the intention for the visit. Permission was sought from the in charges to see if it

was feasible to collect data at the sites. The in charges were asked to provide a private area for conducting interviews to ensure privacy. At Limbe Health Centre nursing sisters' office was provided for interviews while at Ndirande Health Centre a cubicle away from where clients were being attended was provided. Eligible clients were briefed and allowed to participate in the study after getting consent (Appendix A and B). The mothers were found on the waiting area for the Health Centres waiting to be attended to. Each interview took approximately 10 to 15 minutes to avoid boredom among respondents which would negatively affect the responses to the questions asked. Respondents were interviewed one by one to avoid biased information.

Data Collecting Instrument

A semi structured questionnaire that contained both open and closed ended questions was used to collect data (Appendix E). The questionnaire assisted the researcher to be systematic and ensure that similar questions were asked to all respondents (Polit & Beck, 2010). A questionnaire developed in English and translated into Chichewa was used to collect data for easy administration of the tool (Appendix E and F). The questionnaire consisted of items on knowledge, practices, attitude of respondents on PCC and factors that facilitate utilization of PCC services. It also included demographics such as age, parity and education level to see whether these were related to the knowledge, practices and attitudes towards PCC. The instrument was developed by the researcher after a review of literature on PCC to ensure that it covered adequate questions that were to answer the study objectives. The literature reviewed was on knowledge of women on PCC, practices, beliefs about PCC and factors that influence PCC utilization. The instrument was divided into 5 parts based on the study objectives

and demographic characteristics of the participants. Translation of the tool into Chichewa was done by the researcher with guidance from research supervisors. Further, the tool was pretested at Zingwangwa Health Centre before actual data collection and necessary corrections were made.

Data management, analysis and presentation

During data collection the questionnaires were assigned numbers based on the number of participants interviewed at each site. A code was used to identify the questionnaires for each site. Limbe health centre questionnaires had L as a code while Ndirande had N (Limbe L1 to 384 and Ndirande N1 to N 383). After each interview, the researcher checked the questionnaire for completeness and accuracy of responses. Data collected was entered on SPSS data base and presented using descriptive and inferential statistics. For open ended questions the researcher read all responses from the data collecting instrument to make sense of the data and capture emerging themes. Using an excel sheet data categories were formed so that similar responses were grouped together based on the theme they belonged to. Then a quantitative summary of responses was made to show the frequency of responses on each theme. Demographic data such as age, education level, gravidity and findings from the knowledge, attitudes, practices and factors that influence PCC were presented using tables, percentages, charts and graphs. Inferences were made using age, gravidity and education of respondents to see if these variables have an influence on respondents' knowledge, attitudes, beliefs and practices regarding PCC. The Chi- square test at 5% significance level was used to describe the association of respondents' age, gravidity and education level to their knowledge,

attitudes, beliefs and practices towards PCC. The Statistical Package for Social Scientists (SPSS) version 20.0 was used to aid the analysis of all data collected from the study.

Validity

To ensure that there is content validity a comprehensive review of literature was done before formulation of the data collecting instrument to ensure that the data collecting instrument has adequate questions addressing the phenomena under study. In addition, the data collecting instrument was reviewed by two lecturers from Maternal and Child Health (MCH) Department at Kamuzu College of Nursing (KCN) who are experts in PCC to ensure that it captures the necessary items that helped to generate adequate information from participants.

To ensure external validity the study respondents were women in their child bearing age so that results can be generalized to women of the same age in Blantyre urban. In addition, the study recruited a sample size that was a representative of the population being studied in order to infer the results to the general population. Furthermore, two study sites were chosen in order to capture respondents from different parts of Blantyre so that generalization of the results will be valid.

Reliability

Before actual data collection, a pilot study was conducted from pregnant women at Zingwangwa Health Centre using the designed data collecting instrument. A total of 8 pregnant women with a mean age of 29.8 were interviewed. All were married. Over half (62.5%; n=5) were in their fourth pregnancy and hard attained secondary education. None was working. Only 1 had heard about PCC from midwives. Most respondents (75%;n=6) had planned to get pregnant but only 25% (n=2) of them had PCC prior to pregnancy.

One was on family planning method while 1 had HIV test. None of the respondents engaged in risk behaviours such as smoking or taking alcohol nor had they conditions that will threaten their pregnancy. All demonstrated positive attitude towards PCC though it appeared difficult for them to understand clearly what PCC was hence majority had difficult to explain the benefits of PCC and their beliefs/ attitudes on the care. On factors that would influence PCC attendance 25% (n=2) mentioned knowledge, 25% (n=2) parents/support from others, 12.5% (n=1) mentioned health workers while the rest had no idea. Modification of the tool was done. The main change that was made was to explain what PCC is to all respondents who will demonstrate inadequate or lack knowledge so that questions that required them to tell the researcher benefits of PCC, attitudes and beliefs were to be answered properly in main study. Time taken to administer the tool was also evaluated to ensure that interviews were done within the minimum set time.

Ethical Consideration

Ethical consideration in a research ensures that normal procedures are followed during the study. It also helps to protect participants of the study (Polit & Beck, 2010). Before actual data collection the proposal to conduct the study was submitted to the College of Medicine Research and Ethics Committee (COMREC) for approval. A certificate of approval was granted after making necessary corrections that the committee suggested (Appendix G). A letter requesting permission to conduct the pilot and actual study at Zingwangwa, Limbe and Ndirande Health Centres were written and permission was granted from Blantyre District Health Office (DHO) (Appendix I) , Blantyre City Assembly (Appendix H).

Upon reaching the study sites the researcher introduced herself to the in charges of the facility and granted them an introductory letter from Blantyre DHO and Blantyre City Assembly. An explanation was made on the research and the procedures that will be followed to collect data from participants. Permission was granted to go ahead and space to conduct interviews was provided.

Respondents were given detailed information about the study regarding the aim of the study and its importance to maternal and child health services in Malawi (Appendix A). No one was coerced to participate in the study. Respondents were assured that they were free to withdrawal from the study any time they want and that their withdrawal was not to affect how antenatal services will be provided to them and that there was neither material nor monetary benefits for participating in the study. Further, respondents were assured of anonymity by ensuring that code numbers were being used on the data collecting instrument. Respondents were told that the information from study findings will be disseminated accordingly in order to improve midwifery care as well as the health status of women and neonates. Those who were willing to participate in the study were given a consent form to sign after all the above information was provided (Appendix B).

Plans for Dissemination of Findings

The study findings and recommendations will be disseminated through seminars at Kamuzu College of Nursing and other health forums. A meeting will be held at the Blantyre DHO and with staff at the study sites to share the results. Copies of the thesis will be made available to KCN Library and published as an article in a journal.

CHAPTER 4

Study Results

Introduction

This chapter presents results on the knowledge, attitudes and practices of pregnant women on PCC in Blantyre Urban Malawi which was conducted from 6th April to 11th May 2016. The first section of the chapter presents the demographic characteristics of respondents followed by knowledge of respondents on PCC, their practices prior to pregnancy, beliefs and attitudes towards PCC and finally the factors that would influence respondents to attend PCC services.

Demographic Data

The following demographic data was collected from respondents; age, marital status, education level, occupation and number of pregnancies.

The mean age of the respondents was 24.58 years standard deviation (SD) of 5.498. Almost half of the respondents 49.5% (n=380) reached secondary education while few 2.5% (n=19) were illiterate. Majority of them were married 93% (n=713) and close to three quarter of them were not working 70.1% (n=538) (Table 1).

TABLE 1: DEMOGRAPHIC CHARACTERISTICS OF RESPONDENTS

Characteristic	n (%)	Characteristic	n(%)
Age in years		**Number of pregnancies**	
18-21	271(35.3)	1	283(36.9)
22-25	226(29.5)	2	220(28.7)
26-29	126(16.4)	3	139(18.1)
30-33	82(10.7)	4	76(9.9)
34-37	42(5.5)	5	36(4.7)
38-41	15(2)	At least 6	13(1.7)
42-45	4(0.5)		
46-49	1(0.1)		
Education		**Occupation**	
Illiterate	19(2.5)	Not working	538(70.1)
Primary	331(43.2)	Business	189(24.6)
Secondary	380(49.5)	Teacher	14(1.8)
Tertiary	37(4.8)	Nurse/Midwife	2(0.3)
Other	24(3.1)		

Knowledge on Preconception Care

The respondents were asked whether they had heard about PCC. Majority of them 75.7% (n=581) had not heard about PCC while 24.3% (n=186) said they had heard about PCC. Those that had heard about PCC were asked to give the researcher the source of information about PCC. Figure 1 shows respondents' source of information about PCC.

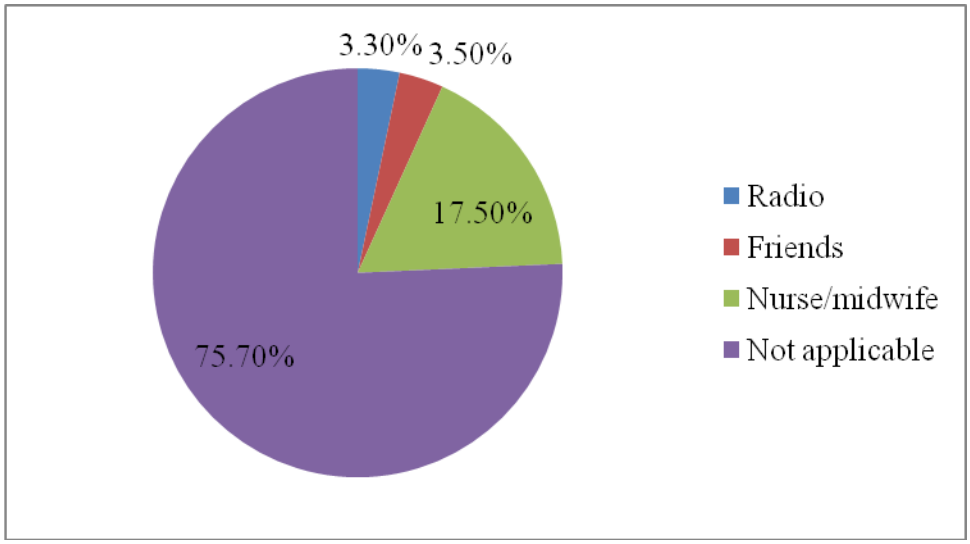

FIGURE 1: RESPONDENTS' SOURCE OF INFORMATION ABOUT PCC

The commonest source of information were nurse midwives 17.5% (n=134).

Further, the researches wanted to know whether the respondents knew the meaning of PCC. Majority of respondents 84% (n=644) had no idea; 15.4% (n=118) mentioned other aspects of PCC while 0.6% (n=5) narrated what it is. The researcher gave a standard definition of what PCC is and the services that are offered during PCC to all respondents. The researcher wanted each respondent to have a clear understanding of what PCC was all about before proceeding with the interviews. After giving the explanation of what PCC is all about and the services provided, the respondents mentioned the following as benefits of PCC attendance, 56.1% (n=396) can help to identify ones health problems prior to pregnancy, 26.2% (n=201) PMTCT of HIV,10% (n=77) can help those who have problems to receive treatment , 6.1%(n=47) a means to counsel people on issues related to pregnancy, 3.3% (n=25) helps people to plan pregnancy and 1.2% (n=9) said it may help women get pregnant while healthy.

The study wanted to test whether there was an association of the respondents' age and knowledge of PCC using Chi square test at 95% confidence interval. Results revealed no association between respondents' age and knowledge of PCC (x^2=221.060 df =156 p= 0.078). Additionally, there was no association between respondents number of pregnancies and knowledge of PCC (x^2=46.127, df= 42 p= 0.052). However, the study revealed an association between respondents' education level and the meaning of PCC(x^2=28.516, df= 18 and p= 0.008).

Practices of Pregnant Women Prior to Pregnancy

The respondents were asked whether they had planned to get pregnant or not. More than half of the respondents 61.5% (n=472) had planned to get pregnant while 38.5% (n= 295) had unplanned pregnancy. When asked if the respondents had received any care prior to pregnancy, 70% (537) did not while 30% (n= 230) received some kind of care prior to pregnancy. Additionally, those that received care prior to pregnancy were asked to mention the type of care that was received. The preconception services received by the women were mainly HIV testing 22.3% (n=171) and contraceptives 5 %(n=38) while few 2.7% (n=21) received nutrition supplements, treatment of various conditions, counselling and cervical cancer screening. Further, the researcher wanted to find out why the respondents (30%; n=230) had received care prior to pregnancy. The major reason for seeking care prior to pregnancy was to know ones health status and PMTCT of HIV (74%; n=170) seconded by spacing birth (10%; n=23) (Table 2)

TABLE 2: RESPONDENTS REASONS FOR RECEIVING CARE PRIOR TO PREGNANCY

Reasons	n(%)
Know their status and PMTCT of HIV	170(74)
Space birth	23(10)
Problems experienced in previous pregnancy	15(6.5)
Instructions from provider	12(5.2)
Planned pregnancy	10(4.3)
Total	**230(100)**

The researcher wanted to know the reasons why seventy percent of respondents (n=537) did not receive any care prior to pregnancy. The reason more than half of respondents (50.5%; n=271) did not receive PCC was due to lack of knowledge seconded by unplanned pregnancy (39.3%; n=211) (Table 3).

TABLE 3: RESPONDENTS' REASONS FOR NOT RECEIVING CARE PRIOR TO PREGNANCY

Reason	n(%)
Lack of knowledge	271(50.5)
Unplanned pregnancy	211(39.3)
Had no concern	49(9.1)
Not necessary	6(1.1)
Total	**537(100)**

The researcher wanted to find out whether respondents who had had pregnancy before received any care prior to those pregnancies. The finding was that only 20.6% (n=158) did so while 42.5% (n =326) received no care. The study wanted to test whether there was an association between age, education level, number of pregnancies of respondents and care received prior to pregnancy. Association was found between age of respondents and care received prior to pregnancy (x^2=35.486, df 26, p=0.041), respondents' education level and care prior to pregnancy (x^2=4.118, df=3, p=0.037) and

respondents' number of pregnancies and care prior to pregnancy (x^2=15.719, df=7, p=0.035).

Additionally, the study wanted to know if respondents had any medical problem or engaged in any behaviour that would threaten their pregnancy. Majority respondents 80.2% (n=615) neither had any medical condition nor engaged in behaviour that would threaten pregnancy while 19.8% (n=152) had some medical problems or engaged in behaviour which they felt would impact their pregnancy negatively. The common conditions mentioned were HIV infection (11%; n=84) vaginal Candida (mauka) (1.4% n=11), psychological problems (1.3%; n=10), aneamia (1.2%; n=9), and high blood pressure (1%; n=8).

Further, the study wanted to know if respondents did smoke or take alcohol prior or during pregnancy. Almost all of them (99.4%; n=762) were not smoking nor taking alcohol prior or during pregnancy. When asked if the respondents' spouses smoke tobacco or take alcohol 77.6% (n=595) of the respondents' spouses did not smoke nor take alcohol while 22.4% (n=172) had spouses who either smoke or take alcohol. The researcher wanted to know whether an association existed between age, education level, number of pregnancies and smoking or taking alcohol prior or during pregnancy. Neither an association was found between respondents age and smoking or taking alcohol (x^2=8.956, df=26, p=0.054) nor between age and behaviour or medical condition that will impact pregnancy negatively (x^2=64.934, df=26, p=0.242). An association was found between respondents education and smoking or taking alcohol (x^2=4.095, df=3, p=0.050). Additionally, no association was found between education level of respondents and behaviour or medical condition that would impact pregnancy negatively (x^2=9482, df=3,

p=-0.106). On the contrary, there was an association between number of pregnancies and smoking or taking alcohol (x^2=2.208, df=7, *p*=0.040 while no association was there between number of pregnancies and behaviour or medical condition that would impact pregnancy negatively (x^2=42.038, df=7, *p*=0.209).

When respondents were asked if they were currently on any medication, majority, 81.7% (n=627) of them reported that they were not on medication while 18.3% (n=140) were taking medications. The few respondents (18.3%; n=140) were asked to mention the type of medication they were taking. More than half of them were on HAART and cotrimoxazole (58.6%; n=82)(Table 4)

TABLE 4: MEDICATIONS RESPONDENTS WERE TAKING WHILE PREGNANT

Drug	n(%)
HAART & Cotrimoxazole	82(58.6)
Ferrous sulphate	47(33.6)
Aminophylline	3(2.1)
Other antibiotics	3(2.1)
Traditional medicine	2(1.4)
Antacids	1(0.7)
Antihypertensive	1(0.7)
Diclofenac	1(0.7)
Total	**140(100)**

Beliefs and Attitudes towards Preconception Care

The respondents were asked to say whom they felt should receive PCC. Over half of the respondents 66.5% (n=510) felt that all women should receive PCC followed by 13.7% (n=105) who felt PCC should be received by adolescents girls. Further, the respondents were asked if they had seen people attending PCC services. Most of them 75.6% (n=580) had not seen anyone attending PCC while 24.4% (n=187) had seen some

people doing so. When asked if respondents would attend PCC if they had opportunity to do so almost all of them 97.3% (n=746) said they would attend. Figure 2 presents the reasons why respondents would attend PCC.

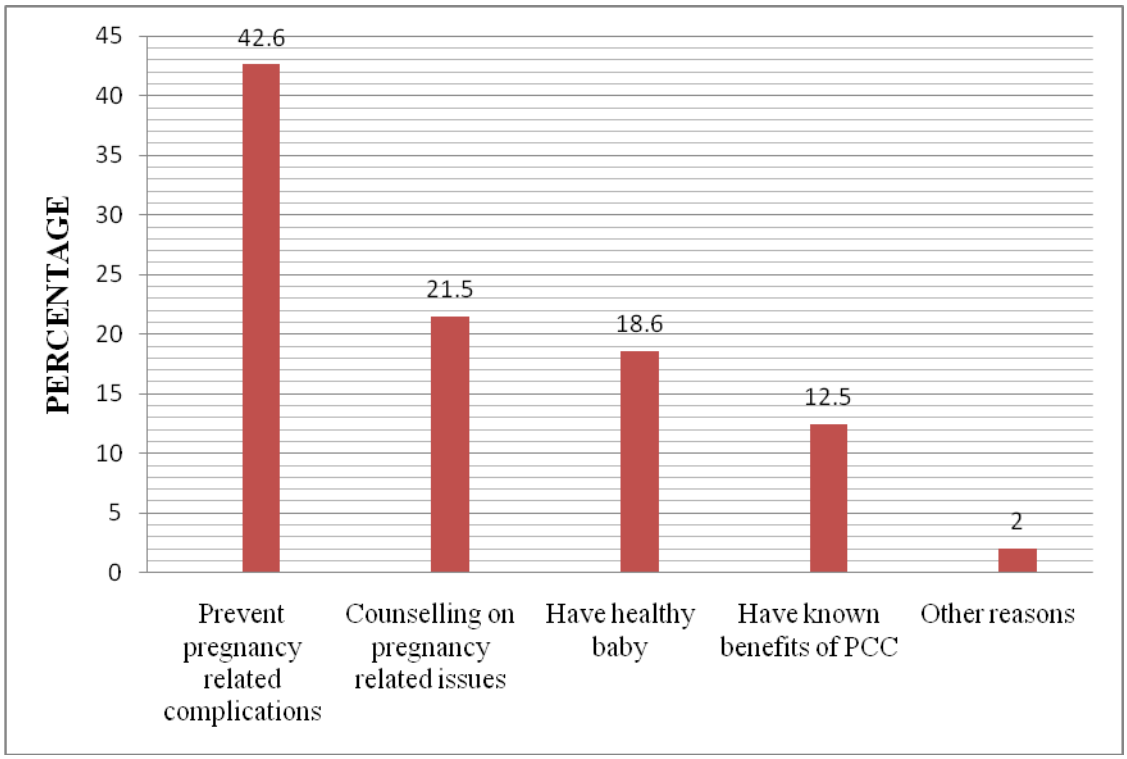

FIGURE 2: REASONS FOR PCC ATTENDANCE

Close to half of the respondents (42.6%; n=327) wanted to prevent pregnancy related complications while 12.5% (n=96) said would attend PCC because they had known the benefits of PCC after the explanation given by the researcher.

Additionally, the researcher wanted to find out if the respondents had beliefs that would hinder them from attending PCC. Almost all respondents 99% (n =759) had no beliefs that would hinder them from attending PCC.

Factors that would Influence Attendance of Preconception care Services

The study wanted to determine who would influence the respondents to attend PCC services. Figure 3 presents the respondents' responses.

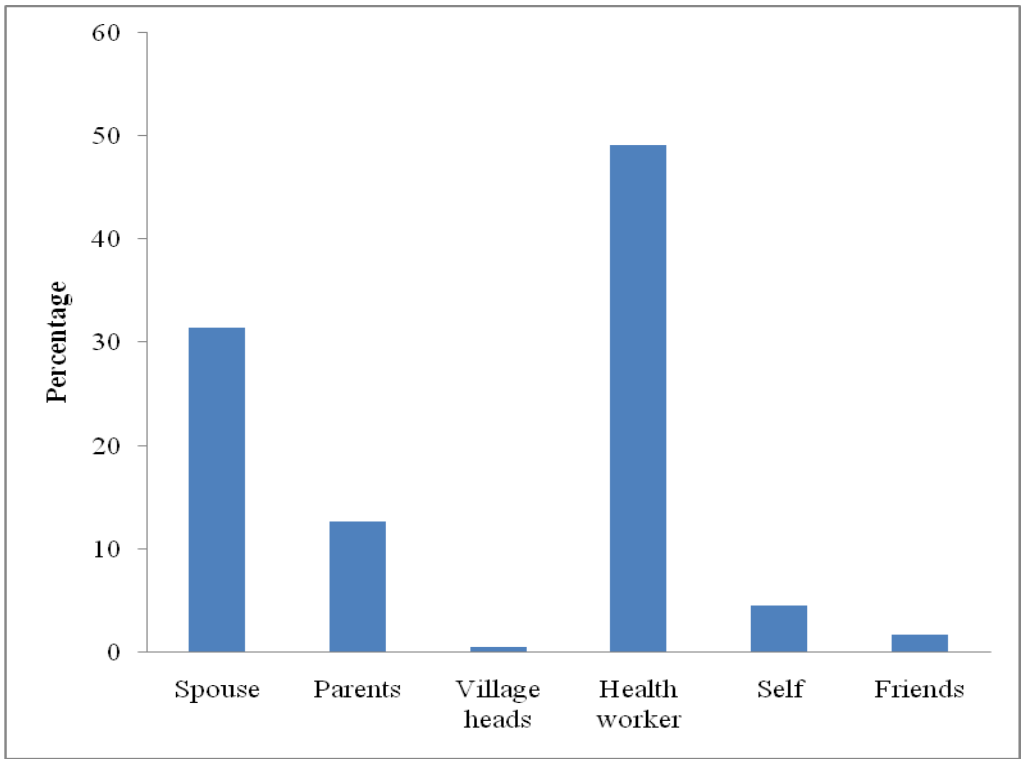

FIGURE 3: PEOPLE WHO CAN INFLUENCE PCC ATTENDANCE

Nearer half of the respondents 49.2% (377) mentioned health workers while the least (0.52%; n=4) mentioned village heads

The researcher wanted to know the reasons why the people mentioned in figure 3 would influence respondents to attend PCC services. Among those that said health workers would influence their attendance of PCC (n=377), majority 88.9% (n= 335)felt that health workers have knowledge on PCC and good skills in counselling people, 5% (n=19) of them said health workers want them to have a safe pregnancy and healthy babies, 4.2% (n=16) felt that health workers have the responsibility to do so while1.9% (n= 7) said that some health workers stay and work in their community hence can influence them to attend PCC.

The respondents who thought their spouse would influence them to attend PCC (n=243), gave the following reasons ; 31.7% (n=77) staying together, 25.9% (n=63) planning together , 22.2 % (n= 54) the spouse is a decision maker,9.5% (n= 23) have a safe pregnancy and a healthy baby,7% (n=17) felt it's the spouse responsibility while 3.7% (n=9) felt he would do so based on the spouse's knowledge on PCC.

Out of the ninety –seven respondents that mentioned parents as influencers for PCC attendance, 44.3% (n= 43) said parents have experience on childbirth, 19.6% (n=19) said they were staying with their parents, 18.6% (n=18) thought the parents would want them have a safe pregnancy and healthy baby while 17.5% (n=17) said because of the parents' knowledge on PCC. Out of the 13 (1.69%) participants who thought their friends would influence them to attend PCC, 46.2% (n=6) felt that their friends have experience on child birth, 38.5% (n= 5) it will be out of love, 15.4 % (n=2) they were staying together while 7.7% (n=1) said their friends would want them to be healthy.

The 34 (4.4%) respondents who felt would attend PCC by themselves 64.7% (n= 22) said they would make a decision to attend PCC, 23.5% (n=8) wanted to have a safe pregnancy and healthy baby while11.8% (n= 4) thought they had knowledge on PCC. The remaining respondents (n=4) who said their village heads would influence them attend PCC gave the following reasons, half of them (n=2) village heads are decision makers, a quarter of them (n=1) staying together while the remaining quarter (n=1) to be healthy.

Apart from who would influence PCC attendance respondents were asked to give other factors that would help them attend PCC. Majority 72.9% (n=559) said knowledge on PCC would help them do so (Figure 4).

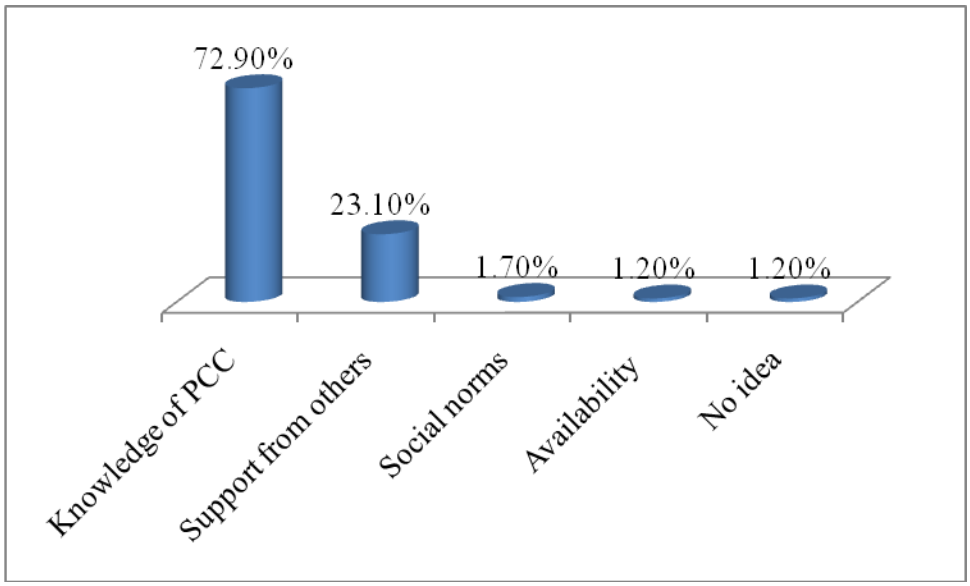

FIGURE 4: FACTORS THAT WOULD INFLUENCE PCC ATTENDANCE

On the reasons that would hinder PCC attendance, nearer three quarter of respondents 72.5% (n=556) mentioned lack of knowledge, 23.7% (n=182) said lack of support from significant others, 2.9% (n=22) mentioned cultural beliefs about pregnancy, 0.4% (n=3) said lack of PCC services while 0.1% (n=1) mentioned village heads.

Logistic Regression Model was fitted to test the significance of the factors that respondents mentioned would influence PCC attendance. Apart from the factors that respondents mentioned, the researcher included age, education level of respondents and number of pregnancies in the model. Results of the univariate and multivariate logistic regression for who would influence PCC attendance were not statistically significant at 95% confidence interval (Table 5). On the other hand, univariate and multivariate logistic regression for other factors that would influence PCC attendance were statistically significant at 95% confidence interval (Table 5). Further education and number of pregnancies showed that they were statistically significant in influencing PCC attendance (Table 5).

TABLE 5: LOGISTIC REGRESSION FOR PREDICTING INFLUENCE OF PCC ATTENDANCE

	Univariate Analysis			Multivariate Analysis		
Variable	**Odds ratio (OR)**	**p**	**(95%CI)**	**Odds ratio(OR)**	**p**	**(95%CI)**
Who influence	1.056	0.714	(0.789, 1.413)	1.116	0.474	(0.827, 1.505)
what influence	0.242	0.0001	(0.129, 0 .456)	0.211	0.0001	(0.105, 0.425)
Age	0.891	0.001	(0.834 , 0.952)	0.955	0.456	(0.846, 1.078)
Education	2.792	0.006	(1.346, 5.791)	2.472	0.040	(1.042, 5.862)
Gravida	0.613	0.0001	(0.477, 0.786)	0.796	0.371	(0.482, 1.313)

The respondents were asked to say where PCC should be offered. Figure 5 presents the respondents' views of where PCC should be offered. Nearer half of the respondents felt that PCC should be offered in the communities (43.3%; n=332).

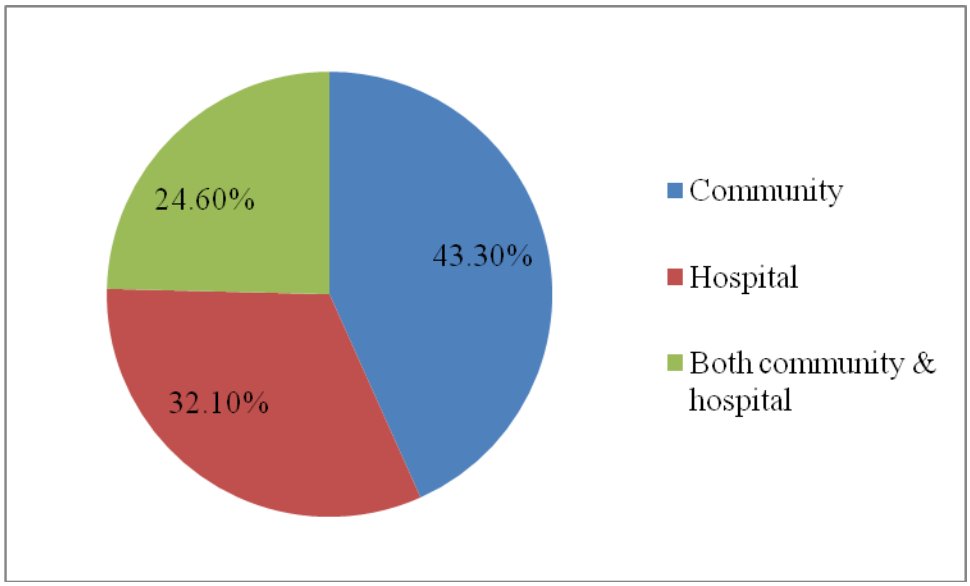

FIGURE 5: PLACE WHERE PCC SHOULD BE OFFERED

CHAPTER 5

Discussion

Introduction

This chapter discusses the results on knowledge, practices, attitudes and beliefs of pregnant women on PCC that was conducted at Ndirande and Limbe Health Centres in Blantyre Urban. The discussion is done in comparison with what other studies have done on PCC. The presentation is based on the study objectives. Further, the chapter presents the study limitations and recommendations drawn from the research findings.

Knowledge on Preconception Care

The findings from the study show that most pregnant women lacked knowledge on PCC. Lack of knowledge on PCC may make clients not to utilize services that are essential for good pregnancy outcomes. Knowledge on PCC and its benefits can help clients take necessary precautions prior to pregnancy so that mortality and morbidity among women of childbearing age and their neonates is reduced. The findings from this study are in line with what most studies have found that there is lack of knowledge of PCC among general population hence its under utilization (Mazza et al., 2013; Olayinka et al., 2014). There is need for health service providers to impart knowledge to the general population on PCC. The findings of the study also show that if clients are imparted with knowledge on PCC they will understand its benefits hence promoting its utilization. This is consistent with findings from other studies which have demonstrated

that provision of information to women and couples on PCC improves knowledge and promotes its utilization which further reduces pregnancy related complications (Dean, Lassi, Imam, & Bhutta, 2014). The Chi square test showed no association between respondents' age and knowledge of PCC and number of pregnancies and knowledge of PCC. The Chi square test findings suggest that all women regardless of their age and number of pregnancies require information about PCC. Even if women have delivered many times they lack essential information that can lead to good pregnancy outcome. On the other hand, the Chi square test showed an association between one's education and knowledge of PCC. This means that adolescent girls and women who have had some education have opportunity to know health related issues as such there is need to encourage all girls to attend school to promote their understanding of health issues. Preconception issues can be included in secondary and tertially education for guidance. The finding concurs with what Weisman et al. (2008) found that women who had higher education had control over their preconception health and able to influence their partners to utilize PCC services. Further, Ezegwui et al.(2008) found that women who were less educated had little knowledge on PCC compared to those with higher education.

Practices Prior To Pregnancy

The findings of the study have shown that more than half of the respondents had planned to be pregnant. Planned pregnancy is thought to be an opportunity for one to attend PCC (Tuomainen , Cross-Bardell, Bhoday, Qureshi, & Kai, 2013). Despite planning to get pregnancy, the study findings have shown that PCC was not practiced by most women. Lack of knowledge on PCC seems to be a major factor that prevents majority of women to have PCC in our setting. The current study gives opportunity for

health workers to provide information to women regarding PCC so that during the planning period they can attend PCC services. The findings are contrary to what other studies have found that most women do not attend PCC services due to unplanned pregnancy (Delissaint & McKyer, 2011;Tuomainen et al. 2013).

The current study has also shown that the commonest care received prior to pregnancy by women is HIV testing to evaluate their health status and prevent PMTCT of HIV. The current findings may either imply that women understand the impact of HIV on pregnancy and the newborn since HIV testing and counselling topics are taught daily in antenatal clinics or because women are not allowed to go through pregnancy without HIV testing. There is need to integrate services so that women and couples who seek HIV testing prior to pregnancy should be offered other PCC services in order to reduce maternal and infant morbidity and mortality. Women need to be sensitized of other medical conditions that can negatively impact on pregnancy apart from HIV/AIDS. The findings are in line with what was noted in China where enrolment for PCC services was high in a PCC HIV/AIDS intervention model (Ebrahim et al., 2006).

Though majority of respondents had no problems which would interfere with pregnancy, the study shows that a considerable number of women had either medical problems such as HIV infection, hypertension, and aneamia or were facing psychological problems during pregnancy. The findings imply that women do not know the impact of their health on pregnancy. Medical conditions that women may have can be aggravated by pregnancy hence the need for all girls, women and couples to have thorough screening prior to pregnancy. These findings are in line with what other studies have found that women may get pregnant without evaluating their health nor stabilizing pre existing

conditions that may worsen during pregnancy (Dean et al., 2013). Since only few participants had partial PCC, it could be that women feel that evaluation of their health can be done during antenatal care. Unfortunately, many women present for antenatal care late when complications have already set in (Chiwaula, 2011).

Further, the study has found that almost all respondents were neither taking alcohol nor smoking prior or during pregnancy. The findings suggest that most women and their neonates are protected from the lethal effects of alcohol and tobacco. Though few women engaged in smoking or taking alcohol there is need to impart knowledge to them on the effects of alcohol and smoking tobacco during pregnancy. Alcohol intake during pregnancy regardless of amount has fatal effects on foetal and infant development (Aragón et al., 2008). The findings are consistent with what Lum et al.,(2011); Naimi et al., (2008) and Tough et al., (2006)found that some women take alcohol prior or during pregnancy. Additionally, women whose spouses smoke cigarette can be passively affected from the smoke produced. This can further have lethal effect on pregnancy and foetal development due alteration of parent DNA secondary to smoking (Sawnani, Olsen, & Simakajornboon, 2010; Centers for Disease Control and Prevention (US), National Center for Chronic Disease Prevention and Health Promotion (US), & Office on Smoking and Health (US), 2010). Provision of counselling to all adolescent girls and women prior to pregnancy can help them take necessary precautions to avoid passive smoking or craving for alcohol.

Attitudes and beliefs towards Preconception care

In the current study majority of respondents felt that PCC should be offered to all women regardless of their health status. This suggests that PCC can be accepted by

women regardless of their health status. The findings give an opportunity to health services providers to offer PCC to all women without facing a lot of resistance. However, the findings do not tally with what Mazza and Chapman (2010) and (Zee et al., 2012) found that women felt that PCC should be offered to those who have had problems in their previous pregnancies. Additionally, almost all of them expressed willingness, given the chance, to attend PCC services contrary to what Tuomainen et al.(2013) found that PCC was regarded an essential service by women who were in their first and second pregnancies. Women in our setting require motivation talks on the benefits of PCC to achieve the goal of attending PCC services.

The current study also found that 99% had no beliefs that would hinder them from attending PCC. The finding is essential since negative beliefs on health services prevent people from utilizing the services. However, exploring other beliefs that can hinder women from attending PCC would be essential. The finding contradicts what (McCorry et al., 2012) and Zee, Beaufort, Steegers and Denktaş,(2012) found that women showed hesitancy to attend PCC due to laziness, cultural beliefs and unplanned pregnancy.

Further, close to half of the respondents felt that PCC can help prevent pregnancy related complications. The current finding contradicts what was found by Mazza and Chapman (2010), that women who lacked knowledge on PCC had the belief that prenatal care can offer all the services required for one to have favourable pregnancy outcome. They felt that PCC was necessary for those who had experienced birth related complications which is similar to what Tuomainen et al.(2013) found in UK where women felt that pregnancy or childbirth complications arise only during pregnancy

hence they cannot attend PCC services. The findings from the present study suggest that women can attend PCC services so that safe motherhood is achieved. Women require knowing the benefits and availability of PCC services. Lack of knowledge on PCC can contribute to poor preconception practices among women in our setting.

Factors that influence preconception care practices

Though not statistically significant, the study has shown that most clients would depend on health service providers to give them necessary information about attending PCC seconded by their spouses. Health service providers are key informants on health issues. The findings suggest the need for providers to have adequate knowledge and skills on PCC so that clients are given the necessary information and care required to prevent pregnancy and childbirth complications. The findings correlate with what McCorry et al.(2012) found among diabetic women that health workers can influence attendance of PCC through good relationship, improved communication with clients and individualized care. On the contrary, some providers do not regard PCC as a priority compared to other preventive services as found by Mazza et al. (2013).

Further, male involvement in PCC should be intensified since some women depend on their spouses to influence them attend PCC services. Prevention of morbidity and mortality among women and neonates should be a dual responsibility among couples. The strategy used in ANC where men accompany women can be adopted in primary prevention of pregnancy related complications.

The study has also shown that knowledge on PCC is essential if clients are to attend PCC services. Majority of the participants mentioned knowledge as a factor that would influence them to attend PCC. The current findings underscore the need to impart

knowledge to all women and couples in childbearing age about PCC and its benefits in the maternal and entire life cycle. Other studies have also found knowledge on PCC as the major factor influencing PCC practices (Charron-Prochownik et al., 2008; Ebrahim et al., 2006 & Fischl et al., 2010).

Apart from knowledge on PCC, education level has shown that it can influence ones attendance of PCC (OR =2.792, p=0.006 CI 1.346, 5.791). This shows that women who are educated are 2.79 times more likely to attend PCC than those who are not educated. The current findings are supported by Ezegwui et al.(2008) and Weisman et al. (2008) that women who are educated to higher level have control over their preconception health and able to influence their partners to utilize PCC services. From the study findings there is need to educate the girl child so that during the childbearing period she is able to take the necessary care for good pregnancy outcomes. The current study has further shown that more women would prefer community based PCC services seconded by those who preferred a combination of both hospital and community PCC services in order to reach many people. These findings are in line with what Tuomainen et al. (2013) found in UK that women felt PCC should be provided as a primary care service in their communities in combination with other primary care interventions. This shows that women understand that most primary care interventions are done at community level. Further, there are several other healthcare workers providing essential services within the community who can be utilized for the initiative. Combining hospital and community PCC services would help to reach those who may not be accessible in their communities.

Limitations of the Study

The study findings cannot be generalized to all women in Malawi because the study was done in one district specifically Blantyre urban. Time and financial constraints made the study not to be done on a wide scale since the study was done as a requirement for Masters Degree in Midwifery. Further, using qualitative method would have given participants more chance to express their views on PCC.

Recommendations

Based on the study findings, the following recommendations are made:

- There is need to impart knowledge of preconception care and its benefits to all women of childbearing age, adolescents and couples so that care is taken prior to pregnancy in order to reduce the number of complications occurring to women and children. All the modes of communication should be used to ensure that many people have access to information about PCC and its benefits.
- Adolescent girls, women and couples should be given information about the dangers of risky behaviors such as smoking, passive smoking, alcohol intake and use of drugs on pregnancy during youth friendly services, postnatal, under five and family planning clinics.
- There is need to integrate the health messages offered to women during antenatal care with preconception care messages so that women should receive PCC interventions when planning future pregnancies.
- Male involvement should be intensified in all maternal and child health services to ensure dual responsibility in prevention of maternal and neonatal morbidity and mortality.

- There is need to provide preconception care services at both hospital and community level so that more people are targeted.
- There is need to incorporate issues of preconception care in all nursing and midwifery courses so that nurses and midwives are equipped with knowledge so that they can tackle preconception care issues during youth friendly and midwifery services.
- There is need to have policies that will help all women of childbearing age to have preconception care prior to pregnancy. The model of HIV testing for all women during antenatal care can be adopted for preconception care services
- Conduct the same research on a large scale in order to generalize the findings
- Conduct a study on knowledge of health service providers on preconception care

Conclusion

The study has explored knowledge, practices and attitudes and beliefs of pregnant women on PCC in Blantyre Urban. The study findings show that women lack knowledge of PCC and its benefits. It has also demonstrated that despite most women planning to get pregnant they do not receive care prior to pregnancy to ensure good outcome. Few women go for HIV testing prior to pregnancy to know their status and PMTCT of HIV infection while some use modern contraceptives. Further, the study has shown that some women get pregnant while having some medical conditions that would worsen during pregnancy. Most of them realize of these medical conditions while pregnant during antenatal care. Of good note is that all women have positive attitude towards PCC and would be willing to attend the services given an opportunity. Additionally, the study has

shown that knowledge and support from significant others can influence participants to attend PCC services. Provision of the services at both community and hospital level will further help to reach more adolescent, women and couples.

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Appendices

Appendix A: Participants Information Sheet

My name is Violet Khonje I am coming from the Kamuzu College of Nursing, a constituent college of the University of Malawi. I am doing a study on knowledge, attitudes and practices of pregnant women on preconception care. The broad objective of the study is to explore the knowledge, attitudes and practices of pregnant women on preconception care. Specifically the study wants to assess the knowledge of pregnant mothers on preconception care, describe the preconception practices that pregnant women are involved in prior to pregnancy, their attitudes and beliefs on preconception care and to describe factors that influence preconception care practices among them.

You will be interviewed by the researcher for 30 minutes. The information that you will provide shall be confidential and will not be shown to other people except those concerned with the study. The information that you will provide will be documented on the questionnaire. You will not be asked you name but will be required to give some background information such as your age, gravidity and marital status. It is voluntary for you to participate in the study and any refusal to do so shall not affect the type of services you receive at this health centre. There are no risks attached to the study only that you will spend some time with the researcher apart from the usual antenatal care. There are no direct benefits for participating in the study but the information you will provide will help to plan interventions that will assist women, adolescent and couples so that pregnancy related complications are reduced. For any clarifications and concerns about the study, you can contact; Violet Khonje on **0888705749** or The Chairperson, COMREC, P/Bag 360, Chichiri, Blantyre 3. Tel: **01 871911 / 01 874107**

Appendix B: Consent Form

Please read and sign this form if you are participating in this study.

I have read the attached information sheet about the study and have understood the purpose of the study. My questions have been answered to my satisfaction. I give permission to the researcher to ask me questions. I understand that the information that will be obtained will be kept confidential and that there are no financial benefits for participating in the study. I have the right to withdraw from the study at any point. I have been assured that any publication and research dissemination will not have any name. I voluntarily agree to take part in the study.

Participant

name……Signature……Date……

Name of

researcher……Signature……Date……

Thank you for participating in the study.

Appendix C: Chichewa Translated information sheet

Dzina langa ndine Violet Khonje. Ndachokera ku sukulu ya azamba ndi anamwino ya Kamuzu College of Nursing nthambi ya University of Malawi. Ndikupanga kafukufuku wokhudza chitsamaliro chomwe amayi amayenera kulandira asanatenge mimba (pakati). Kafukufuku ameneyi akhala akuwona zomwe inu mukudziwa zokhuzana ndi chitsamaliro chomwe amayi amayenera kulandira asanatenge mimba, zomwe mumachita musanatenge mimba komanso zomwe mumakhulupirira zokhuzana ndi chisamalirochi.. Ndizikufunsani mafunso womwe atitengera nthawi pafufupi mphindi makumi atatu. Zomwe mutandiwuze pakafukufuku ameneyi zikhala za chinsinsi ndipo sizikaonetsedwa kwa wina aliyense. Simufunsidwa dzina lanu koma zina zokhudza inu zoti zikathandize pakafukufuku ameneyi. Kutenga nawo mbali mu kafukufuku ameneyi sikokakamiza ndipo palibe chilango china chilichonse chomwe chizaperekedwe mutakana kulowa nawo kafukufuku ameneyi. Palibe chovuta chomwe mukumanenacho pakafukufukufukuyi kupatulapo nthawi yowonjedzera yomwe muzakhale mukuyankha mafunso pambali pa nthawi yochitira sikelo yanu. Palibe chomwe mutapindule mu kafukufuku ameneyi koma zomwe mayankhe pakafukufukufukuyi zizathandiza anamwino, azamba komanso madotolo kupedza njira zothandizira amayi, abambo komanso achinyamata komanso atsikana womwe akufuna kutenga mimba kuti tipewe mavuto omwe amayi ndi ana amakumana nawo chifukwa cha mimba.

Ngati mungakhale ndi mafunso kapena kufuna kudziwa zambiri za kafukufuku ameneyi mutha kuyimba lamya kapena kulembera kalata kwa Violet Khonje , Kamuzu College of Nursing , Box 415, Blantyre. Tel. 0888705749 kapena kwa Chairpeson, COMREC, P/Bag 360, Chichiri Blantyre 3. Tel**01 871911, 01 874107**

Appendix D: Chichewa Translated Consent Form

Kalata ya chilorezo

Chonde werengani ndi kuika chizindikiro cha zina lanu ngati mukutenga nawo mbali pa kafukufukuyu.

Ndawelenga ndipo ndamvetsa zonse zokhudza kafukufuku ameneyi. Mafunso anga onse ayankhidwa. Ndikuvomerza kuti wochita kafukufukuyi andifunse mafunso wokhuzana ndi kafukufukuyi. Ndatsimikiziridwa kuti zonse zomwe tikambirane zikhala za chitsitsi komanso kuti palibe phindu la ndalama potenga nawo mbali pakafukufukuyi. Ndili ndi ufulu wosiya kutenga mbali pa kafukufukuyi nthawi ili yonse. Ndatsimikiziridwanso kuti zotsatira zakafukufukiyi sidzizasonyeza dzina la munthu wina aliyense. Ndavomera kulowa nawo mu kafukufuku ameneyi mwakufuna kwanga.

Dzina la wotenga mbali ……

Signature……Tsiku…….

Dzina la wopangitsa kafukufuku.....Sign.....Tsiku.....

Zikomo kwambiri potenga nawo mbali pakafukufukuyi.

Appendix E: Questionnaire

KNOWLEDGE, ATTITUDES AND PRACTICES OF PREGNANT WOMEN ON PRECONCEPTION CARE IN BLANTYRE URBAN

Date of interview: .....Time interview started: .....Time interview ended:..... Interview Code number:..... Name of interviewer.....

Part A: Demographic Information

1. How old are you?.....
2. What is your marital status?
   (a) Married [ ]
   (b) Single [ ]
   (c) Widowed [ ]
   (d) Divorced [ ]
3. What is your education level?
   (a) Primary [ ]
   (b) Secondary [ ]
   (c) Tertially [ ]
4. What is your profession?
   (a) Housewife [ ]
   (b) Teacher [ ]
   (c) Business lady [ ]
   (d) Others specify.....
5. What is your gravidity?.....

Part B: Knowledge on Preconception care

6. Have you heard about preconception care? [yes] [no]
7. If yes, where did you get the information from?
   (a) Radio [ ]

(b) Friends [ ]

(c) Nurses/midwives [ ]

(d) Others specify.....

8. What does preconception care mean to you (a) No idea [ ]

(b) Care that women, couples and adolescent receive prior to pregnancy [ ]

The researcher will provide a standard definition of PCC and the services offered to all respondents who will show partial or lack of knowledge on PCC for them to understand what PCC is all about before proceeding with the questions (from question number 11)

Pre-conception care is the care that women will receive prior to pregnancy in order to go through pregnancy without complications and have a healthy baby.

9. What services are provided during preconception care?

(a) Screening services [ ]

(b) Micronutrient supplements [ ]

(c) Counselling [ ]

(d) Management of diseases/infections [ ]

(e) Others specify.....

(f) Family planning services [ ]

(g) No idea [ ]

10. Where is preconception care offered in your setting?

(a) Health centre [ ]

(b) Community [ ]

(c) Other specify.....

11. What are the benefits of preconception care?

(a) Identification of medical conditions that can worsen during pregnancy [ ]

(b) Treatment of conditions that may threaten pregnancy outcome [ ]

(c) Counselling on risky behaviour that would affect mother and the unborn baby [ ]

(d) Opportunity to reduce risk of transmission of infection from mother to child [ ]

(e) Other specify.....

Part C: Practices of Women Prior to Pregnancy

12. Did you plan to have this pregnancy? [Yes] [No]

13. Before getting pregnant did you receive any care in preparation for your pregnancy [yes][no] if yes, proceed. If no, go to question 16

14. What kind of care did you receive?

(a) Counselling [ ]

(b) Micronutrient supplements [ ]

(c) Treatment for an illness [ ]

(d) Contraceptives [ ]

(e) Other specify..... [ ]

15. What prompted you to receive the care?

(a) Problems faced with previous pregnancy [ ]

(b) Instructions from nurse/midwife/ doctor [ ]

(c) Information from the radio [ ]

(d) Other specify.....

16. If the answer is no to question 13. Why did you not seek any care prior to getting pregnant?

(a) It was not necessary [ ]

(b) I had no concern to seek care [ ]

(c) I had no knowledge of preconception care [ ]

(d) Others specify.....

17. In your previous pregnancies did you receive preconception care? [Yes] [No]

18. Are you engaged in any behaviour or have a condition that would have an impact on your pregnancy or the expected baby [Yes] [No]

19. Explain what you do?.....

20. Do you smoke or take alcohol? [Yes] [No]

21. Does your spouse smoke or take alcohol? [Yes] [No]

22. If yes how many cigarette and how much alcohol do you take per day? Please specify

23. Are you currently on any medications? [Yes] [No]

24. If yes specify the type of medication you are taking……

Part D Attitudes towards Preconception Care

25. In your own opinion who should receive preconception care?

(a) All adolescent girls

(b) All women

(c) Women who have had problems with their pregnancy

(d) Other specify.....

26. In your community have you seen women, adolescents and couples attending PCC? [Yes] [No]

27. If you had opportunity would you attend preconception care services? [Yes] [No]

28. Why would you do so?

(a) To ensure that my pregnancy has no complications [ ]

(b) To receive counselling on behaviours that threaten pregnancy outcome [ ]

(c) To have a healthy baby [ ]

(d) It is not necessary [ ]

(e) Other specify.....

29. Do you have any beliefs that would prevent you from receiving PCC? [Yes] [No]

30. If yes, what are the beliefs that you have?

(a) Pregnancy is not planned [ ]

(b) Getting pregnant is a secret issue [ ]

(c) Other specify.....

Part E Factors that Influence Preconception Care Practices

31. Who do you think would influence your attendance of PCC services?

(a) Spouse [ ]

(b) My parents [ ]

(c) Village headman [ ]

(d) Others specify…….

32. Why do you think so?

…….

33. What can make people attend PCC services in your community?

(a) Support from significant others [ ]

(b) Knowledge on PCC [ ]

(c) Social norms in the community [ ]

(d) Others specify……

34. What would hinder them to attend PCC services?

(a) Lack of information on PCC [ ]

(b) Lack of support from significant others [ ]

(c) Cultural beliefs on pregnancy [ ]

(d) Lack of services on PCC [ ]

(d) Others specify……

35. Where do you think preconception care should be provided?

(a) In the community

(a) At the hospital

(b) Other specify…….

Thank you for participating in the study.

Appendix F: Questionnaire -Chichewa Version

KNOWLEDGE, ATTITUDES AND PRACTICES OF PREGNANT WOMEN ON PRECONCEPTION CARE IN BLANTYRE URBAN

Tsiku la mafunso……Nthawi yoyambira mafunso……..

Nthawi yotsilizira mafunso……Nambala ya ofunsidwa mafunso……..

Dzina la ofunsa mafunso……

GAWO LOYAMBA: MBIRI YANU

1. Muli ndi zaka zingati?.....
2. Kodi ndinu wokwatiwa?
   (a) Eya [ ]
   (b) Ayi sindili pa banja [ ]
   (c) Ayi ndine mkazi wamasiye [ ]
   (d) Ayi banja linatha [ ]
3. Sukulu munaphunzira kufika pati?
   (a) Pulaimale
   (b) Sekondale
   (c) Koleji
4. Mumagwira ntchito yanji?

(a) Sindili pa ntchito ili yonse

(b) Ndimapanga bizinesi

(c) Yauphunzitsi

(d) Zina tchulani……

5. Mimbayi ndiyachingati?.....

GAWO LACHIWIRI: ZOMWE MUKUDZIWA ZOKHUZANA NDI CHISAMALIRO CHOWAKONZEKERETSA AMAYI ASANATENGE MIMBA KUTI ADZAKHALE NDI UCHEMBERE WAMBWINO

6. Munanayamba mwamvapo za chisamaliro chowakonzekeretsa amayi asanatenge mimba kuti adzakhale ndi uchembele wabwino? Eya [ ] Ayi [ ]

7. Ngati yankho ndi eya; Munamva kuchokera kuti?

(a) Pawailesi [ ]

(b) Kwa anzanga [ ]

(c) Kwa anamwino ndi azamba [ ]

(d) Kwina tchulani……..

8. Kodi chisamaliro chokonzetsera uchembele wa bwino ndi chani?

(a) Sindikudziwa

(b)kulandira uphungu kapena chithandizo chamatenda usanatenge pokonzekera kukhala ndi mimba

(c) Zina tchulani……

Wochita kafukufuku adzalongosolera aliyense wotenga mbali za chisamalirochi asanapitilize ndi mafunso otsatirawa

Ichi ndi chisamaliro chomwe amayi amalandira chowakonzekeretsa asanatenge mimba kuti adzakhale ndi uchembere wabwino.

9. Mungatchuleko zinthu zomwe zimachitika nthawi yomwe munthu akulandira chisamalirochi?

(a) Kuyeza matenda osiyanasiyana [ ]

(b) Kulandira mankhwala kapena zakudya zofunikira nthupi [

(c) Malangizo okhuzana ndi mimba [ ]

(d) kutenga njira zolera [ ]

(e) Chithandizo cha matenda osiyanasiyana [ ]

(f) Sindikudziwa [ ]

10. Kodi ndi malo ati omwe kumaperekedwa chisamalirochi?

(a) Kuchipatala

(b) Mmudzi mwathu

(c) Kwina tchulani……

11. Kodi ndi ubwino wanji womwe munthu angaupedze atalandira chisamaliro chokonzekeretsa kuti akhale ndi uchembele wabwino?

(a) Adziwa mmene nthupi mwake muliri [ ]

(b) Alandira thandizo la matenda omwe angabweretse chiopsyezo pa mimba [ ]

(c) Alandira malangizo a zikhalidwe zomwe zingabweretse vuto kwa mayi kapena mwana yemwe sanabadwe [ ]

(d) Ateteza mwana ku matenda omwe akadatengera kuchokera kwa mayi [ ]

(e) Zina tchulani……..

GAWO LACHITATU: ZOMWE MUMACHITA MUSANATENGE MIMBA

12. Kodi mimba yanuyi munakonzekera kuti mukhale nayo? Eya [ ] Ayi [ ]

13. Musanatenge mimbayi munalandirapo chisamaliro chili chonse ngati njira imodzi yokonzekera kuti mudzakhale ndi uchembere wabwino? Eya [ ] Ayi [ ]

Ngati ayi pitani funso nambala 16

14. Ngati yankho ndi eya; tchulani chisamaliro chomwe munalandira?

(a) Uphungu wa zaumoyo wabwino nthawi ya mimba [ ]

(b) Mankhwala owonjedzera zofunika mthupi [ ]

(c) Chithandizo chamatenda omwe ndinali nawo [ ]

(d) Kulera [ ]

(e) Zina tchulani…….

15. Chinakupangitsani ndi chani kuti mulandire chisamalirochi?

(a) Mavuto omwe ndinakumana nawo mimba ya mmbuyomu [ ]

(b) Uphungu ochokera kwa anamwino ndi madotolo [ ]

(c) Ndinamwa pawailesi [ ]

(d) zina tchulani……..

16. Ngati yankho lanu ndi ayi ku funso 13; ndichifukwa chiyani simunalandire chisamalirochi?

(a) Ndinaona ngati ndizosafunikira

(b) Ndinalibe vuto lofunika chisamaliro chapadera

(c) Sindimadziwa za chisamalirochi

(d) Zina tchulani……

17.Mimba zanu zammbuyomu munalandirapo chisamaliro chokonzekeletsa amayi kuti akhale ndi uchembere wabwino? Eya [ ] Ayi [ ]

18. Kodi pali makhalidwe omwe inu mumachita omwe mukuganiza kuti angakhudze mimba/ mwana yemwe mukuyembekezera? Eya [ ] Ayi [ ]

19. Ngati yankho ndi eya, tchulani zomwe muchita?

……

20. Kodi mumamwa mowa kapena kusuta fodya?

Fodya Eya [ ] Ayi [ ]

Mowa Eya [ ] Ayi [ ]

21. Nanga amuna anu amasuta fodya kapena kumwa mowa? Eya [ ] Ayi [ ]

22. Ndi fodya kapena mowa ochuluka bwanji omwe musuta kapena kumwa?

Fodya ……

Mowa…….

23. Kodi alipo mankhwala omwe mukumwa padakali pano? Eya [ ] Ayi [ ]

24. Ngati yankho ndi eya, tchulani dzina la mankhwala omwe mukumwawo?.....

GAWO LACHINAYI: MAGANIZO NDI ZIKHULUPILIRO ZANU PA ZACHISAMALIRO CHOKONZEKERETSAAMAYI KUTI ADZAKHALE NDI UCHEMBERE WABWINO

25. Kodi mukaganiza kuti ndi ndani yemwe ali oyenera kulandira chisamaliro chokonzekeletsa uchembere wabwino?

(a) Atsikana [ ]

(b) Amayi onse [ ]

(c) Amayi omwe anakhalapo ndi mavuto ndi mimba zawo [ ]

(d) Ena tchulani.....

26.Mudera lanu munaonapo atsikana,kapena amayi ngakhalenso mabanja akupita kukalandira chisamaliro chokonzekeletsa kuti adzakhale ndi uchembele wabwino asanatenge mimba? Eya [ ] Ayi [ ]

27.Kodi mutakhala ndi mwayi mungalandire chisamaliro chokonzekeletsa amayi kuti akhale ndi uchembere wabwino ? Eya [ ] Ayi [ ]

28. Ndichifukwa chani mungatero?

(a) Kuti mimba yanga isakhale ndi zovuta zilizonse

[ ]

(b) Kuti ndilandire uphungu wazikhalidwe zomwe zingaike mimba pachiopsyezo

[ ]

(c) Kuti ndizabeleke mwana wathanzi

[ ]

(d) Sizofunikira kutero

[ ]

(e) Zina tchulani……..

29.Kodi panokha ngati munthu pali zomwe mumakhulupirira zomwe zingapangitse kuti mulandire kapena musalandire chisamaliro chimenechi? Eya [ ] Ayi [ ]

30.Ngati yankho ndi eya, tchulani zikhulupiriro zomwe zingapingitse kuti mulandire kapena musalandire chisamalirochi

(a) Mimba sitimakonzekera imangobwera yokha [ ]

(b) Munthu sumazionetsera ukafuna kukhala ndi mimba [ ]

(c) Zina tchulani……

GAWO LACHISANU: ZOMWE ZINGAPANGITSE KULANDIRA KAPENA OSALANDIRA CHISAMALIRO CHOKONZEKELETSA AMAYI KUKHALA NDI UCHEMBERE WABWINO

31. Ndi ndani yemwe angapangitse kuti inuyo mulandire chisamaliro musanatenge mimba

(a) Amuna anga [ ]

(b) Makolo anga [ ]

(c) Amfumu [ ]

(d) Ena tchulani……

32.Chifukwa chani?.....

33. Ndi zithu ziti zomwe zingapangitse anthu mdera lanu kuti azilandandira chisamalirochi asanatenge mimba

(a) Kuzindikira za chisamalirochi [ ]

(b) Kulimbikitsidwa ndi achibale [ ]

(c) Zikhulupiriro zomwe zili mdera lathu zokhuza mimba [ ]

(d) Kupedzeka kwa malo omwe chasamalirochi chimaperekedwa [ ]

(e) Zina tchulani…….

34. Nanga ndiziti zomwe zingalepheretse anthu kutero?

(a) Kusazindikira za chitsamalirochi [ ]

(b) Kusalimbikitsidwa ndi achibale [ ]

(c) Zikhulupiriro zomwe zili mdera lathu zokhuza mimba [ ]

(d) Kusowa kwa malo omwe ungakalandireko chisamalirochi [ ]

(e) Zina tchulani…….

35. Kodi mukuganiza kuti chisamaliro chimenechi chidziperekedwa kuti?

(a) Mmadera mwathu [ ]

(b) Kuchipatala [ ]

(c) Kwina tchulani……

Zikomo chifukwa chotenga nawo mbali mukafukufukuyi.

Appendix G: Certificate of Approval from COMREC

CERTIFICATE OF ETHICS APPROVAL

This is to certify that the College of Medicine Research and Ethics Committee (COMREC) has reviewed and approved a study entitled:

P.11/15/1823 – Knowledge, attitudes and practices of pregnant women on perception care in Blantyre, urban by Ms. Violet Talinda C. Khonje

On 29 February 2016

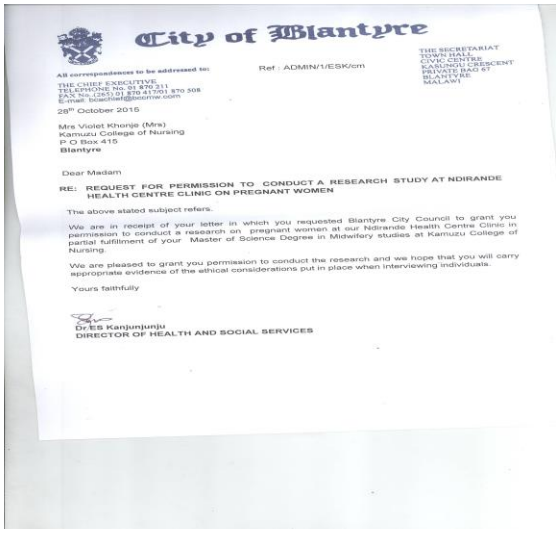
As you proceed with the implementation of your study, we would like you to adhere to international ethical guidelines, national guidelines and all requirements by COMREC as indicated on the next page

Dr. C. Dzamalala- Chairman (COMREC)

Approved by
College of Medicine
29 FEB 2016
(COMREC)
Research and Ethics Committee

29/02/2016
Date

Appendix H: Permission from Blantyre City Assembly



City of Blantyre

All correspondences to be addressed to:

THE CHIEF EXECUTIVE
TELEPHONE No. 01 870 211
FAX No. (265) 01 870 417/01 870 508
E-mail: bcachief@bccmw.com

Ref : ADMIN/1/ESK/cm

THE SECRETARIAT
TOWN HALL
CIVIC CENTRE
KASUNGU CRESCENT
PRIVATE BAG 67
BLANTYRE
MALAWI

28th October 2015

Mrs Violet Khonje (Mrs)
Kamuzu College of Nursing
P O Box 415
Blantyre

Dear Madam

RE: REQUEST FOR PERMISSION TO CONDUCT A RESEARCH STUDY AT NDIRANDE HEALTH CENTRE CLINIC ON PREGNANT WOMEN

The above stated subject refers.

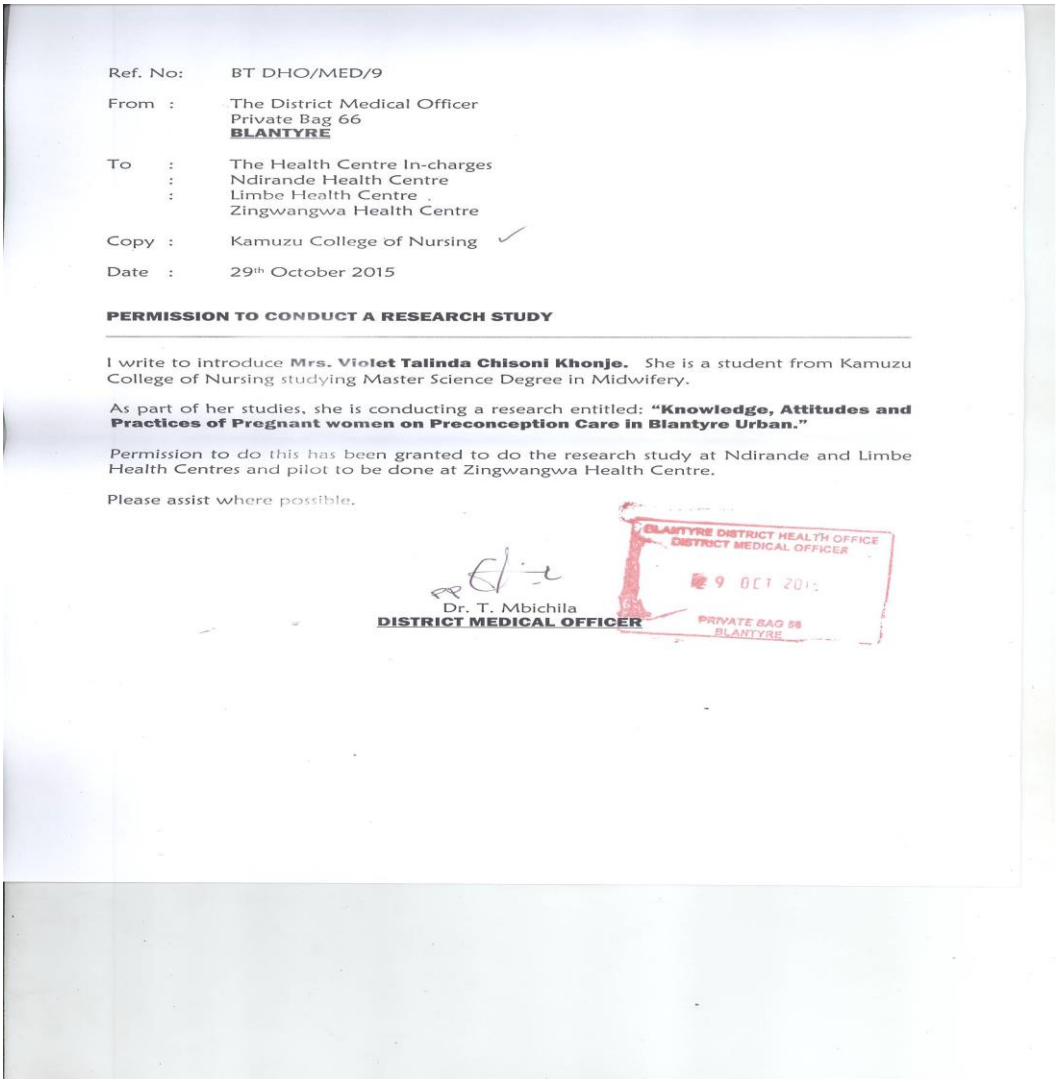
We are in receipt of your letter in which you requested Blantyre City Council to grant you permission to conduct a research on pregnant women at our Ndirande Health Centre Clinic in partial fulfillment of your Master of Science Degree in Midwifery studies at Kamuzu College of Nursing.

We are pleased to grant you permission to conduct the research and we hope that you will carry appropriate evidence of the ethical considerations put in place when interviewing individuals.

Yours faithfully

Dr ES Kanjunjunju
DIRECTOR OF HEALTH AND SOCIAL SERVICES

Appendix I: Permission from Blantyre DHO



Ref. No: BT DHO/MED/9

From : The District Medical Officer
Private Bag 66
BLANTYRE

To : The Health Centre In-charges
: Ndirande Health Centre
: Limbe Health Centre
Zingwangwa Health Centre

Copy : Kamuzu College of Nursing ✓

Date : 29th October 2015

PERMISSION TO CONDUCT A RESEARCH STUDY

I write to introduce **Mrs. Violet Talinda Chisoni Khonje.** She is a student from Kamuzu College of Nursing studying Master Science Degree in Midwifery.

As part of her studies, she is conducting a research entitled: **"Knowledge, Attitudes and Practices of Pregnant women on Preconception Care in Blantyre Urban."**

Permission to do this has been granted to do the research study at Ndirande and Limbe Health Centres and pilot to be done at Zingwangwa Health Centre.

Please assist where possible.

Dr. T. Mbichila
DISTRICT MEDICAL OFFICER

BLANTYRE DISTRICT HEALTH OFFICE
DISTRICT MEDICAL OFFICER
9 OCT 2015
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BLANTYRE