KAMUZU COLLEGE OF NURSING

COMPLIANCE WITH FOCUSSED ANTENATAL CARE AMONG PREGNANT WOMEN IN DOWA DISTRICT, MALAWI

BY

DAVISON .A. BESTER MACHIKA

Bachelor of Science in Nursing (BScN), University Certificate in Midwifery (UCM),

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Declaration

I hereby declare all the work in this dissertation is my own and has never been submitted for another degree in this or any other university or institution of higher learning

Davison Bester Machika

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Full Legal Name

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Signature

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Date

Certificate of Approval

The undersigned certify that this thesis represents the student's own work and effort and has been submitted with our approval.

Signature: _____ Date: _____

Abigail Kazembe, PhD (Associate Professor)

Main Supervisor

Signature: _____ Date: _____

Barbara Zileni, MSc (Lecturer)

Co-supervisor

Dedication

I dedicate this work to my dear wife Mayamiko, and my two children Priscilla and Ron for their patience and endurance during my study time. I am also very grateful to my parents, McDonald and Felistus Machika for their guidance and upbringing as I grew up. May God bless you.

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Abstract

Antenatal care has for a long time been regarded as a crucial basic component of any reproductive health program. The World Health Organisation introduced Focused Antenatal Care, a model which recommends initiation of Antenatal Care visits as soon as the woman realises that she has missed her monthly period and make four targeted visits throughout the pregnancy period. Despite its significance, pregnant women persistently underutilise the Focused Antenatal Care model which has proven to be effective especially in developing countries like Malawi. Therefore, a study was conducted aimed at examining pregnant women's compliance with the Focused Antenatal Care model in Dowa District, Malawi.

A descriptive cross-sectional study using a structured questionnaire was used in selected health facilities of Dowa and Mponela. A total of 386 pregnant women were recruited using simple random sampling method. Data from the completed questionnaires were entered using CSPro version 6.0 and analysed using STATA. Descriptive statistics and logistic regression were the two statistical tests employed in this study. Responses from open ended questions were manually grouped, coded and frequencies were run to come up with percentages under each response.

The results showed a high prevalence of late antenatal care attendance, 71.2%, and those making fewer than four antenatal visits were at 67.2%. Factors associated with non compliance included; lack of adequate knowledge, denial of being pregnant (OR 2.1, 95% CI 0.62, 7.11), cost of starting antenatal care (OR 1.6, 95% CI 0.38,0.68), long distance to health facility (OR 1.5, 95% CI 0.80, 2.84), value attached to Focused Antenatal Care (OR 7.5, 95% CI 0.73, 7.77), in adequate health workers (OR 1.13, 95% CI 0.69, 1.87) and having age above 35 years (OR 1.38, 95% CI 0.66, 2.85)

There is high prevalence of non compliance with Focused Antenatal Care among pregnant women in Dowa District. Health education should be intensified to raise awareness. Outreach clinics should be revitalised to make the service accessible.

Key words: Focused Antenatal Care, Compliance, Antenatal care.

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Abbreviations and Acronyms

AIDS	Acquired Immuno Deficiency Syndrome
ANC	Antenatal Care
APH	Ante Partum Haemorrhage
CI	Confidence Interval
CHAM	Christian Health Association of Malawi
PD	Cephalo pelvic disproportion
DHO	District Health Officer
FANC	Focused Antenatal Care
HMIS	Health Management Information Systems
IUD	Intra uterine death
IUGR	Intra Uterine Growth Retardation
LBW	Low Birth Weight
MDHS	Malawi Demographic and Health Survey
MOH	Ministry of Health
Multigravida	A woman who has been pregnant for two or more times
NSO	National Statistical Office
OR	Odds Ratio
PMTCT	Prevention of Mother to Child Transmission
PPH	Post partum Haemorrhage
SP	Sulphadoxine Pyramethamine
TTV	Tetanus Toxoid Vaccine
UNICEF	United Nation Children's Emergency Fund
UNFPA	United Nations Population Fund
WHO	World Health Organisation

Operational Definitions

Antenatal Care (ANC) : Care which a woman receives during pregnancy

Compliance with ANC : Starting ANC within the first trimester (Twelve weeks' after conception) and making a total of four or more ANC visits.

Focused Antenatal Care : A WHO model of ANC where women start ANC within the first twelve weeks of pregnancy and make a total of four or more ANC visits.

CHAPTER ONE

INTRODUCTION

Introduction to the study

Despite the global emphasis to improve maternal health, maternal morbidity and mortality remains a more significant health problem especially in developing countries. Antenatal care has shown to be one of the effective ways of averting most pregnancy related complications and deaths (Amnesty International, 2014). Focused antenatal care, a model which has proven to be more effective in developing countries, is often under utilised in such settings (Mugo, Dibley & Agho, 2015). There have been international calls on the need to address the increasing unmet needs of pregnant women and children, like availability and accessibility of Basic Emergency Obstetric and Neonatal Care (BEmONC), availability and accessibility of a skilled health worker to assist a woman during pregnancy, labour and delivery. The progress to curb maternal morbidity and mortality has been slow (Mrisho , Schellenberg, Mushi, Obrist, Tanner, and Schellenberg (2007). The World Health Organisation estimates that more than 529 000 women die annually worldwide from pregnancy related complications, child birth and abortion. Ninety nine percent (99%) of such deaths occur in the developing countries with less than 1% occurring in developed countries. The situation is worse in the Sub Saharan Africa where more than 162, 000 women die due to pregnancy related complications (United Nations, 2010; WHO, UNICEF, UNFPA & The World Bank, 2012).

Maternal morbidity and mortality arising from a combination of health, social, cultural, and political factors can be addressed by enhancing the provision of antenatal care services. The antenatal care period provides an opportunity for provision of various services

to pregnant women. These services include provision of prophylactic medications like Sulphadoxine and Pyramethamine (SP), vaccination, Tetanus Toxoid Vaccine (TTV), diagnosis and treatment of various ailments, syphilis screening, Human Immuno Deficiency Virus (HIV) testing as an entry point to prevention of mother to child transmission (PMTCT). Health education given to women during antenatal care visits is another principal strategy in equipping pregnant women with a variety of messages related to pregnancy, labour and delivery, newborn and post partum care.

Focused antenatal care (FANC), a model of antenatal care has proven to be more effective in addressing maternal mortality especially in the developing countries (WHO, 2012). Trials done in Arabia, Argentina, Cuba, and Thailand found FANC to be more comprehensive, sustainable, and effective Antenatal Care (ANC) model (UNFPA, 2011, WHO, 2012). However, several studies indicate that most women in Africa, Malawi inclusive underutilise FANC services despite it being more efficient and effective (Ajayi, Osakinle & Osakinle, 2013; Geubbels, 2006). The World Health Organisation (WHO) recommends a minimum of four ANC visits during pregnancy but figures captured between 2005 and 2010 show that only 53% of pregnant women achieved the four targeted visits worldwide, while 36% achieved the four visits from developing countries (WHO, 2012). For example, percentage of women who completed at least four ANC visits in Sub Saharan Africa and surrounding countries in 2010; Burundi 33%, Congo 43.8%, Ethiopia 19.1%, Malawi 45%, Niger 14.9%, Rwanda 35.4%, Chad 23% and Zambia 60%. In Malawi, like most of the African countries, pregnant women initiate ANC visits late. The National Statistical Office (NSO) (2014) indicates that 20% of pregnant women started FANC visits in the first trimester in the northern Malawi, 16.8% in the central region and 23.9% in the southern region. Within

the central region where Dowa is located, the prevalence of late ANC initiation is also high such that 9.5% started ANC visits in the first trimester in Mchinji, 11.1% in Dedza, and 13.9% in Lilongwe and 16.5% in Nkhotakota (NSO, 2014).

Poor utilisation of FANC services is associated with increased risk of poor maternal and newborn outcomes (Geubbels, 2006). Women who initiate ANC late and those who have had no ANC services are more likely to give birth to babies with more health related complications. Such mothers are three times more likely to give birth to low birth weight babies, and are five times more likely to die (Logan, Moore, Minciet, & Cottingham, 2007).

Moreover, several studies have outlined a number of factors associated with poor compliance with FANC services. Some of the factors include; unplanned pregnancies, multiparity, low socio economic status, teen age pregnancy, and ethnicity (Alderlisten, Vrijkotte, Wal &Bonsel, 2007; Magadi, Madise & Diamond, 2004; Raatikainen, Heiskanaen & Heinonen, 2007).

Background information

Antenatal care has for a long time been regarded as a crucial basic component of any reproductive health program. Various models of ANC have been practiced all over the world. The different types of models came into being as a result of various factors such as socio-cultural, tradition, historical, but also economic status of a country. Furthermore, human as well as financial strength of a specific health care system play a pivotal role in the adoption of a specific ANC model (Shay, & Say, 2007). The tradition model of ANC that puts more emphasis on large number of visits (7-10) is practiced most in developed countries (Say, & Raine, 2007). Pregnant women in these countries receive comprehensive ANC services

consisting of frequent visits and ultra sound scans. Deliveries are done under supervision of trained personnel and are exposed to prompt emergency services should complications arise. On the contrary, most developing countries adopted a new WHO model called focused antenatal care (Birungi & Onyango-Ouma, 2006). This new model recognises that frequent visits do not necessarily improve pregnancy outcomes and prove to be more costly for most developing countries. Secondly, it has been found that women who have risk factors never develop complications while women without risk factors often do. Moreover, it was noted that the approach resulted in more resources being directed to women with risk factors (Ekabua, Ekabua & Njoku, 2011).

Malawi adopted the new WHO FANC model in 2003. FANC emphasises a minimum of four targeted visits. Initial visit should be done as soon as the woman realizes that she has missed her monthly period or simply within the first trimester (within 12weeks). The second visit should be at 20-24 weeks, third visit at 28-32 weeks and fourth visit at 36 weeks or later. The objective of FANC is achievement of good outcomes for the mother and the baby and prevention of possible complications arising from pregnancy, labour, delivery, and the post partum period. This could be realised through early detection and treatment of complications by assessing the pregnant woman for various conditions and other infectious diseases. Some common conditions include; HIV/AIDS, syphilis and other sexually transmitted infections, malnutrition, malaria, and tuberculosis. Additionally, other complications like vaginal bleeding, eclampsia, and severe anaemia are also referred for specialised care (JHPIEGO, 2007).

FANC also aims at prevention of complications through immunizations like TTV, iron, folic acid provision for anaemia prevention, use of insecticide treated nets, and

deworming (JHPIEGO, 2007). Health promotion is another goal of focused antenatal care. This is achieved through provision of various health education messages given to pregnant women on various topics like nutrition during pregnancy, risks of cigarette smoking, herbal use, hygiene, rest, safe sex, immunization, newborn care, exclusive breast feeding and family planning (MOH, 2006).

In Malawian setting, provision of antenatal care services is integrated with under five care, family planning, post natal care and other various reproductive health services. Close to 73% of ANC services are provided at primary level (Health Centre, Dispensaries, maternity units) on daily basis and outreach clinics are conducted monthly (MOH, 2012) whereas 27% of the services is provided by secondary level institutions (district and central hospitals). Available data and reports for Malawi show that 95% of pregnant women attend antenatal care services at least once. Conversely, NSO (2014) indicates that only 20.8% of pregnant women started ANC in the first trimester and 44.7% made four or more ANC visits. Several studies have revealed that late initiation or poor compliance to ANC resulted in poor pregnancy and new born outcomes. Some of these outcomes include anaemia, pre-eclampsia, premature births, intra uterine growth retardation, low birth weight, chorio amnionitis, cerebral malaria, maternal and neonatal deaths (Magadi, Madise, & Rodriguez, 2008; Raatkainen, Heiskainen & Heinonen, 2007). These could be experienced because there was no early detection and management of conditions associated with pregnancy resulting in adverse maternal and neonatal outcomes (MOH, 2009). Therefore, late initiation of ANC partly contributes to increased maternal deaths which is currently at 675 per 100 000 and neonatal deaths at 31 per 1000 live births (Bowwie &Geubbels, 2013; NSO, 2006; NSO, 2010).

The antenatal care period provides an opportunity for reaching pregnant women with a number of interventions which are crucial for the wellbeing of the mother and her unborn baby (Campbell & Graham, 2006). The benefits of antenatal care to the baby include increased growth, reduced risk of infection and increased chances of survival. Interventions included in ANC package like tetanus toxoid vaccine, screening for pre-eclampsia, STI screening have proven to be more cost effective especially in the Sub Saharan Africa context (Campbell & Graham, 2006).

Gage and Calixte (2006) found that women with higher parity had fewer antenatal visits as they based their decisions from previous pregnancies.

The adequacy of timing and compliance with FANC is indicated by early initiation (within the first 12 weeks) as it paves way for enough time for essential diagnosis and treatment of various complications a pregnant woman might have (Tuladhar & Dhakal, 2011). Thus, late initiation hampers efforts for proper and comprehensive screening of a pregnant woman and institution of measures to avert possible arising complications. Non compliance in this study means starting antenatal care visits after 12 weeks' gestation, making fewer than four visits and missing the scheduled dates for these visits or making irregular non scheduled visits.

There are a few published studies on antenatal care in Malawi and they mainly looked at barriers to ANC usage, factors associated with late initiation of ANC and the other one looked at assessing quality of ANC respectively (Banda, 2013; Chiwaula, 2011; Mgawadere, 2009). There is no published study on women's compliance with focused antenatal care in Dowa. It is against this background that this study is conducted.

Statement of the problem

Most women in Malawi undeutilise antenatal care. For example percentage of women who completed four antenatal care visits in Malawi, in 2014 is still low, 44% with some districts in the central region recording even lower figures like Nkhotakota had 36%, Mchinji 39.3%. Although the percentage of women completing four FANC visits seems high for Malawi, it is still low if compared to how some countries perform. For instance, the percentage of women completing four antenatal care visits is high in industilised countries like the USA in 2010 was at 96.6%, Canada, 98.9% (WHO, 2012, NSO, 2010, NSO & UNICEF, 2011).

Studies conducted in Malawi on antenatal care have looked barriers to FANC usage, assessing quality of ANC (Banda, 2013, Mgawadere, 2009). There is no study that looked at compliance with the FANC model hence this study.

Significance and justification of the study

Following the low figures on utilisation of antenatal care by pregnant women in Dowa district, there was need for further research on utilisation of ANC services since no such study had been conducted in the district.

The findings from this study will have implications for policy making, health care provision, education, and research. Policy makers will use the results from this study to strengthen policy related to provision of antenatal care. They could also use the findings to improve or modify existing reproductive health policies with the aim of enhancing maternal and child health. The findings from this study could also be used to strengthen community interventions, which could enhance utilisation of FANC. Educators and health care providers will be able to develop or modify health education messages that will enhance appropriate and

beneficial use of antenatal care services. Researchers will be able to identify gaps for further research from this study.

This study emanated from review of several articles and literature that underscored the significance of ANC; therefore, it was conducted in order to understand pregnant women's approach to FANC in Malawian context, particularly in Dowa district. Furthermore, understanding women's approach to FANC would help researchers to infer on maternal and neonatal health outcomes of a population. Information gathered from this study adds to the existing body of knowledge in the area of maternal and child health. Additionally, the research findings can also be used to strengthen family and social support systems for pregnant women in communities.

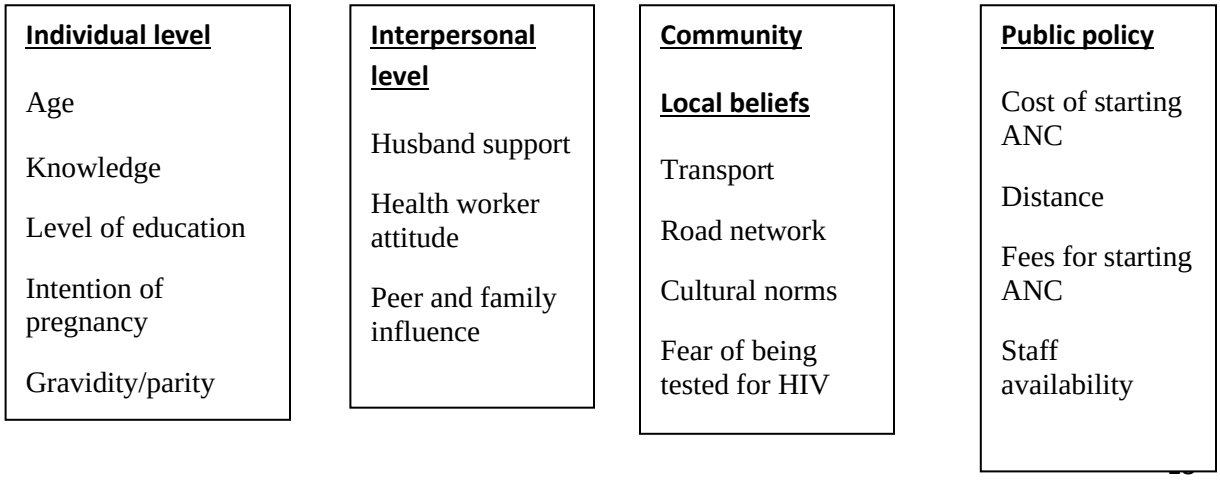
Conceptual framework

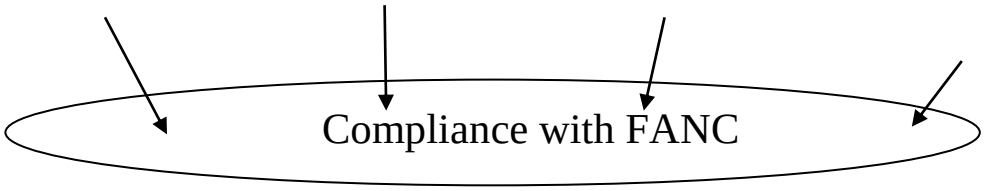
This study was guided by the socio-ecological model as it emphasises on the interaction between and interdependence factors within and across all levels of a health problem (Barbara et al., 2005).

The ecological perspective puts more emphasis on the interaction between, and interdependence of, factors within and across all levels of a health problem. It highlights the interaction between people and the physical and socio-cultural environment. The social ecological model states that behaviour affects and is affected by multiple levels of influence. Secondly, behaviour shapes and is shaped by the social environment. McLeroy, Bibeau, Steckler, Glanz (2009), identified five levels of influence in health related behaviours and conditions. These are intrapersonal or individual factors, interpersonal factors, institutional and organizational factors, community and public policy factors. The other perspective of the

ecological model is the reciprocal causation. It suggests that people influence and are influenced by those around them. For example, compliance with FANC could be influenced by pregnant women's beliefs and practices such as refusal to be seen by male midwives at the antenatal clinic. This belief could in turn influence the hospital authorities to allocate female midwives to promote ANC attendance. An ecological perspective portrays the significance of multilevel interactions that combine behavioral and environmental components. For example, to have an effective ANC strategy, multiple means to influence ANC use have to be employed. These might include making the services available to the people by placing them within reach, imparting knowledge on ANC to the people and also formulation of policies on ANC usage. On the local scene, by-laws could also be formulated by traditional leaders enforcing use and compliance to ANC. A number of studies looking at antenatal care usage used the social ecological model in order to help explain various factors related to ANC use; Banda (2013), in Zambia, Haeman, Sword, Elliot, Moffat, Helewa (2015) in Canada, Joshi, Trovaldsen, Hodgson, Hayen(2014) in Nepal. In this study, this model helps to explore if there are any intrapersonal (individual) interpersonal, community, and public policy factors affect compliance with FANC**.**

An ecological model of focused antenatal care compliance





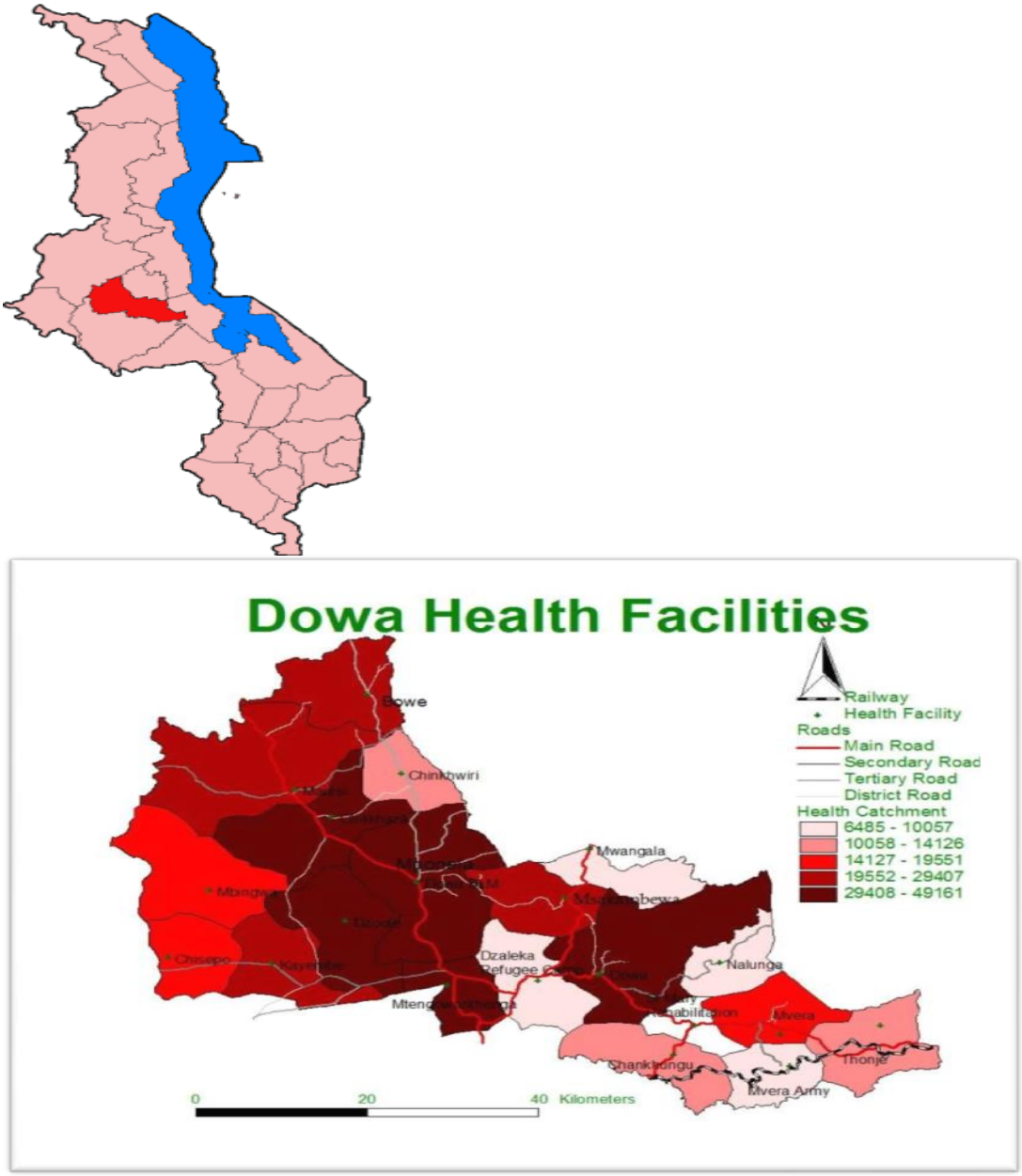
Adapted and modified from theory at Glance (Barbara et al., 2005)

Context of the study

Dowa district is located in the central region of Malawi. It boarders with Kasungu to the north, Ntchisi to the north east, Salima to the east and Lilongwe to the south. The whole district covers a catchment area of 3,041km^2. It has a total population of 764, 414, making 4.9% of the total population in Malawi. The predominant tribe in the district is Chewa with a small proportion of other tribes. The people in the district mainly follow matrilineal type of marriage. The major religions in the district are Christianity, Islam, and a tradition religion known as Gulewankulu. People of Dowa are mainly engaged in subsistence farming where they produce crops like tobacco, maize and ground nuts and rear livestock such as cattle and goats.

Seventy three percent (73%) of health facilities in Dowa belong to the Ministry of Health, seconded by CHAM (18%). Less than half (41%) of the population live within 5km from the nearest health facility. For the majority of the population from the eastern side of the district, travelling is mainly by foot because of the lagged terrain making physical access to health facilities more challenging. HMIS data for Dowa district shows consistent underutilisation of FANC services. For example, 18% of pregnant women started antenatal care in the first trimester in 2011, in 2012 only 14% of pregnant women started ANC in the first trimester, 9% in 2013.

Figure 1: Map of Malawi showing Dowa district



Objectives of the study

Broad objective

To examine pregnant women's compliance with focused antenatal care in Dowa district

Specific objectives

- To assess women's knowledge on focused antenatal care
- To identify intrapersonal, interpersonal, institutional, community and policy factors that affect compliance with focused antenatal care.
- To identify time of commencement of antenatal care among pregnant women
- To compare intrapersonal, interpersonal, institutional, community and public policy factors on compliance with focused antenatal care among primgravidas and mutigravidas

CHAPTER TWO

LITERATURE REVIEW

Introduction

The aim of literature review in this study was to identify factors contributing to compliance and non compliance to focused antenatal care from studies done by other researchers. The following electronic data search engines were used to search for articles to be reviewed; Pub med/MEDLINE, HINARI, full free PDF for scientific publications, Google and Google scholar. Local publications from Malawi Ministry of Health (MOH), National Statistical Office (NSO). The key search words and combination of words used were: 'focused antenatal care', 'antenatal care', 'compliance with', 'non compliance with', 'and antenatal care utilisation', 'factors associated with antenatal care use.' Most of the studies used in the review are from 2004 onwards with a few exceptions of earlier studies which contained very important information. Literature review, therefore, provided a sketch for better implementation of the study Burns & Graham 2006).

Despite global initiatives aimed at improving maternal health, over half a million women die annually from complications arising from pregnancy and child birth (Ronsmans & Graham, 2006). Most maternal deaths, over 97 per cent occur in developing countries with Sub Saharan Africa contributing almost 47% of all deaths (WHO, 2004). The lifetime risk of maternal death in Sub Saharan Africa is 1 in 22 mothers compared to 1 in 210 in Northern Africa, 1 in 62 in Oceania, 1 in 120 in Asia, and 1 in 290 in Latin America and Caribbean (WHO, 2007).

Antenatal care which is one of the pillars of the safe motherhood initiative provides crucial health education, screening for potential pregnancy related and other problems thus helping to ensure optimal health for pregnant woman and her unborn baby.

Globally, developing countries continue to perform poorly in the implementation of ANC services. These services in developing countries are characterised by late initiation of ANC visits, fewer than four FANC visits, irregular clinical visits, long waiting time, and quiet often times, poor feedback given to pregnant women (Villar, Bakketeig & Donner, 2002).

In Malawi, the most common causes of maternal deaths include haemorrhage which accounts for 33% of all maternal deaths, ruptured uterus and obstructed labour constitute 30%, eclampsia 7%, abortion 7% and anaemia 13% (Geubbels, 2006).

There is positive association between ANC attendance and skilled delivery which leads reduction in maternal deaths (Magadi, Madise & Rordiguez 2000; UNICEF, 2003). All intended benefits of interventions provided in FANC are mostly unattainable due to late entry to ANC by most pregnant women.

A study conducted in Mexico by Coria-Soto et al. (1996) found that inadequate number of ANC visits was associated with 63 percent increased risk intrauterine growth retardation. Ahmed and Das (1992) in study conducted in Bangladesh found that birth weight was positively correlated with the frequency of visits to the clinic. Similar findings were recorded in Canada and Finland where inadequate ANC visits was associated with preterm birth, low birth weight, small for gestation age, and increased maternal mortality (Heaman, Bayrampour, Kingstone, Helewa, Brownell, Derksen, et al., 2012; Raatikainen et al., 2007).

Time of ANC commencement

Compliance with FANC means starting ANC visits within the first trimester (12 weeks) and making recommended number of visits stipulated in FANC. These visits are four in total when a pregnant woman has no any complication and one can make more than four visits if has a complication (Birungi, Stephanie & Hughes, 2008). Countries continue to record poor ultilisation of antenatal care services. Studies conducted in Botswana, Ethiopia, Chad, Mali and the Niger denote non compliance with FANC. For example, a study conducted by Mulima (2014) in Botswana found that 72% of pregnant women started ANC visits in the second trimester. Similarly, Villardsen, Tarsebol, Negussie, Marriam, Tilahun and colleagues (2014) found that 60% of pregnant women started ANC visits in the second trimester in Ethiopia. Another study found that 47% of pregnant women in Chad, 12% in Mali and 36% in Niger did not attend antenatal care (Calson, Paintain, Bruce, Webster & Lines, 2011). Studies done in Zambia and Malawi found that 80% of pregnant women started ANC after the first trimester, and 40% of pregnant women made less than four visits respectively. In Malawi, a study done in Lilongwe found that 98% of women started ANC late 75% in Ntchisi started ANC between four and six months' gestation (Chiliba & Kochi, 2013; Chiwaula, 2011; Banda, 2013). Late entry and non use of FANC services prevents pregnant women from benefiting from essential services like syphilis screening, HIV testing, SP provision for malaria prevention, growth monitoring, iron supplementation which are good for the pregnant woman and the unborn baby. Studies done in Burkinafaso, Uganda and Tanzania found that 19 to 35% of pregnant women reported for ANC in the first trimester. Furthermore, majority of women came for ANC booking in the third trimester (36 weeks or later) (Hogan, Foreman, Naghavi, Ahu,Wang, Makela et al., 2010). These figures are quiet low for first trimester ANC

booking for a specific country and pregnant women could be more prone to various complications due to little or no interventions done to avert some of pregnancy related complications.

Intrapersonal, interpersonal, institutional, community and policy factors that affect compliance with FANC

Studies have been done to establish factors contributing to compliance with antenatal care**.** These factors include place of residence, age, parity, intention to get pregnant, cultural beliefs, cost (Trinh, 2005; Magadi, Madise & Rodriguez, 2004; 2007; Perloff 1999).

Younger women especially teenagers tend to conceal pregnancies as most of the pregnancies are unplanned and most likely go through denial of being pregnant and might chose to wait a little longer to confirm being pregnant leading to late entry into ANC (Trinh, 2006). Similarly, single women with unplanned pregnancies have negative attitude towards their pregnancies making them less willing to start ANC visits (Kogan et al., 1998). Conversely, in their study, Bhatia and Cleland (1995) found that teenage mothers were more likely to start using FANC earlier than older women.

Parity

Women with six or more living children are less likely than those with one living child to make four ANC visits. Supporting these findings, studies have revealed that women with higher parity tend to base their decisions on experiences from previous pregnancies making them less likely to start ANC early (Tsegay, Gebrohiwot, Goicohea, Edin, Lemma, 2013; Asiimwe, 2010; Ahmed & Das 2002).

Knowledge/education and FANC usage

Several studies have outlined the relationship between pregnant women's level of education and compliance with FANC. For example, a study conducted by Kulkami and Nimbakar (2008) in India found that women with higher level of education complied with FANC than their counterparts with lower level of education. Similar findings were recorded in Ethiopia by Tsegay et al. (2013), Banda (2013) in Malawi.

Perception of being healthy

A number of studies have revealed that pregnant women see it unprofitable to visit a health facility when not sick. More women would prefer to visit a clinic when sick (Abrahams, Jewkes & Mvo, 2001; Mrisho et al., 2009; Griffits, & Stephenson, 2001; Mumtaz & Salway 2007).

Place of residence

Residential location has been found to play a role in ANC usage among pregnant women. Studies have found that urban women are more likely to comply with FANC than their rural counterparts. A Ugandan study, found urban women to be more compliant to FANC than rural women. Similar findings were recorded in India by Kulkami and Nimbakar in 2008. The longer the residential distance to the health facility, the lesser the likelihood of a pregnant woman complying with FANC (Tsegay et al., 2013; Villardsen et al., 2013).

Cultural practices

A number of cultural practices have been linked to poor utilisation of ANC services. A study conducted by Finlayson and Downe (2013) found that pregnant women in South Africa were told to wait until they missed several monthly periods before visiting antenatal clinic just to make sure that they were really pregnant. Another study conducted in Pakistan by Mumtaz and Salway (2007) found that pregnant women were ashamed to be seen in public due to the sexual intercourse associated with one getting pregnant. In other cultural contexts, pregnant women are afraid of being cursed or bewitched especially in Africa and South East Asia (Champman, 2003; Grossman-Kendal, Filippi, Komnick, Kanhou 2001, Mumtaz, & Salway, 2007). In other cultures, women would seek permission first before visiting any clinic either from husband, mother in-law, or other senior members of the family (Abrahams, Jewkes & Mvo, 2001; Mrisho et al., 2009; Champman, 2006; Mumtaz & Salway, 2007).

Summary of literature review

The reviewed literature indicated that early initiation and compliance with ANC has a number of benefits; conversely, non-compliance with FANC results in detrimental effects to the mother and her unborn baby. The literature also pointed to the significance of compliance with FANC in identification and mitigation of probable complications during pregnancy and birth, but rather most pregnant women chose to do otherwise missing all the good interventions offered through the FANC package. Maternal indicators for Dowa are basically poor just as Malawi in general. Usage of ANC according to the reviewed literature has a role in determining these indicators hence this study explores usage of FANC among women in Dowa District.

CHAPTER THREE

RESEARCH METHODS

Study design

A descriptive cross-sectional design using quantitative methods was used to conduct this study. A cross sectional research design provided the researcher with a picture or a snapshot of what might be happening in a sample or population of people in a particular time (Maltby, Williams, & Day, 2014). This design was suitable for the research topic because the researcher was seeking to find what happened in a population of pregnant women in terms of compliance with focused antenatal care as there was inadequate information regarding this especially for Dowa district.

Study population

The study population consisted of pregnant women of any age and parity who had attended at least one antenatal care visit, had a gestation age of not less than 30 weeks and were awaiting labour in maternity waiting homes or attending antenatal care services at antenatal care clinics. This population was chosen because most pregnant women found in maternity waiting homes were of term pregnancies and had been advised to await labour and delivery by health workers in their various health facilities. They had an opportunity to attend to all the four antenatal visits stipulated in FANC. It was feasible to obtain information from such women as they had been exposed to antenatal care services. At antenatal care clinics pregnant women of different gestations were also available for possible interview.

Study setting

The study was conducted at antenatal wards and clinics at Dowa District Hospital and Mponela Rural Hospital. Dowa District Hospital Maternity waiting home and clinic carter for

pregnant women coming from areas surrounding Dowa Hospital and from health centers located to east of the district while Mponela Rural Hospital maternity waiting home and clinic carter for women who come within Mponela trading center and those from health centers located to the west of the district. These two institutions provided the ideal setting for the study as it offered a representation of pregnant women almost from the entire district.

Sample size

Expected pregnancies for Dowa District Hospital in 2016 according to NSO projection was 2831, and for Mponela was 3868 but the proportion of pregnant women that complied with FANC in Dowa was unknown; therefore the sample size for this study was calculated using Cochran (1963:5) equation, which is:

$$n_0 = \frac{z^2pq}{e^2}$$

Where n_0= sample size

z^2 = is the abscissa of the normal curve (e.g. at 95% confidence interval its value is 1.96)

e = is the desired level of precision

p = is the estimated proportion

q = 1-p

$$n_0 = \frac{z^2pq = (1.96)^2 (0.5) (0.5)}{e^2 (0.05)^2}$$

= 385 women

The sample size for this study was 385 participants of which 192 were from Dowa district hospital and 193 from Mponela Rural hospital as the two facilities hold almost the same number of maternity clients.

Sampling method

Simple random sampling was used to identify study participants. In simple random sampling every member in a population had an equal chance of being picked. Here, pieces of papers written Yes or NO were put in a box and mixed. The women were asked to pick one paper and one participant picked only once. A pick of a YES meant that the woman would be included in the study. Picking a NO meant no participation in the study. To avoid re-sampling the same women for the study, the word "sampled" was written at the back of the health passport. Sampling at the maternity waiting homes was done twice a week, on Mondays and Thursdays and at the clinics it was done three times per week, Tuesdays Wednesdays and Fridays. The interview was conducted on a quiet selected place away from noise or other disturbances.

Inclusion criteria

The study recruited pregnant women of any reproductive age and parity who had attended antenatal care at least once. These women were drawn from maternity waiting homes and antenatal clinics and had a gestation age of not less than 30 weeks and were willing to participate in the study.

Exclusion criteria

Non pregnant women, pregnant women with unknown gestation, pregnant women below 30 weeks of gestation, pregnant women who did not attend antenatal care and those not willing to participate were excluded from the study.

Data collection

Data collectors

The collectors of data for the study included the researcher, and four assistants. The research assistants were three registered nurse midwives with over seven years experience in midwifery and one nurse midwife technician. The research assistants were trained for one full day; orientation to the study and its tolls was done in the morning and clinical practices in the afternoon. Data was collected between the months of May and June, 2016.

Research instrument

A structured questionnaire developed by the researcher and checked by the supervisor was used to obtain data. Development and modification of research questions was guided by theoretical framework; social ecological model.

Recruitment process

After obtaining permission from Dowa District Health Officer (DHO), on the first day of data collection, the researcher informed facility and departmental in charges about the commencement of data collection process. The researchers then went to antenatal wards and clinics where pregnant women were. The researchers greeted potential participants and self introductions were made. The study was explained to the pregnant women and invitations to take part in the study were forwarded. All pregnant women admitted in the maternity waiting

home and those attending antenatal clinics willing to participate in the study were included for sampling.

Data collection process

Having explained the study and successfully sampled the study participants, consent was obtained from the participants by them completing consent forms. Verbal consent was obtained from those who could not read or write. The data collection process was done through interviews which were guided by a structured questionnaire which was administered by data collectors. The guide composed of simple questions requiring yes or no responses which were covered by filling the responses in the research tool. Data from open ended questions was obtained through filling spaces provided in the questionnaire. Other data were collected from health passports; information like time of commencement and frequency of antenatal care visits. The tool was translated to Chichewa for easy understanding as such the interviews were also conducted in Chichewa and data was recorded through writing. The interviews took a minimum of 20 minutes and a maximum of 45 minutes.

Data management and analysis

Data management

The filled questionnaires were reviewed at the end of each data collection to make sure they were complete and accurate. Any missing information was recollected and verified with the participants. The completed data collection tools were put in sealed envelopes and kept in a lockable cabinet to make sure that the data was secure.

Data analysis

After data collection, the responses from the questionnaires were coded, and a data base was created using Cspro version 6.0, then the entered data was checked for completeness then database was exported to STATA for analysis. The following variables were analysed: age, gravidity, gestation at commencement of ANC, knowledge on ANC. Descriptive statistics such as means, frequencies and percentages were obtained. Data was presented in summary tables, summary statements and a pie chart. Association between parity, knowledge and compliance with FANC was established using a logistic regression. Here, a 95% confidence interval was used to measure the strength of the value generated through odds ratio. Responses from open ended questions were grouped manually, where similar responses or responses having the same meaning were put together, tallied and coded and frequencies were computed to come up with percentages under each response.

Table 1: Data Analysis Plan

Objective	**Type of data to be obtained**	**Method of data analysis**
To assess women's knowledge on focused antenatal care	Nominal	Descriptive statistics using percentages, averages
To identify intrapersonal, interpersonal, institutional, community and policy that affect compliance to FANC	Nominal	Descriptive statistics (means frequencies, tables)
To find out timing of	Interval	Descriptive statistics

commencement of ANC among pregnant women		
To compare intrapersonal, interpersonal, community and public policy factors associated with non compliance with FANC among prim gravidas and multi gravidas	Ratio	Logistic regression with a p value of less or equal 0.05 being of a significant effect

Validity and reliability

Validity refers to how closely the observed or measured state of affairs aligns with reality (Muhall, 2008). It is concerned with the degree to which an instrument measures what it is supposed to measure (Polit & Beck, 2010). Content validity looks at the degree to which an instrument has an appropriate sample of items for a construct being measured. It looks at how representative are the questions on a particular test or the inverse of that question in a topic (Polit & Beck, 2006). For this study, content validity was ensured by having the research tool reviewed by the supervisor where it was revisited and necessary corrections were made. It was further enhanced through use of information obtained from literature. The instrument was also piloted at Chankhungu health centre to check if there were any errors in the questions which were removed and replaced with correct ones.

Face validity

Looks at whether the instruments measures appropriate construct, especially to people who will be completing the instrument (Muhall, 2008). To ensure face validity, research assistants were oriented to the tool for half a day at Dowa district hospital. They were also involved during piloting process.

Construct validity

Construct validity assesses the quality of study tool. It looks at what is the instrument measuring. Construct validity was ensured by pretesting the tool at Chankhungu health centre with five clients and necessary corrections were made.

Content validity

Content validity refers to how accurately an assessment tool taps into different aspects of construct. It defines if questions really assess the construct under study (Hartas, 2010). In this study this was achieved by the questionnaire being reviewed by midwifery experts including the research supervisor and the study tool was pretested to in order to make corrections for unclear questions.

Reliability is about consistency and dependency of a measure if the research is repeated over time in the same context with similar population (Graham & Bond, 2008). Reliability also looks at the accuracy by which an instrument measures the intended variable. A reliable instrument will produce scores which are true. Reliability was enhanced by offering adequate details of the definitions of constructs or variables and the procedures employed to

collect and analyse data (Hartas, 2010). Pretesting the questionnaire will also help to ensure reliability.

Ethical considerations

Ethics is a system of moral values that is concerned with the degree to which research procedures adhere to professional, legal and social obligations to the study participants (Polit & Beck, 2010). In order to ensure that ethical issues have been considered, the research proposal was reviewed and approved by College of Medicine Research and Ethics Committee (COMREC) before data collection was initiated. Permission to conduct the study at the two facilities was sought from Dowa District Commissioner and Dowa District Health Officer.

Principles of self determination, confidentiality and fair treatment were followed when conducting this study.

To ensure self determination, participants were provided with detailed information regarding this study, its aims and the significance of carrying out this study. Consent was later sought from the participants prior to conducting the study.

Confidentiality was observed by not including names of the participants on the questionnaire but rather the questionnaires were just assigned with a specific number and the interviews were conducted in a separate room. The given responses were kept in a lockable cupboard.

Fair treatment was ensured by allowing participants to withdraw from the study if they felt so. They were also informed that their participation in the study had no direct benefits but that it could help in informing the midwifery practice and that their refusal to participate in the study would not affect their access to health care services. They were also informed that there were no risks involved if they participated in the study and that should they feel that their right

had been violated in any way, they were free to contact the chair person of COMREC for assistance.

Constraints and limitations

The study results may not be generalised because the study was conducted in one district. If the study was conducted in several districts with different cultural practices the study findings would have been enriched. The other limitations resulted from time and financial constraints of the researcher because it was conducted as a requirement for the fulfillment of Masters Degree and hence there was limited time and funds allocated for the study.

CHAPTER FOUR

PRESENTATION OF STUDY RESULTS

Introduction

This section presents main findings of this study according to study objectives. The objectives of this study were: firstly, to assess pregnant women's knowledge on focused antenatal care, secondly, to identify intrapersonal, interpersonal, institutional and public policy factors that affect compliance with focused antenatal care, thirdly, to identify time of commencement of antenatal care among pregnant women and lastly to compare intra personal, interpersonal institutional and public policy factors on compliance to focused antenatal care.

Summary of descriptive statistics is presented in a few paragraphs first followed by tables. A total of 386 pregnant women were interviewed using a questionnaire, 47.2% (n=182) were interviewed at Dowa District Hospital and 52.8% (n=204) from Mponela Rural Hospital.

Respondents' characteristics

Table (1) summarises the respondents' characteristics. The respondent's mean age was 24.6years; their age range was 15 to 47 years with a standard deviation of 6.2years. They were predominantly from Chewa ethnic group, 87%, and most of them, 98.5%, were married. On religion, almost all respondents, 98% belonged to various Christian faiths. The majority, 89.9% had formal education, mostly up to primary level, 81.2%. Farming was the major income generating activity reported by most women, 81.6%; and their spouses

predominantly also depended on farming, 72%. Out of all the respondents, 43% were primi-gravidas, and 73.8% had term pregnancies (36 weeks and above).

Table 2: Demographic characteristics of participating mothers (n=386)

Variables	**Category**	**n (%)**
Age	11-15	2(0.5)
	16-20	119(30.8)
	21-25	140(36.2)
	26-30	60(15.5)
	31-35	35(9.0)
	36-40	22(5.7)
	41-45	7(1.8)
	46-50	1(0.5)
Marital status	Married	380(98.5)
	Single	4(1.04)
	Divorced	3(0.52)
Ethnic group	Chewa	336(87.1)
	Tumbuka	21(5.4)
	Ngoni	23(5.96)
	Yao	3(0.78)
	Others	3(0.78)
Religion	Anglican	27(6.99)
	Catholic	106(27.5)
	CCAP	110(28.5)
	Islam	5(1.3)
	SDA/SDB	5(1.3)
	Other Christians	126(32.64)
	No religion	7(1.8)
Level of education	None	39(10)
	Junior primary	118(34)
	Senior primary	164(43.3)
	Secondary	63(18.2)
	Tertiary	2(0.58)

Respondent's occupation	Business	55(14.2)
	Farming	315(81.6)
	Piece work	8(2.1)
	Office work	8(2.1)
Husband's occupation	Business	68(17.7)
	Farming	277(72.1)
	Piece work	26(6.8)
	Office work	13(3.4)
Parity	None	166(43)
	One	77(20)
	Two	54(13.99)
	Three	35(9.1)
	Four	25(6.5)
	More than four	29(7.5)
Gestation age at the time of interview	30-35 weeks	101(26.2%)
	36-42 weeks	285(73.8%)
Complications suffered during previous pregnancies	**n=82**	
abortion	20(24.4%)	
APH/PPH	10(12.2%)	
Malaria/anaemia	8(9.8%)	
C/Section due to CPD, prolonged labour, etc	15(18.2%)	
Eclampsia	6(7.3%)	
Retained placenta	7(8.5%)	
Still birth	8(9.8%)	
Premature labour	8(9.8%)	

Knowledge on FANC

This section assessed pregnant women's knowledge on FANC usage. Knowledge was assessed by asking the respondents time for ANC commencement, firstly, when a woman has no complication and secondly when there is a complication. It was also assessed by asking them on the recommended number of ANC visits a pregnant woman is supposed to make during the entire pregnancy period, reasons for visiting the ANC clinic and lastly possible complications one can suffer due to late entry into ANC.

When asked as to what gestation age should a pregnant woman commence FANC visits, 72.5% mentioned the first twelve weeks of pregnancy as being the right time to start ANC visits, 21.8% cited the second trimester (more than 12 weeks) and 5.7% mentioned the third trimester (after 24 weeks). On the number of visits a pregnant woman should make to ANC clinic when having no complication, 11.9% mentioned four visits as recommended by FANC guide lines. On the number of ANC visits to be made when a pregnant woman experiences complications, 13% mentioned more than four visits just as stipulated in FANC guidelines. On the benefits of FANC, 67% agreed that a pregnant woman goes for ANC to receive preventive interventions. On the other hand, 37% agreed that a woman goes to ANC to be taught and counseled. About two thirds of participants, (65%) agreed that they go for ANC to be examined so as to find if they have any underlying conditions while on establishment of a helping relationship with a health care provider, 84.5% disagreed with this idea as the correct reason for visiting ANC clinic as summarised in Table (3).

Table 3: Respondent's knowledge on FANC (n=386)

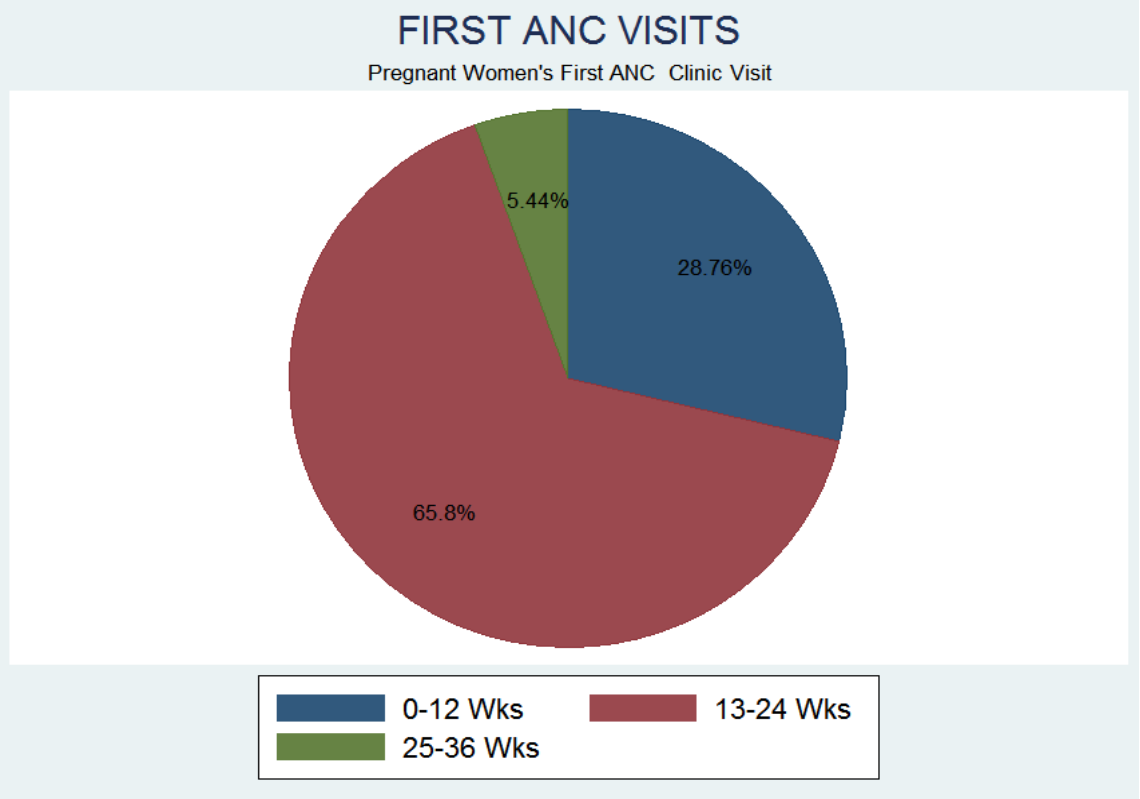
Item	Category	n (%)
Time to commence FANC visits		
	≤12 weeks	279(72.5)
	≥12weeks	84(21.8)
	≥24weeks	22(5.7)
Number of visits to make when there is no problem	One visit	3(0.78)
	Two visits	86(22.3)
	Three visits	36(9.3)
	Four visits	46(11.9)
	More than four visits	215(55.7)
Number of visits to make when there is a problem		
	One visit	39(10.1)
	Two visits	58(15)
	Three visits	59(15.3)
	Four visits	180(46.6)
	More than four visits	50(13)
Benefits of FANC		
	To receive preventive interventions	259(67)
	To be taught and counseled	141(36.5)
	To be examined	249(64.5)
	To establish a helping relationship with providers	60(15.4)
Likely complication if one starts FANC late		
	None	136(35.2)
	One (i.e., anaemia, or eclampsia)	130(33.7)
	Two (i.e. anaemia, IUGR)	56(14.5)
	Three (i.e., LBW, anaemia, IUD)	34(8.8)
	Four (i.e., LBW, IUGR, IUD, anaemia)	30(7.8)

Looking at the table (3) above, pregnant women had knowledge regarding time of commencement of ANC as stipulated in FANC 72.5% (n=279). On the number of visits a woman is supposed to make when there is no problem, a few 11.9% (n=46) were knowledgeable, while 13% (n =50) had right knowledge on number of visits to make when there is a problem. This just shows that more women (72.5%) mainly new one factor, thus time of ANC commencement but lacked knowledge in most areas on focused antenatal care.

Time of commencement of antenatal care among pregnant women

This section assessed the gestational age by which pregnant women made their first ANC visit. Figure (2) demonstrates gestation at which respondents in this study made their first ANC visit. Despite 72% mentioning the first twelve weeks as the ideal time for ANC commencement, 28.8% of the pregnant women made their first ANC visit within 12 weeks of pregnancy (early) and 65.8% started ANC after 12 weeks gestation, while 5.4% made their First ANC appearance after 24 weeks gestation. Otherwise, over 70% of pregnant women in this study, started ANC visits late (>12weeks). On number of visits made, 67.2% of respondents made less than four visits.

Figure 2: Pie chart showing times of commencement of first ANC visit by pregnant women



Gravidity and FANC usage

The aim of this section was to assess whether gravidity affects compliance with focused antenatal care. Respondents were categorised into primegravidas and multigravidas. Compliance with FANC was assessed by looking at time of ANC commencement (≤12 weeks or >12 weeks) and number of visits (<4 visits and ≥ 4 visits). The findings were that 70% of primegravidas started ANC later than twelve weeks (late) and 72.1% of multigravidas started ANC late. On the number of ANC visits, 61.9% of primegravidas made less than four visits while 72.6% of multigravidas made less than four visits. These findings just show that gravidity did not affect compliance with FANC in this study.

Intrapersonal, interpersonal, institutional, community and public policy factors affecting compliance with Focused Antenatal Care.

This section assessed rationales for starting ANC visits at an early or late stage. Various reasons were given for starting FANC visits at a specific gestational age; for example, 35% (n=137) of the respondents wanted to confirm pregnancy, 8.8% (n=34) was advised either by friends, health workers, parents or husband, 9.1% (n=35) visited ANC clinic due to illness. Table (4) below summarises reasons for commencing ANC at a specific gestation.

Table 4: Reasons given for starting ANC visits at a specific gestation age (n=386)

Factor	n (%)
Advice from parents, peers, health worker etc	34(8.8)
Availability of Bylaws in the communities	26(6.7%)
As a routine practice	10(2.6%)
Individual Choices	65(16.8%)
To confirm pregnancy	137(35%)
Bad previous experience	25(6.5%)
Illness	35(9.1%)
Perceived Cost of ANC	4(1%)
FANC knowledge	10(2.6)
Lack of health workers in our areas	2(0.52)
Long distance to health facilities	3(0.8)
Wanted to make few visits	17(4.4%)
Not sick	4(1%)
Busy farming	2(0.6%)
To be assisted during delivery	12(3.1%)

Comparing FANC knowledge and practice (logistic regression)

The aim of this section was to assess the relationship between respondent's knowledge and their practice in relation to FANC. On time of ANC commencement, 86%

(n=96) of those who said a pregnant woman should start FANC visits within the first trimester (12 weeks) started ANC in the first trimester and made four or more visits. This highlighted a positive relationship between knowledge and practice. However, 68.4% (n=173) of the respondents who said one can start ANC later than twelve weeks started ANC in the first trimester and made four or more visits. Finally, 46.7% (n=10) of those that said one can start ANC later than twenty-four weeks also started ANC in the first trimester and made four or more visits. Early commencement of ANC by those who did not have the right information on FANC could be attributed to some other factors other than knowledge which will be discussed further in the discussion section. This study also found that having knowledge on possible complications that can arise if a woman starts ANC late did not influence early commencement of FANC visits and making four or more visits for those who knew one or more complication 30% (n=25) started FANC visits early and made four or more visits

Comparing intrapersonal, interpersonal, institutional, community and public policy factors associated with non compliance with FANC (logistic regression)

The study also assessed factors that can enhance or inhibit pregnant women's compliance with FANC. These factors according to an ecological model and theory at glance were classified into intrapersonal/individual factors, interpersonal/community factors, institutional factors and public policy factors. In this study, just as literature revealed, some factors have been found to be associated with non compliance with FANC guidelines. For example, denial of being pregnant is associated with higher odds of starting ANC after twelve weeks and making fewer than four visits (OR, 2.1, 95% CI, 0.62, 7.11). Cost of starting FANC is also associated with higher odds of starting FANC visits late and

making fewer than four visits (OR, 1.6, 95% CI, 0.38, 6.38) so is long distance (OR, 1.5, 95% CI, 0.80, 2.84), value attached to FANC (OR, 0.7, 95% CI, 0.73. 7.77), and inadequate health workers (OR, 2.0, 95% CI, 0.09, 4.27). Having an age between 25-34 has also been found to be associated with higher odds of starting FANC visits late and making fewer than four visits (OR, 1.13, 95% CI, 0.69, 1.87) so is having the age of 35 or more (OR, 1.38, 95% CI, 0.66, 2.85). Table (5) below summarises factors associated with non compliance to FANC in accordance with the classifications in the ecological model.

Table 5: Factors associated with noncompliance with FANC- logistic regression (n=386)

Variables	***Category***	***ANC timing probability Odds Ratio (OR)***	***95% CI***
Intra-personal factors	Fear of being tested for HIV	1.0	0.49, 2.07
	Value attached to FANC	7.5*	0.73, 7.77
	Fear of showing off pregnancy	0.73	0.19, 2.83
	Denial of being pregnant	2.1*	0.62, 7.11
Age Category (years)	15-24 years	0.38	0.28, 0.50
	25-34 years	1.13*	0.69, 1.87
	35+ years	1.38*	0,66, 2.85
Interpersonal factors	Health workers attitude	1.1	0.45, 2.52
	Waiting to get permission	0.97	0.40, 2.33
	Unsupportive husband	0.88	0.26, 2.99
Institutional factors	Lack of privacy	0.15	0.01, 0.75
	Long waiting time	0.74	0.31, 1.76
	Long distance	1.5*	0.80, 2.84
Community factors	Cultural beliefs	0.85	0.40, 1.78
	Misconceptions	0.85	0.40, 1.78
Public policy factors	Inadequate health workers	2.0*	0.09, 4.27
	Unavailability of health workers	0.69	0.05, 8.44
	Cost of starting ANC	1.6*	0.38, 6.38

Key:*means the value is significant

CHAPTER FIVE

DISCUSSION OF THE FINDINGS

Time of ANC commencement

This study has revealed that there is high prevalence of non compliance with FANC guidelines among pregnant women in Dowa district. Late entry to ANC was at 71.2% and those making four or more recommended FANC visits were at 32.8%. This result is lower than what was reported in a Lilongwe study where the prevalence of late ANC attendance was at 98% (Chiwaula, 2011), and almost the same with the one found in a Zambian study, 72% (Banda, 2012) and higher than the 41% Australian study (Trinh, et al., 2004). Furthermore, the finding in this study where women who made four or more visits was at 32.8%, is slightly lower than the one reported in a Ugandan study where almost half (48%) of pregnant women made four or more FANC visits (Okutu, 2012). Another study conducted in South Sudan reported that 24% of pregnant women made four or more ANC visits which is even lower than the findings recorded in this study (Mugo, Dibley & Agho, 2015).

Knowledge about FANC

The study demonstrated that most pregnant women were conversant with only one component of FANC namely, time of commencement of ANC visits, (72%) of respondents whereas only a few (11%) were knowledgeable about number of visits to make when one has no complication and 13% knew the number of visits to make when one has a complication. These results differ from Nigerian study findings where 80% of pregnant women interviewed were not aware of focused antenatal care (Amosu, Degun, Thomas,

Olanrewaju & Babalola 2011). These findings also agree with study findings from Zimbabwe where 72% of respondents said they would comply with FANC guidelines if they had the correct information (Chaibva, Roos & Ehlers 2009).

On likely complications a pregnant woman may suffer if she starts ANC visits late, this study found that over half (64.8%) of respondents were at least aware of one complication. This finding agrees with one registered in a study conducted in Papua New Guinea where majority of respondents in that study cited malaria as the only complication a pregnant woman can suffer (Andrew, Pell, Angwin, Auwin & Daniels, 2014). Moreover, in Mali pregnant women who did not attend antenatal care services were found to lack knowledge in FANC (Carson et al., 2011). The cited studies just echo the findings in this study that pregnant women in some settings lack adequate knowledge on focused antenatal care rendering them less equipped to make informed decisions concerning FANC and this can lead to poor utilisation of the service.

Intrapersonal, interpersonal, institutional, community and public policy factors that affect compliance with FANC

Respondents in this study stated various reasons behind their decisions to start ANC visits at a certain gestation. Among the given reasons included; advice from peers, parents or health workers, availability of bylaws, choice, illness, to be examined so as to confirm pregnancy, cost, long distance, lack of health workers, health worker's bad attitude, to make few visits, being busy with farming and to be assisted during delivery. Similar findings have been reported in several studies and have been found to have implications on pregnant women's compliance with FANC guidelines especially late entry and making

fewer than stipulated number of visits (Lilungulu, Matovelo & Gesase, 2016; Ajayi, Osakinle, Osakinle 2013; Tsegay et al., 2013; Choulagai, Onta, Subedi, Mehata, Bhandari, Poudyal, 2013; Okutu, 2012, Andrew et al., 2014; Manzi et al., 2014). For example, if a pregnant woman awaits permission or advice from parents or peers to start ANC visits and the one to do so delays or gives incorrect advice, that woman is likely to start ANC visits late.

Gravidity and compliance with FANC

This study found that there was no difference in FANC usage among primgravidas and multigravidas as 70% of primes started ANC late and 61% of them made less than four visits. Likewise, with multigravidas, 72% of them started ANC late and 72.6% made less than four visits. Similar findings were registered in a study conducted in Ethiopia where both primgravidas and multigravidas had equal ANC usage although the difference was that in the Ethiopian study, both primes and multigravidas were found to be more compliant with FANC (Mulat, Kassaw & Aychiluhim, 2015). However, Banda (2013) in Ntchisi found that primegravidas were more likely to start ANC early and make more than four ANC visits.

Age in this study was also found to be associated with non compliance with FANC. For example, having age between 25-34 was found to be associated the higher odds of starting ANC late and making fewer than four visits (OR, 1.3, 95% CI, 0.69, 1.87), so was having age of 35 or more (OR 1.38, 95% CI 0.65, 2.85). This finding is different from a study conducted in Botswana where older women, (30 years and above) were more

compliant with FANC services (1.15%) and those who were 25-29 years were more complaint (1.17%) (Mulima, 2014).

Other factors associated with non compliance with FANC

The results from this study suggest that human behaviour, in this case non compliance with focused antenatal care guidelines, just as the ecological model suggested, affects and is affected by a multilayered set of systems; these include, family, neighbourhood, peer group, health care systems, cultural beliefs, and value system in which individuals live . In this study, and according to literature, the factors assessed with an aim of finding out whether they had an impact to compliance with FANC guidelines included; fear for HIV testing, denial of being pregnant, value attached to FANC and more which will be discussed in subsequent paragraphs.

Comparing intrapersonal/individual factors associated with non compliance with FANC

Fear of being tested for HIV: Despite many studies citing fear of HIV testing as a barrier to accessing FANC services both in African and European contexts, this study found no such association (OR 1.0, CI 0.49, 2.07)(Rujumba, Neema, Tumwine, Tylleskar & Heggenhougen, 2013; ECDC, 2010; Ben-Natan & Hazanov, 2015). This is quiet interesting, but also could reveal acceptability of HIV testing as a PMTCT strategy as more participants in this study attested to the significance of getting tested for HIV for their own benefit and benefits of the baby.

Value attached to FANC: The findings in this study demonstrated that non compliance with FANC was associated with the value the pregnant women had concerning the

approach (OR 7.52, CI 0.73, 7.77), in other words, pregnant women perceived FANC to be of little significance. This partly explains the reason for non compliance by most women in this study. This could not be surprising as most women revealed lack of adequate knowledge about FANC and it is quiet unrealistic to expect someone to value an approach she has little knowledge about. The result is different from what was reported in a Tanzanian study where 74.2% agreed that FANC is valuable and that pregnant women should try to initiate visits in the first trimester (Lilungulu, Matovelo & Gasesa, 2016).

Fear of showing off pregnancy: This study has revealed that pregnant women did not face showing off pregnancy as a challenge to comply with FANC (OR 0.73, CI 0.19, 2.83). This result is different from most literature which reported that sometimes pregnant women report late for ANC for fear of showing pregnancy (Champman, 2003; Grossman-Kendal, 2001, Mumtaz & Salway, 2007).

Denial of being pregnant: In the current study, denial of being pregnant was found to be associated with non compliance with FANC (OR 2.1, CI 0.62, 7.1). This finding is in harmony with findings from most studies which indicated that sometimes pregnant women, especially teenagers, single mothers, and very old mothers would not immediately accept being pregnant, as such they would delay reporting for ANC visits or thinking that may be the pregnancy would get terminated (Trinh, 2006; Kogan et al., 1998; Ahmed et al., 2002; Tsegay et al., 2013).

Interpersonal factors

Under interpersonal factors, three factors were used to assess compliance with focused antenatal care services. These factors included; health workers attitude, waiting to get permission, and unsupportive husband.

Health workers' attitude: Findings from this study indicated no association between health worker's attitude and ANC usage (OR 1.1 CI 0.45, 2.52). This can be a positive finding which could be pointing to a change in health workers' attitude as there are several studies where pregnant women have complained of failure to effectively use ANC services following health workers' bad attitude. For example, in qualitative findings for a study conducted by Mgawadere, 2009 in Mangochi, pregnant women complained of foul language used by health workers. Similarly, Chiwaula (2011) in Lilongwe found that pregnant women were being shouted at for no apparent reason. Likewise, a Nigerian study reported that between 16.4%-32.7% of pregnant women reported bad attitude by health workers (Idris et al., 2013).

Waiting to get permission: Findings in this study showed no association between compliance with FANC and the pregnant women ability to seek for permission to start ANC visits (OR 0.97, CI 0.40, 2.33). This result is different from most literature which found that in some cultural settings elders, mother in laws, and other senior family members decide for the pregnant woman on the time to start FANC visits (Finlayson & Downe, 2013; Matsuoka et al., 2010; Simkhada et al.).

Unsupportive husbands: Findings from this study showed that husbands were supportive to their wives in terms of FANC usage. The computed odds ratio showed no association

between husbands being supportive and FANC usage (OR 0.88 CI 0.26, 2.99). This result is different from the one recorded in a Ugandan study where husbands were found not to be supportive to their pregnant wives in relation to FANC usage. The reason given in that study was fear of disclosure of one's STI status during routine screening, constrained economic status and also a feeling that it was culturally unacceptable for a man to be involved during ANC services.

Institutional factors

Lack of privacy: Findings from this study demonstrated that there was no association between lack of privacy and compliance with FANC services. This simply means that pregnant women did not find privacy as a barrier for them to attend to ANC services (OR 0.15, CI 0.01, 0.75). This result is different from most literature where privacy was found to be a factor that hindered more pregnant women from utilising FANC services. A study conducted in South Africa unveiled pregnant women's concerns about lack of privacy by health workers making ANC seekers reluctant to visit clinics or rather do so very late (Amnesty International, 2014). Such findings were also recorded in Mexico where pregnant women delayed visiting ANC clinic for fear of their personal privacy especially with HIV sero status ascertainment (Kendall, 2014). This is a striking finding which unveils that issues of privacy are cross-cultural and could really work as a barrier for ANC usage.

Long waiting time: There was no association between long waiting time and compliance with FANC (OR 0.74, CI 0.31, 1.76). Different from this finding are studies which identified long waiting time as a barrier for effective use of ANC services (Ganga-Limando et al., 2015; Centenary, 2008).

Long distance: this study revealed higher odds of non compliance with FANC with long distance (OR 1.15, CI 0.80, 2.84). This is in agreement with other study findings where pregnant women reported late for ANC due to long distances to the clinics (Chitimbe, 2006; Adamu, 2011; Alexandre et al., 2005; Banda, 2012). This could be very true for Dowa district due to its terrain. Dowa is mostly hilly dividing the district into highlands and low lands making it difficult for the residents to cross the hilly barriers to access health services more especially in the eastern side.

Community factors

The study also explored community factors associated with non compliance with FANC. The two community factors identified from literature were misconceptions and cultural believes. These two factors in this study were not associated with non compliance to FANC (OR 0.85, CI 0.40, 1.78). This result is different from the ones identified in literature which identified that cultural belief s and misconceptions play an important role in hindering pregnant women from making effective use of ANC services. Most studies cited fear of wizards from terminating pregnancy, fear of receiving bad omens if wizards know early that one is pregnant, or sometimes the pregnancy going missing due to witch craft (Simkhada et al., 2008; Dako-Gyeke, Alkins, Aryeetey, Mccough, Adongo, 2013; Kulkami & Nimbarkar, 2008; Chaibva, Roos & Ehlers, 2009; Mason, Dellicour, Kuile, Ouma & Howard, 2015, Banda, 2013).

Public policy factors: Public policy factors identified in this study included; inadequate health workers, unavailability of health workers, and cost of starting ANC. Having inadequate health workers was associated with higher odds of noncompliance with FANC

(OR 2.0, CI 0.09, 4.27) so was cost of ANC (OR 1.6, CI 0.38, 6.38). Several studies have also found similar findings to be a barrier to ANC access (Tsawe, Moto, Netshivherra, Ralegeso, Nyathi, 2015; Agus & Horiuchi, 2012; Titaley et al., 2010; Tran et al., 2011; Mason et al., 2015; Dako-Gyeke et al., 2013; Mugo et al., 2015; Okutu, 2012). Unavailability of health workers was not found to be associated with non compliance with FANC (OR 0.69, CI 0.05, 8.44). Contrary to this finding some studies have found lack of health workers in some institutions to contribute to poor FANC usage (Roberts, Sealy, Mashall, Manda-Taylor, Gleson-Pet, 2015; Ganle, Parker, Fitzpatrick, Otupin, 2014, Gross et al., 2011).

Conclusion

Non compliance with FANC remains a major problem in Dowa District and lack of adequate correct knowledge has been found to be a major setback for an effective utilisation of focused antenatal care among pregnant women. The social ecological model states that behaviour affects and is affected by multiple levels of influence. Secondly, behaviour shape and is shaped by the social environment. The five levels of influence identified in this model namely; intrapersonal, interpersonal factors, institutional factors, community and public policy factors. In this study, several factors under the above classifications have been found to have implications on focused antenatal care usage. Factors like age, health workers attitude, long waiting time, denial of being pregnant, cost of ANC have been associated with higher odds of non compliance with FANC**.**

Furthermore, the study has found age and gravidity to be the demographic factors associated with non compliance with FANC. Cost, long distance, denial of being pregnant,

value attached to FANC, and inadequate health workers have been found to be associated with non compliance with FANC. Therefore, the study has found that the majority of pregnant women in Dowa district do not comply with the WHO FANC model.

Strengths and weaknesses of the study

The study has a number of strengths: Firstly, data was collected in the major referral hospitals of Dowa and Mponela thus giving a good representation of the sample across the district. Furthermore, the study was conducted among women with current pregnancies of which some of them have had several pregnancies and had been using the FANC model for some time. Therefore, ideas gathered in this study are not from women who once used the FANC approach several years prior to the study, they are ideas from the current practices. All planned participants were recruited in this study and there was no missing data.

However, the study had some weaknesses: This study was conducted in health facilities and data collectors were health workers, this could contribute to the underreporting of health worker factors as a barrier to FANC usage. Secondly, research assistants were used during data collection; this could create variance in the manner data was collected although they were fully oriented to the research tool and were involved in the pretesting process.

Recommendations

The study has provided information on reasons for non compliance with focused antenatal care in Dowa District. Therefore, the following recommendations, if fully implemented may help improve compliance with FANC among pregnant women in the district.

- There is lack of in depth knowledge on FANC therefore there is a need for enhanced information, education and communication (IEC) on FANC in all health facilities in the district by all ANC providers.

- Long distance to the clinic was associated with higher odds of stating ANC late hence there is need for comprehensive outreach clinics by clinical and midwifery providers so that those in hard to reach areas can access FANC services timely.

- Lack of personnel in some facilities contributed to late initiation of ANC by some women (OR 2.0, 95% CI 0.09, 4.27) hence the Ministry of Health should ensure adequate staffing of all health centers so that there is coverage in all health facilities on daily basis.

- The odds of starting ANC late was high if the pregnancy was unintended (OR 2.1, 95% CI 0.62, 7.1) hence other reproductive health services should be enhanced like family planning services. This will help to ensure that women should have intended pregnancies.

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APPENDICES

Appendix1: Information letter on pregnant women's compliance to focused antenatal care

Appendix 2: Information letter (Chichewa version)

Appendix 3: Participants consent form

Appendix 4: Participants consent form (Chichewa version)

Appendix 5: Questionnaire

Appendix 6: Questionnaire (Chichewa version)

Appendix 7: Letters of request to conduct study

Appendix 1: information letter on pregnant woman's compliance to focused antenatal care.

My name is Davison Machika, a student of University of Malawi, Kamuzu college of Nursing. I am pursuing a Masters Degree in Reproductive Health. As part of my studies, I am conducting a research project on '***Pregnant women's compliance to Focused Antenatal Care in Dowa District'.*** The aim of the study is to explore pregnant women's practices with regards to focused antenatal care. The purpose of this letter is to invite you to participate in the study.

Participation in the study is voluntary. You may choose to participate or withdraw from the study at any time and this will have no effect on the services that you receive from the health care providers at this facility. Furthermore, participation to this study does not have any foreseeable physical harm (risks); however, in case any emotional or psychological harm, you may forward your concerns and complaints to the researcher at Kamuzu College of Nursing. You should also be informed that there are no benefits for participating in this study. However, findings of the study may help in finding existing gaps in the practice of focused antenatal care. Furthermore, the findings may also influence policy in regard to provision of focused antenatal care. No reports in this study will identify you in any way and the results of the study will be given to you if needed. Should you participate in the study, I will ask you to sign a consent form or put your finger print in the space provided to indicate that you have accepted to be interviewed. It is anticipated that the interview will take 20-30 minutes of your time and the interview will be conducted at a time that is most suitable and convenient to you in a quiet environment to avoid any disturbances. The study and its procedures have been approved by College of Medicine Research Ethics Committee (COMREC), the District Health Officer of Dowa. If you require any further information regarding the study or your rights as study participant you are free to contact me on this address: Davison Machika, Kamuzu College of Nursing, Blantyre Campus, P.O Box 415, Blantyre. Cell phone 0884313420/0999 095476. You may also contact; The Chairperson, College of Medicine, Research and Ethics Committee, P/Bag 360, Chichiri, Blantyre 3,

Appendix 2: Kalata yofotokoza za kafukufuku woona ngati amayi oyembekezera akutsatira ndondomeko ya sikelo ya amayi

Dzina langa ndine Davison Machika, wophunzira pa sukulu ya ukachenjede ya Kamuzu Koleji amane ndikupanga maphunziro aubereki ndipo ndikupanga kafukufuku wokhudzana ndi "Katsatiridwe ka ndondomeko ya amayi oyembekezera mmboma la Dowa". Cholinga cha kalatayi ndi kukupemphani kuti mutenge nawo mbali pa kafukufukuyi.

Dziwani kuti simukukakamizidwa kutengapo mbali mukafukufukuyu komanso muli ndi ufulu wosiya kutenga mbali mu kafukufukuyu nthawi iliyonse ndipo sipadzakhala vuto lirilonse pa chithandizo chomwe mumalandira pa chipatalachi. Muli omasuka kufunsa funso lirilonse lokhudza kafukufukuyu. Dziwaninso kuti mayankho anu adzasungidwa mwachinsinsi ndipo sizizadziwika kuti wayankha mafunsowa ndi ndani chifukwa dzina lanu silidzalembedwa pa pepala la mafunso mmalo mwake tidzagwiritsa ntchito nambala. Dziwaninso kutinso palibe chiopsezo chilichonse pa kutenga nawo mbali mu kafukufukuyi.

Ngati mwavomereza kutenga nawo mbali pa kafukufukuyi mudzapemphedwa kusaina kapena kusindikiza chala chanu pa kalata ya chilolezo komanso kuyankha mafunso kwa nthawi yosachepera mphindi makumi awiri (20) komanso osaposa mphindii makumi anayi ndi mphambu zisanu (45).

Ngati pangakhale nkhawa kapena chodandaula chilichonse chokhuzana ndi kafukufukuyi, muli omasuka kubweretsa madandaulo anu kuma adiresi awa: Davison Machika, Kamuzu College of Nursing, Blantyre Campus, P.O. Box 415, Blantyre. Cell phone 0999 095476 kapena 0884313420; kapena Chairperson, College of Medicine, Research and Ethics Committee, P/Bag 360, Chichiri Blantyre 3. Telephone 01989766.

Appendix 3: Participant's Consent Form

Please read and sign the form if you are taking part in this study

I have read or have had another person read to me and I have understood the contents of the information letter and I have been given the opportunity to ask questions, where deemed necessary, about the study and its procedures. I understand that the information I have given will be kept confidential and will only be accessed by the researcher and/or those people who are directly concerned with the study. I know that I do not have to suffer any injury or harm during the research process and the information that I will give to the researcher should not be used against me in future. I voluntarily agree to take part in the study.

……. …….

Participant's Signature Date

……. …….

Name of person taking consent Date

(If different from researcher)

……. …….

Researcher's Signature Date

Should you have further inquiries use the following contacts: Davison Machika, Kamuzu College of Nursing, P.O Box 415, Blantyre. Cell phone 0884313420/0999 095476 OR The Chairperson, College of Medicine, Research and Ethics Committee, P/Bag 360, Chichiri, Blantyre 3,

Appendix 4: Kalata ya chivomerezo

Sainani dzina lanu kapena tsindikizani chala chanu pamalo omwe aperekedwawo ngati mwavomereza kutenga nawo mbali pa kafukufukuyu.

Ndavomereza kuyankha mafunso mmene ndingadziwire nditatha kuwerenga/kuwerengeredwa zomwe zalembedwa mkalata yolongosola za kafukufukuyu; cholinga chake ndi zovuta zake. Ndanvetsetsanso kuti ndili ndi ufulu wosiya kutenga nawo mbali nthawi ina iliyonse popanda vuto lina lirilonse ndipo kuti izi sizizasokoneza chithandizo chomwe ndimalandira pa chipatala pano. Ndavomerezanso kuti zomwe ndiyankhule kapena kupereka mu kafukufukuyi zidzasungidwa mwa chinsinsi ndiponso kuti palibe phindu palibe phindu la mtundu ulionse ndingapeze potenga nawo mbali mkafukufukuyi koma kuti zotsatira za kafukufukuyi zingathe kuthandiza kupititsa patsogolo nkhani zokhudza uchembere wabwino.

Ine ndavomereza kuperka chilolezo kutenga nawo mbali mu kafukufukuyi mosaumirizidwa.

Dzina la otenga mbali…… Tsiku

Dzina la otenga chilolezo……. Tsiku

Mwini kafukufuku…….. Tsiku

Ngati mungakhale ndi mafunso kapena madandaulo okhudza kafukufukuyi gwiritsani tchito ma adiresi awa: Davison Machika, Kamuzu College of Nursing, P.O. Box 415, Blantyre. Cell phone: 0999 095476/0884313420 kapena The Chairperson, College of Medicine, Research and Ethics committee, P/Bag 360, Chichiri, Blantyre 3. Telephone 01989766

Appendix 5: Questionnaire

COMPLIANCE WITH FOCUSED ANTENATAL CARE AMONG PREGNANT WOMEN IN DOWA DISTRICT

Questionnaire No…….

Date…….

Institution……..

Name of interviewer……..

Instructions

(a) Explain the purpose of the interview to the woman
(b) Ask for consent before proceeding with the interview
(c) Make sure all questions are answered
(d) Tick as appropriate

PART A: RESPONDENTS PERSONAL CHARACTERISTICS

1. How old are you?.....

2. What is your marital status?
   (a) Married [ ]
   (b) Single [ ]
   (c) Divorced [ ]
   (d) Widowed [ ]
   (e) Separated [ ]
3. What is your tribe or ethnic group?
   (a) Chewa[ ]
   (b) Tumbuka[ ]
   (c) Ngoni[ ]
   (d) Yao [ ]
   (e) Lomwe[ ]
   (f) Others
   (Specify)……..

4. What is your religion?

(a) Christian [ ]
(b) Muslim [ ]
(c) No religion [ ]
(d) Others
(Specify)……

5. Have you ever attended school?
   (a) Yes [ ]
   (b) No [ ]
6. If yes what is your highest qualification?
   (a) Junior primary (1-5) [ ]
   (b) Senior primary (6-8) [ ]
   (c) Secondary [ ]
   (d) Tertiary [ ]
7. What do you do for a living?
   (a) Business [ ]
   (b) Piece work [ ]
   (c) Office work [ ]
   (d) Farming [ ]
8. What does your husband do for a living?
   (a) Business [ ]
   (b) Piece work [ ]
   (c) Office work [ ]
   (d) Farming [ ]

9. How many pregnancies have you had?
   (a) One [ ]
   (b) Two [ ]
   (c) Three [ ]
   (d) Four [ ]
   (e) More than four [ ]
10. How many deliveries have you had?
(a) None [ ]
(b) One [ ]
(c) Two [ ]
(d) Three [ ]
(e) Four [ ]
(f) More than four [ ]
11. Did you have any complication during previous deliveries?
   (a) Yes [ ]
   (b) No [ ]

12. If...yes
    specify……
    ……
    ……
    ……

PART B: QUESTIONS ABOUT FOCUSED ANTENATAL CARE

13. At what gestation age did you commence antenatal care visits (verify with documentation in health passport).
    (a) 0-3 months (0-12 weeks) [ ]
    (b) 4-6 months (13-24 weeks) [ ]
    (c) 7-9 months (25-36 weeks) [ ]
    (d) I do not know [ ]
14. When is a pregnant woman supposed to start antenatal care
    (a) 0-3 months (0-12 weeks) []
    (b) 4-6 months (13-24 weeks) []
    (c) 7-9 months (25-36 weeks) [ ]
    (d) I do not know [ ]
15. What is total number of ANC visits made by the participant (check in health passport)
    (a) One visit [ ]
    (b) Two visits [ ]
    (c) Three visits [ ]
    (d) Four visits [ ]
    (e) More than four visits [ ]
16. How many visits should a pregnant woman make to ANC during the whole pregnancy period?
    (a) When there is no problem----------
    (b) When there are problems----------
17. What are the benefits of attending ANC

	BENEFIT	YES	NO	NOT SURE
	For establishment of a helping relationship with the provider			
	For the skilled provider to interview, examine and identify pre existing health conditions			
	For the skilled provider to teach and counsel the pregnant woman			
	For the pregnant woman to receive preventive interventions like immunisations, iron, sp, ITN's, Vit A, deworming, PMTCT			

18.What influenced your decision to start antenatal care at this gestation……
……
……
……
……
……
……

19. What problems is a pregnant woman likely to experience if she starts antenatal care late?

(a) Anaemia [ ]
(b) Premature delivery [ ]
(c) Intra uterine growth retardation [ ]
(d) Pre eclampsia[ ]
(e) Increased perinatal deaths [ ]
(f) Low birth weight babies [ ]
(g) None [ ]

PART C: FACTORS ENHANCING/INHIBTING COMPLIANCE TO FANC

Individual level

20. Was this pregnancy planned?

(a). Yes [ ]

(b). No [ ]

21. When you wanted to start antenatal care, was each of the following a problem or not (intrapersonal, interpersonal, institutional, community and public policy factors)

	PARAMETER	PROBLEM	NO PROBLEM
Individual level (intrapersonal)	Fear of being tested for HIV		
	Value attached to FANC		
	Fear of showing off pregnancy		
	Denial of being pregnant		
Interpersonal level			
	Health workers attitude		

	Waiting to get permission		
	Unsupportive husband		
Institutional level			
	Lack of privacy		
	Long waiting time		
	Long distance		
Community level			
	Cultural beliefs		
	Misconceptions		
Public policy			
	Inadequate health workers		
	Un availability of health workers		
	Cost of starting ANC		

Others
(specify)……

22. Do you have to pay for you to start Focused Antenatal Care clinics?

(a) Yes [ ] (b) No []

If Yes, how much K…….

23. How affordable is this amount to you?

(a) Cheap

(b) Fair

(c) Expensive

THANK YOU

Appendix 6: Interview schedule- Chichewa version

Katsatiridwe ka sikelo pakati pa amayi oyembekezera m'boma la Dowa

Chofunsira nambala……..

Tsiku…….

Malo…….

Wofunsa mafunso……..

Malangizo

(a) Fotokozani cholinga cha kafukufukuyi kwa mayi

(b) Pemphani chilolezo musanapitirize ndi kafukufuku

(c) Wonetsetsani kuti mafunso anse ayankhidwa

(d) Chongani malo oyenera

MBALI A: MBIRI YA OFUNSIDWA MAFUNSO

1. Muli ndi zaka zingati…….

2. Kodi muli pa banja?

(a) Ndili pa banja

(b) Sindili pa banja

(c) Banja linatha

(d) Ndine wosiyidwa

(e) Zina……

4. Ndinu a chipembezo chanji?

(a) Mkhristu

(b) Msilamu

(c) Sindipemphera

(d) Zina……

4. Munapitapo ku sukulu?

(a) Eya

(b) Ayi

5. Sukulu munalekezera kalasi lanji?

(a) Sitandade 1-4

(b) Sitandade 5-8

(c) Sekondale

(d) Koleji

6. Ndinu a mtundu wanji?

(a) Chewa

(a) Tumbuka

(c) Ngoni

(d) Ngoni

(e) Yao

(d) Lomwe

7. Mumagwira ntchito yanji?

(a) Bizinesi

(b) Maganyu

(c) Ntchito ya mu ofesi

(d) Ulimi

9. Mwakhalapo ndi mimba zingati?

(a) Imodzi

(b) Ziwiri

(c) Zitatu

(d) Zinayi

(e) Zoposa zinayi

10. Mwaberekapo kangati?

(a) Sindinaberekepo

(b) Kamodzi

(c) Kawiri

(d) Katatu

(e) Kanayi

(d) Koposa kanayi

11. Munakhalapo ndi vuto pobereka m'mbuyomu?

(a) Eya

(b). ayi

GAWO B: MAFUNSO OKHUZANA NDI SIKELO YA AMAYI

13. Munayamba sikelo mimba yanu ili ndi miyezi ingati? (Onani mkabuku)

(a) Miyezi 0-3 (Milungu 0-12)

(b) Miyezi 4-6 (Milungu 13-24)

(c) Miyezi 7-9 (Milungu 25-36)

(d) Sindikudziwa

14 kodi mayi oyembekezera akuyenera kuyamba liti sikelo?

(a) Miyezi 0-3 (Milungu 0-12)

(b) Miyezi 4-6 (Milungu 13-24)

(c) Miyezi 7-9 (Milungu 25-36)

(d) Sindikudziwa

15. Kodi mayiyu wapiti ku sikelo maulendo angati?

(a) Kamodzi

(b) Kawiri

(c) Katatu

(d) Kanayi

(e) Koposa kanayi

16. Kodi mayi akuyenera kupita ku sikelo kangati pa nthawi yonse yomwe ali woyembekezera

(a) Pamene mimba siikubweretsa mavuto…….

(b) Pamene mimba ikubweretsa mavuto……

17. Kodi ndi zothandiza bwanji kuti mayi woyembekezera apite ku sikelo?

Phindu	Eya	Ayi	Sindikudziwa
Zimathandiza kudziwana bwino ndi a chipatala			
Kuti achipatala amuone bwinobwino mayi ndi kuona mavuto omwe alipo			
Kuti achipatala aphunzitse ndi kulangiza mayi oyembekezera			
Kuti mayi alandire chithandizo choteteza ngati katemera			

18. Chinakupangitsani ndi chain kuti muyambe sikelo pa nthawi imeneyi?.....
.....

19. Ndi mavuto otani amene mayi oyembekezera angakumane nawo ngati atayamba sikelo mochedwa

    (a) Kutha magazi

    (b) Kubereka mwana wosakwana masiku

    (c) Kunyentchera kwa mwana ali mchiberekero

(d) Kukomoka

(e) Kumwalira kwa mwana wamng’ono

(f) Ana obadwa onyentchera

(g) Palibe

MBALI C: ZIFUKWA ZOLIMBIKITSA/ZOLEPHERETSA AMAYI KUTSATIRS NDONDOMEKO YA SIKELO

20. Munachita kukonzekera kuti mukhale oyembekezera?

(a) Eya

(b) Ayi

21Pamene mumafuna kuyamba sikelo ndi zinthu ziti zomwe ziri m'musimu zomwe zinali vuto kapena ayi (pakati pa anthu, munthu payekha, zokhuza za chipatala, kapena kumene munthu amakhala).

		Vuto	Sivuto
Zifukwa za munthu payekha	Kuopa kuyezetsa magazi (HIV)		
	Kufunika komwe munthu amakuika pa nkhani yokhudza sikelo ya amayi		
	Kuopa kuti anthu adziwa msanga kuti ndinu oyembekezera		
	Kusavomereza kuti ndinu oyembekezera		
Zifukwa za pakati pa munthu ndi mzake			
	Kudikira kupeza chilolezo		
	Khalidwe la ogwira ntchito ku chipatala		
Zifukwa zokhudza chipatala			
	Kutalika/kefupika kwa mtunda wopita kuchiptala		
	Kutalika kwa nthawi yodikilira kulandira thandizo		
	Phindu lomwe ndimaliona lokhuzana ndi sikelo		
	Kuchepa kwa zipatala		
	Kukhala ndi amuna osalimbikitsa kuyamba sikelo		
Zifukwa zokhudzana ndi zikhulupiliro za komwe munthu amakahaa			
	Zikhulupiliro za makolo		
	Miyambo/mphekesera		
Lamulo la boma/zikhazikitso za boma			
	Kuchepa kwa ogwira ntchito za chipatala		
	Kusapezeka kwa ogwira ntchito ku		

	chipatala		
	Ntengo wopezera chithandizo		

21. Mumayenera kulipira kuti muyambe sikelo?
    (a) Eya
    (b) Ayi
22. Ngati eya, ndalama zingati?.....
23. Ndalama imeneyi inali yofikirika bwanji?
    (a) Yapafupi
    (b) Yosavuta kwenikweni
    (c) Yovuta kuipeza

ZIKOMO

Appendix 7 Letters of Request to Conduct the Study

Kamuzu College of Nursing

P.O Box 415

Blantyre

16th December, 2015

The Chairperson

Research & Publications Committee

Kamuzu College of Nursing

P/Bag 1

Lilongwe

Dear Sir/Madam,

REQUEST FOR APPROVAL TO CONDUCT A RESEARCH PROJECT

I am a student at Kamuzu College of Nursing pursuing a Master of Science Degree in Reproductive Health. As part of my studies, I would like to conduct a study on pregnant women's compliance to focused antenatal care in Dowa District. The purpose of this letter is to request the committee to review and approve the protocol for the study. Enclosed is my research protocol.

I look forward to your favourable consideration

Yours Faithfully,

Davison Bester Machika.

Kamuzu College of Nursing

P.O Box 415

Blantyre

5th March, 2016

The District Commissioner

Dowa District Council

P.O Box 25

Dowa.

Dear Madam,

REQUEST FOR PERMISSION TO CONDUCT A STUDY AT DOWA DISTRICT HOSPITAL AND MPONELA RURAL HOSPITAL.

I am a student at Kamuzu College of Nursing pursuing a Master of Science Degree in Reproductive Health. I would like to conduct a study on "Compliance with Focused Antenatal Care by pregnant women in Dowa District". The study is a quantitative study which will involve questioning the study participants who meet the study criteria. It will assist to identify gaps in the practice of antenatal care and it may help to influence change in reproductive health practices as well as policy. The purpose of this letter is to request for permission to conduct the study at Dowa District Hospital and Mponera Rural Hospital.

I look forward to your favourable consideration

Yours Faithfully,

Davison Bester Machika.

Kamuzu College of Nursing

P.O Box 415

Blantyre

17th December, 2015

The District Health Officer

Dowa District Health Office

P.O Box 25,

Dowa.

Dear Sir/Madam,

REQUEST FOR PERMISSION TO CONDUCT A PILOT STUDY AT CHANKHUNGU HEALTH CENTRE

I am a student at Kamuzu College of Nursing pursuing a Master of Science Degree in Reproductive Health. I would like to conduct a study on pregnant women's compliance to Focused Antenatal Care in Dowa District. This is a quantitative study which will involve questioning the study participants who meet the study criteria. It will assist in identifying gaps in the practice of antenatal care and it may help to influence change in reproductive health practices as well as policy. The purpose of this letter is to request for permission to conduct a pilot study at Chankhungu health centre.

I look forward to your favourable consideration

Yours Faithfully,

Davison Bester Machika.

Kamuzu College of Nursing

P.O Box 415

Blantyre

23rd February, 2016

The District Health Officer

Dowa District Health Office

P.O Box 25

Dowa.

Dear Sir/Madam,

REQUEST FOR PERMISSION TO CONDUCT A STUDY AT DOWA DISTRICT HOSPITAL AND MPONELA RURAL HOSPITAL.

I am a student at Kamuzu College of Nursing pursuing a Master of Science Degree in Reproductive Health. I would like to conduct a study on pregnant women's compliance with Focused Antenatal Care in Dowa District. The study is a quantitative study which will involve questioning the study participants who meet the study criteria. It will assist to identify gaps in the practice of antenatal care and it may help to influence change in reproductive health practices as well as policy. The purpose of this letter is to request for permission to conduct the study at Dowa District Hospital and Mponera Rural Hospital.

I look forward to your favourable consideration

Yours Faithfully,

Davison Bester Machika.

Telephone: + 265 282 200
Fax: + 265 282 200.

All Communications should be addressed to:

The District Health Officer

In reply please quote No.

Ref. No. DDH/

MINISTRY OF HEALTH

DOWA DISTRICT HOSPITAL
P. O. BOX 25,
DOWA

23rd May ,2016.

TO WHOM IT MAY CONCERN

PERMISSION TO CARRY OUT RESEARCH STUDY IN DOWA DISTRICT

This is to certify that **Davison Bester Machika** a student from Kamuzu College of Nursing pursuing Master of Science in Reproductive Health has been granted permission to conduct a research study titled 'compliance to Focused Antenatal Care among pregnant women in Dowa District'.

May you therefore provide him all the necessary support he may need as the results of the study would assist the district health office to develop interventions that may help to improve the uptake of Focused Antenatal Care among pregnant women in Dowa.

I am looking forward to your usual cooperation.

Yours' Sincerely,

DOWA DISTRICT HEALTH OFFICER
24 MAY 2016
P. O. BOX 25, DOWA
MALAWI

for DHO

Dr. Beatrice Chikaphonya
DISTRICT HEALTH OFFICER

All Communications should be addressed to:

The District Commissioner
Dowa District Council
Private Bag 2 Dowa
Telephone: (+265) 282 244/211
Facsimile: (+265) 01282004

The Chairperson,

College of Medicine Research and Ethics Committee (COMREC)

Blantyre

Cc: District Health Officer -Dowa

Dear Sir/Madam,

RE: PERMISSION TO ALLOW MR. DAVISON BESTER MACHIKA TO CONDUCT A STUDY IN DOWA DISTRICT

I write to allow **Mr. Davison Bester Machika**, a student from Kamuzu College of Nursing to conduct a study at Dowa District Hospital and Mponela Rural Hospital. The study is a prerequisite for him to attain a Master of Science degree in Reproductive Health.

I do not have any objection to his request to conduct the study in the two health facilities as long as COMREC approves his study proposal and he follows the laid down procedures as reviewed and suggested by the committee.

I request him to share with Dowa District Council, health office the findings from the study so that we learn and probably improve on our Maternal and Child health service delivery.

I wish Mr. Machika good luck as he embarks on his study

Yours Sincerely,

The District Commissioner
Dowa District Council
2016 -03- 11
Private Bag 2, Dowa

Fannie Msimuko

DISTRICT COMMISSIONER

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.03/16/1920 - Compliance to focused antenatal care among pregnant women in Dowa District by Dave Bester Machika

On 23rd May 2016

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

Dr. C. Dzamalala Chairperson (COMREC)

Approved by College of Medicine
23 MAY 2016
(COMREC) Research and Ethics Committee

23rd May, 2016
Date