



**THE USE OF MATERNITY WAITING HOME AT CHIRADZULU DISTRICT
HOSPITAL, SOUTHERN MALAWI**

BY

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(BSc Nursing and UCM)

A thesis submitted to the faculty of Nursing, University of Malawi, in partial fulfilment of the requirements for the award of the
Master of Science Degree in Community Health Nursing

**UNIVERSITY OF MALAWI
KAMUZU COLLEGE OF NURSING**

APRIL 2016

Declaration

I, Blessings Ridson Kadzuwa declare that the thesis titled “The use of Maternity Waiting Home at Chiradzulu District Hospital, Southern Malawi” is my own work and it has not been submitted for any other award to any University or institution in Malawi or elsewhere.

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Certificate of Approval

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Dedication

To my **wife Janet** and our children **Blessings (Junior)** and **Theodora**, I greatly cherish your love, support, and understanding throughout the time I pursued my studies.

To **my mother** and **sisters**, I am grateful for all your prayers and encouragement.

May the Almighty Father, God bless you all

Acknowledgements

I put my trust in **God Almighty** for seeing me through this journey. It was not an easy task, but with God's grace I have come to this end.

My heartfelt appreciation should go to all the people that have contributed for this work to be possible. I am grateful to all **study participants** for their participation in this study. In particular, I would like to thank the following:

Associate Professor Lily Caroline Kumbani. My only supervisor, for her unwavering support, encouragement and guidance throughout this research project

Dr. Alfred Maluwa. The Research Director at Kamuzu College of Nursing, for the much needed guidance and support throughout this project

Dr. Mathews Ngwale. The statistician and a lecturer at Kamuzu College of Nursing, for the wonderful and timely support and guidance

My wife and the entire family. For their support, encouragement, and prayers

Kamuzu College of Nursing administration and staff. For the support and guidance rendered throughout the entire programme

My fellow masters students (2013 intake) Lilongwe campus. For their input, encouragement and all the light moments we shared during the study period

Chiradzulu District Hospital management and staffs for their support

Bill and Melinda Gates. For sponsoring my studies

May the good Lord bless you all.

Abstract

Background: The concept of maternity waiting home (MWH) was introduced at Chiradzulu District Hospital in 2012, in an effort to improve maternal and neonatal health in Chiradzulu District through the promotion of skilled attendance at birth in the district. Since then, no study has been conducted to examine the use of MWH at the district hospital.

Objective: This comparative study was designed to examine the use of MWH at Chiradzulu District Hospital, Southern Malawi by identifying the characteristics of pregnant women who use MWH; identifying factors that influenced use of MWH; describing types of services offered at MWH, and comparing pregnancy outcomes of women who used MWH with those who did not use MWH.

Methods: A comparative cross sectional study was conducted at Chiradzulu District Hospital, postnatal ward. Using a proportionate stratified random sampling method, a total 266 postnatal mothers were enrolled. The study had two strata-one stratum comprised mothers who used MWH and the other stratum comprised mothers who did not use MWH, but came direct from home to deliver at the district hospital. Systematic random sampling method was used to select the 133 participants in each stratum. Data collection was done using a well structured questionnaire through face to face interviews and review of participant's records. Data was analysed quantitatively using SPSS version 16.0. Chi-square test at 5% level of significance was used to determine associations as well as to compare pregnancy outcomes between mothers who used MWH and those who did not use MWH.

Results: There was no significant difference in demographic attributes between mothers who used MWH and those who did not use MWH ($P \geq 0.050$). However, significant difference was identified on the following obstetric risk factors: malaria in pregnancy ($p=0.030$), severe anaemia in pregnancy ($p=0.014$), and breech presentation ($p=0.042$) between mothers who used MWH and those who did not use MWH. Furthermore, the study shows that there was no

significant association between the utilisation of MWH and the pregnancy outcomes ($p \geq 0.050$). The only significant difference was on babies with very low Apgar score of 0-3 at five minutes ($p=0.035$); only one baby born to mothers who used MWH had severe asphyxia (Apgar score of ≤ 3) compared to seven babies born to mothers who did not use MWH.

Conclusion: Although the results showed that MWH utilisation at Chiradzulu District Hospital, Southern Malawi did not significantly improve maternal and neonatal health outcomes; babies born to mothers who used MWH were more likely to survive the neonatal period.

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List of Abbreviations and Acronym

ANC	Antenatal Care
CHAM	Christian Health Association of Malawi
COMREC	College of Medicine Research and Ethics Committee
EmOC	Emergency obstetric care
M	Mean
MMR	Maternal Mortality Rate
MWH	Maternity Waiting Home
MWHs	Maternity waiting Homes
NMR	Neonatal Mortality Rate
PIMHSM	Presidential Initiative on Maternal Health and Safe Motherhood
SD	Standard Deviation
SPSS	Statistical Package for Social Sciences
TBAs	Traditional Birth Attendance
UNICEF	United Nation Children’s Fund
WHO	World Health Organization

CHAPTER 1

Introduction

Pregnancy and childbirth is a life-event experienced by more than one hundred million couples all over the world every year. Most often things go well but at times complications occur. When complication happens, the likelihood of a good outcome for the mother and her newborn depend on the place where the woman is giving birth. Out of all the data on health that the World Health Organization (WHO) monitors, maternal deaths show the greatest divide between the poor and the rich; the chance of a woman dying from complications related to childbirth is 100 times higher in resource-poor as compared to resource-rich settings (Lonkhuijzen, 2011). This is the case because women from resource-poor settings often lack an enabling environment for safe motherhood and childbirth. An enabling environment for safe motherhood and childbirth depends on: the care and attention provided to pregnant women and newborns by the communities and families, the skilled attendance at birth, the acumen of skilled birth attendants, and the availability of adequate obstetric health care facilities (United Nation Children's Fund (UNICEF), 2008).

Globally, an estimated 303,000 women die from causes related to pregnancy and childbirth each year (WHO, 2015). Millions more that survive childbirth suffer from pregnancy related injuries, infections, diseases and disabilities, often with lifelong consequences (Family Care International, 2007; UNICEF, 2008). Ninety nine percent of these deaths occur in developing countries with sub-Saharan Africa alone contributing to more than 50% of the global total (UNICEF, 2008). Most maternal deaths in low income countries occur as a result of direct causes. The five most important direct causes are obstetric haemorrhage, hypertensive disorders of pregnancy, puerperal sepsis, abortion and obstructed labour (Khan, Wojdyla, Say, Gülmezoglu, & Van Look, 2006; UNICEF, 2008). Maternal deaths mostly occur around labour, delivery, and the immediate postpartum period. A large

proportion of these deaths take place in hospital. These deaths in hospital include the women who arrive there too late to be saved, but could have survived with appropriate and timely interventions (Ronsmans & Graham, 2006).

Neonatal deaths tend to follow the same geographical pattern as for maternal deaths. Like maternal deaths, 98% of neonatal deaths occur in developing countries, and sub-Saharan Africa has the highest national rates. According to WHO data, about 2.7 million babies are born dead each year and another three million babies do not survive beyond the first week of life (early neonatal period) with the greatest risk for death occurring during the first day of life (Lawn, Osrin, Adler, & Cousens, 2008; UNICEF, 2012; WHO, 2006). One-third of neonatal deaths in developing countries are related to intrapartum complications leading to birth asphyxia. Preterm births, malformation, and infection related to pregnancy and birth contribute to the rest of early neonatal deaths. According to WHO (2006), early neonatal deaths account for 38% of all infant mortality and 29% of under-five mortality in developing countries, and 77% of infant deaths in Malawi are early neonatal deaths (National Statistical Office (NSO) & ICF Macro, 2011). Late neonatal deaths are caused by infections acquired after birth, and mostly are associated with poor hygiene, lack of information on adequate newborn care and / or poor neonatal feeding practices. However, a few cases of late neonatal deaths are due to perinatal conditions.

Often the death of the mother is closely connected with the death of the newborn, as maternal mortality and morbidity have a direct negative impact on survival chances of the newborn (WHO, 2006). Evidence shows that babies whose mothers died during childbirth had a much greater chance of dying in their first year than those whose mothers were alive (UNICEF, 2012); thus, preventing the death of the mother will help to preserve the life of the baby as these deaths are closely related. Averting these deaths (maternal and neonatal deaths) often requires implementing the same interventions (UNICEF, 2012, 2013; WHO, 2006).

A very large proportion of maternal and neonatal deaths are avoidable. Most of these deaths can be avoided if appropriate treatment is started in time. Delay in receiving appropriate care in the event of a pregnancy and childbirth complication is a major determinate in maternal and neonatal death in developing countries (Shah et al., 2009). According to Thaddeus and Maine (1994), delay can occur at three different levels: (1) delay in seeking care, (2) delay in reaching the appropriate facility, and (3) delay in receiving adequate care in the facility. These delays have different underlying problems, so understanding these delays can help in designing programmes/interventions depending on local circumstances hence reducing the occurrence of maternal and neonatal deaths (Lonkhuijzen, 2011). Maternity waiting home is one of the interventions employed in developing countries, where most deaths occur due to delays in receiving appropriate care in an event of childbirth complications (Bhutta, Darmstadt, Haws, Yakoob, & Lawn, 2009).

Background information

Maternity waiting home (MWH) is a residential facility located near or within a hospital or health centre that provides emergency obstetric care (EmOC). The aim is to improve access to skilled and facility based delivery for pregnant women from remote geographic areas; thus, reducing morbidity and mortality of mothers and neonates should complications arise during labour and delivery. Pregnant women stay in the MWH at the end of their pregnancy and await labour. Once labour starts, the women are advised to go to the labour ward, so that labour and delivery can be assisted by a skilled birth attendant. It is mostly women with complications in pregnancy or those that live far away or face other geographical barriers, such as rivers during rainy seasons, that are encouraged to stay in MWHs at the end of their pregnancy (Satti, Mc Laughlin, & Seung, 2013; WHO, 1996).

Various forms of MWHs have been documented in different countries and each appears to be slightly different in terms of both its creation and services that are provided. For

example, MWH in Mongolia, Cuba was established as a result of government initiatives whereas the MWH in Colombia, Indonesia was established by academic and community groups. Some women stayed at the MWH because of risk factors or complications while others stayed by choice, even when there was no medical reason to do so. The positive aspect about the diversity is that countries are at liberty to implement this concept according to their local needs and available resources. What is paramount is that the maternity waiting facility should be near a health facility that provides emergency obstetric care to mothers and their babies. Pregnant women may be advised to visit the health facility for routine antenatal care, but more often nurses, midwives or doctors visit the pregnant women at the waiting homes (WHO, 1996).

Unlike its historical purpose of reducing maternal and neonatal mortality by accommodating women with high risk of delivery complications during the final weeks of pregnancy; nowadays, the purpose has been extended to improving maternal and neonatal health through provision of education and counselling regarding pregnancy and childbirth, delivery and newborn care. Furthermore, the admission criteria into the waiting homes has been extended to include pregnant women classified as having pregnancies with low risk of delivery complications living in remote and rural areas, where skilled attendance at birth is a challenge (Geubbels, 2006; Nabudere, Asiimwe, & Amandua, 2013).

The services that are offered to pregnant women at the MWH vary. A review of literature on the services provided range from antenatal care to postnatal care; referrals in case of complications; health education on postnatal care of the woman and the neonate; counselling for maternal and newborn care including nutrition and early initiation of breastfeeding; family planning and social services including awareness of existing MWHs, and income generation activities (M. J. Ruiz et al., 2013); gender awareness and support for domestic and gender based violence (UNICEF, 2013; WHO, 1996) and recreational activities

such as television, playing netball and needle craft rather than merely a shelter in close proximity to a hospital (WHO, 1996).

The WHO in 1991 highlighted the potential advantage of implementing MWH as part of a comprehensive package of essential obstetric services (Wild, Barclay, Kelly, & Martins, 2012). Since then, MWHs have become increasingly popular strategy in developing countries, where access to skilled birth attendance and obstetric care is still a challenge. Nowadays, MWHs have been incorporated into ministry of health policy in many developing countries such as Afghanistan, Cambodia, Eritrea, Gambia, Lao People's Republic, Lesotho, Maldives, Malawi, Mongolia, Mozambique, Nepal, Sri Lanka to mention a few, often backed by United Nations (UN) agencies, World Bank and other local donors (Satti et al., 2013; Republic of Malawi, 2012; Wild et al., 2012).

The concept of MWH is not new in Malawi. MWHs have existed as early as the 1960s. According to Maynard-Tucker (1995), women identified as high risk, particularly those exhibiting signs of malnutrition or those who had a history of complications from a previous pregnancy (cited in WHO, 1996) as well as women identified as low risk but coming from very far, were kept at antenatal shelters or guardian shelters at the end of their pregnancies (two to three weeks to their expected date of delivery) to await labour (S. Bisika¹, Personal Communication, 29 April, 2014). However, most of the pregnant women kept at guardian shelters developed complications during delivery because they were not assessed, and it was also reported that those women were fond of taking traditional herbs in order to induce labour and expedient delivery (S. Bisika; Maynard-Tucker 1995 as cited in WHO, 1996). Since April 2012, the Malawi Government through Presidential Initiative on Maternal Health and Safe Motherhood Programme (PIMHSM) embarked on the programme

¹ Sharon Bisika was the Deputy Director for the presidential initiative on maternal health and safe motherhood programme in Malawi

of constructing homes for pregnant women closer to a health facility that provide basic emergency obstetric care. The aim was to provide safe and secure places for pregnant women from remote rural areas to await onset of labour. In these homes, pregnant women receive counselling on family planning, HIV, PMTCT, nutrition and care of a neonate (Republic of Malawi, 2012).

Malawi has one of the highest maternal and neonatal mortality rates in the world, estimated at 675 deaths per 100,000 live births and 31 deaths per 1000 live births, respectively (NSO & ICF Macro, 2011). A study by Hofman and Sibande (2006) showed that the majority (56%) of maternal deaths occurred at the hospital, 30% occurred at home, 7% occurred at the traditional birth attendants' home (TBAs), and another 7% occurred en route to the hospital.

An in-depth confidential inquiry into institutional maternal deaths in the southern region of Malawi showed that approximately two thirds of maternal deaths were due to direct obstetric causes and one third of the maternal deaths were due to indirect causes. Further, the study revealed that delay was the main contributing factor to maternal deaths: 34% of deaths were associated with patient delay in reporting to the health unit, 13% of the deaths were associated with delay in referring patients in time when they had developed problems, 14% of the deaths were associated with delay in reaching the referral hospital due to lack of communication and transport, and 19% of the deaths were associated with delay in receiving prompt treatment at the health facility (McCoy, Ashwood-Smith, Ratsma, Kemp, & Rowson, 2004; Ratsma, Lungu, & Hofman, 2006).

These results are similar to the findings of a community based maternal death audit conducted in Mangochi District, where the majority (86%) of maternal deaths were due to direct obstetric causes (Hofman & Sibande, 2006). Hofman and Sibande further stated that 77% of maternal deaths were due to delay or refusal to seek professional assistance when

complications occurred, possibly because of cultural beliefs, socioeconomic factors, and fear of going to the district hospital or no perceived benefits to go there: of which 41% of the deaths were associated with delay or failure to reach an emergency obstetric care facility in time due to long distance, difficult roads or lack of transport and communication.

MWH is a structural intervention put in place to overcome delays in reaching a health facility (phase II delays). Phase II delays can occur due to the following factors: difficult geographical terrain, cost, transportation and communication, suboptimal distribution and location of health facilities, and travel time (Hussein, Kanguru, Astin, & Munjanja, 2012). Thus, MWH improves access to skilled birth attendants and timely care. Skilled birth attendants play an important role in reducing maternal and neonatal mortality as they provide timely obstetric and newborn care for life threatening complication (Onta et al., 2014). Studies show that MWHs are effective in improving access to facilities and skilled care at birth; thus, escalating the number of institutional deliveries (Andemichael, Haile, Kosia & Mafunda, 2009; Lori, Wadsworth, Munro, & Rominski, 2013a; UNICEF, 2013). However, MWHs do not appear to improve access of women living in remote areas because some studies showed that use of MWHs decreased greatly as distance between a woman's residence and a health facility increases (I. Z. Ruiz, 2010; Wild et al., 2012). A 2009 Cochrane Database of Systematic Reviews conducted by van Lonkhuijzen, Stekelenburg, and van Roosmalen, (2012) concluded that there was insufficient evidence on the effectiveness of MWHs for improving maternal and neonatal outcomes.

Problem statement

Malawi has one of the highest maternal and neonatal mortality and morbidity rates in the world. The maternal mortality ratio is estimated at 675/100, 000 live births and neonatal mortality rate is at 31/1000 live births (NSO & ICF Macro, 2011). Although there is growing evidence towards a lower trend in the maternal death rate, the country failed to meet its

ambitious Millennium Development Goal (MDG 5) target of less than 155/100,000 live births and 100% of deliveries attended by a skilled birth attendant by 2015 (Republic of Malawi, 2012). While Malawi managed to meet its target for reduction in child deaths, neonatal deaths lag behind (The Health Foundation, 2013). But, what is most disheartening is that almost all these deaths can be prevented (Ministry of Health (MoH) [Malawi] & ICF International, 2014).

Institutional or facility delivery is important to reducing maternal and neonatal deaths. Global evidence suggests that availability of emergency obstetric and neonatal care and skilled attendance at childbirth are critical to reducing maternal and neonatal deaths (Carlough & McCall, 2005; Onta et al., 2014; Pearson, Larsson, Fauveau, & Standley, 2007; UNICEF, 2015). Institutional delivery care saves lives because when complications arise during labour and delivery in a health facility, a skilled birth attendant can manage the complication or refer the mother or the neonate to the next level of care in time (MoH Malawi & ICF International, 2014).

In an effort to improve maternal and neonatal health, the Malawi Government through the Presidential Initiative on Maternal Health and Safe Motherhood (PIMHSM) in 2012, adopted MWHs as a strategy to improve access to skilled care during childbirth. Thus accelerating the reduction of maternal and neonatal mortality to achieve MDGs number four and five (Republic of Malawi, 2012). Since the adoption of MWHs, no study has been conducted in Malawi to critically assess the use of MWHs. This study therefore examined the use of MWH at Chiradzulu District Hospital.

Significance of the study

The study is significant because the findings have provided information on the use of MWHs in Malawi specifically at Chiradzulu District Hospital and the findings may possibly influence policy.

The findings will help service providers, policy makers and other relevant stakeholders on how they can plan and improve the services offered at MWHs for the achievement of its intended purpose of improving maternal and neonatal health.

The study will add on the existing knowledge on MWHs in Malawi which is scarce at the moment. There is a possibility that the findings may act as a basis for further study in other health facilities.

Objectives of the study

Broad objective

The aim of this study was to examine the use of maternity waiting home (MWH) at Chiradzulu District Hospital, Southern Malawi.

Specific objectives

- To identify characteristics of pregnant women who use MWH
- To identify factors that influence use of MWH
- To describe types of service offered at MWH
- To compare pregnancy outcomes of women who used MWH with those who did not use MWH

Operational definitions

Grand multipara refers to a woman who has already delivered five or more babies that have achieved a gestational age of 28 weeks or more, and such women are traditionally considered to be at a higher risk for developing complications.

Grand multigravida refers to a woman who has been pregnant five times or more

Gravida is a pregnant woman: also refers to the number of times that a woman has been pregnant

Great grand multipara refers to a woman who has delivered seven or more babies beyond 28 weeks gestation

Great grand multigravida refers to a woman who been pregnant seven times or more

High risk pregnancy refers to a pregnancy that has an increased likelihood of harm to mother or baby

Parity refers to the number of times that a woman has given birth to a foetus with gestational age of 28 weeks or more, regardless of whether the child was born alive or was a stillbirth.

CHAPTER 2

Literature review

This chapter presents a review of literature on MWH that was relevant to this study. The literature is grouped into four sections. Section one focuses on historical perspectives/ background of MWHs. Section two looks at accessibility and utilisation of MWHs. Section three focuses on the acceptability of MWHs. Finally, section four examines the effectiveness of MWHs. A literature search was performed using, Google Scholar, JSTOR, PubMed, EbscoHost, and Hinari to determine the current knowledge on MWHs. The search terms were: Maternity waiting homes OR shelter OR huts, effectiveness of MWHs, antenatal shelters OR huts, and waiting homes for pregnant women. The abstract of each article was reviewed and determination was made on whether the research was appropriate for this study. Additional articles were identified from the reference list of pertinent articles and were also reviewed.

Historical background to MWH

Globally, MWHs are believed to have started as early as the 20th century in western countries such as Northern Europe, Canada and United States of America where pregnant women with social and obstetric problems were accommodated. These homes were owned by voluntary organizations, and helped to reduce abortions and infanticides (WHO, 1996).

Cuba built its first MWH in 1962 and by 1990s, there were 150 MWHs. These homes helped to increase the institutional delivery rate from 63% to 99%, and reduced maternal mortality rate from 118 to 31 per 100, 000 live birth during the period between 1962 to 1986. Unlike Northern Europe, the first MWH in Cuba was launched as a result of the government initiative, and it was well supported by the community organisation groups such as women's federation, agricultural unions and political organisations (WHO, 1996).

Similarly, MWHs known as *maternity rest homes* in Mongolia were launched as a result of the government initiative in 1979 following a joint resolution by the Mongolian women's federation, ministry of health, ministry of agriculture, and the former supreme council of union of cooperatives. Pregnant women were accommodated two weeks prior to the date of delivery for rest, nutrition supplementation, medical check-ups, and treatment. In addition, newspapers, journals, books, and sometimes clothing for newborns were given. A 1986 study showed reduced perinatal mortality, and maternal morbidity and mortality rates associated with use of MWHs (Hugue & Olonchimeg, as cited by WHO, 1996).

Nicaragua officially commenced its first MWH known as *Casa Materna* in 1987, after local women activists and Nicaraguan women organisations resolved to address the high incidence of maternal and infant mortality rates in rural areas. The Swedish government provided funding while the Nicaraguan government provided the buildings. This enabled women with high risk pregnancies who had no place to stay in the city to be accommodated near the hospital. *Casa Materna* had two separate centres - the centre of high risk pregnancies and centre of continuing education. Women from rural areas were accommodated at the centre of high risk one week before expected date of delivery. After giving birth, women returned to the centre of continuing education with their babies to rest and learn more about newborn care. There was no cost for staying at MWHs and workers at these facilities were volunteers (WHO, 1996; Wessel, 1990).

Early experiments of MWHs in Africa were in Eastern Nigeria in 1950s. These MWHs known as *Maternity Villages* were built next to a district hospital by community members, and women with high risk pregnancies were accommodated for the last two to three weeks of their pregnancies. Such homes, helped to reduce maternal deaths and stillbirth from 10 to one and 116 to 20 per 1000 live births respectively. In 1960s, Uganda also

recorded a reduction in maternal deaths by half in remote areas where similar homes were introduced (WHO, 1996).

Central Ethiopia opened its first MWH known as *tukul* in 1976 at Attat Hospital-a 55 bed capacity community based mission hospital. Local communities constructed these MWHs close to the delivery units to provide temporary accommodation, where women with high risk pregnancies were observed prior to giving birth. Nurse midwife from Attat Hospital together with traditional birth attendants (TBAs) and village health workers identified by the community were conducting outreach clinics to identify women with high risk pregnancies. The average length of stay at MWHs was 15 days, and during their stay women attended antenatal clinic at the hospital. In addition, a nurse from the hospital visited MWH once a day. Food was not provided but pregnant women were allowed to bring a family member. A 1987 study showed that all the 13 maternal deaths registered at the hospital did not stay at MWH and the rate of stillbirths was 10 times higher among women who did not stay at MWH (Poovan, Kifle, & Kwast, 1990).

MWHs in Zimbabwe were part of the integrated hospital services provided to the community as early as 1925 by the Evangelical Lutheran Church. Simple huts known as *machacha* were erected for out-patients and women with high risk pregnancies coming from remote villages. A nurse was employed at MWH as a health educator, and health education was given three days per week on various topics such as family planning, breastfeeding, childcare, foetal development, infant development, and immunizations. Women were attending antenatal clinic once a week. These pregnant women were bringing their beddings, pots, and food from home because they were cooking for themselves in a special kitchen (Dahling, 1991, as cited by WHO, 1996).

MWHs in Malawi are believed to have been in existence as early as the 1960s. Pregnant women showing signs of malnutrition or those who had complications during the

previous delivery were referred to hospital three to four weeks prior to the expected date of delivery. In addition women with low risk pregnancies coming from very far-away places were also accommodated at MWHs. A 2003 Safe Motherhood Programme Report indicated that no government owned hospital in the southern region had MWH-they were only available in four out of nine CHAM hospitals. In hospitals without MWHs, women with high risk pregnancy and others from far-away places were using either antenatal ward or guardian shelters of the hospital to wait for delivery (van Lonkhuijzen et al., 2012). The duration of stay at MWHs varied. Women who knew their expected date of delivery, lived near the hospital, and those referred from another medical unit had relatively short stays. On the other hand, women who did not know their expected date of delivery, who came from very far-away places of about 250 km and more, and who were self-referrals stayed long at MWH. Like in other countries, pregnant women were required to bring a guardian, beddings, and adequate food.

Accessibility and utilisation of MWHs

Accessibility and utilisation of MWH refers to the relationship between the location of the MWHs and the client's ability to reach and use them. A qualitative study done in Guatemala to identify barriers before, during, and after women's stay in the MWH showed that most indigenous women from remote areas had the least access to MWHs. Lack of knowledge about existence of waiting homes, provision of culturally inappropriate care because of the use of biomedical model in providing midwifery care, and unsustainable funding were barriers identified (M. J. Ruiz et al., 2013). These problems came about because of lack of community involvement during planning and implementation of MWHs.

A cross section study conducted by the Family health Division of the Department of Health Sciences in Nepal discovered views of expectant mothers, community service providers and managers on the concept of MWH and its applicability following the none

utilisation of the 27 MWHs that were available. The government of Nepal constructed those MWHs in the district hospitals but no single MWH was being utilised by pregnant women. This feasibility study was conducted to operationalise those MWHs. Results of the study showed that both the community as well as the health providers were aware of direct contextual and delivery complications, and had knowledge of women who were prone to delivery complications. However, all of them reported ignorance about the availability of MWHs in the district hospitals. Participants recommended the need for improved information dissemination and promotional activities to increase utilisation of MWHs. The promotional activities suggested were that staying at MWHs should be cost-free, the waiting homes should be equipped with basic things like beddings, services offered should be of good quality, and decision makers in the family should be motivated to accompany women to MWHs (Shrestha, Rajendra, & Shrestha, 2007).

Mramba, Nassir, Ondieki, and Kimanga (2010) investigated the reason for low utilisation of MWH in Kenya. The MWH was designed to accommodate 20 pregnant women at a time. However, two years following its implementation it was discovered that only 119 pregnant women (81 in 2005 and 38 in 2006) used the MWH. The study participants recruited were health workers, pregnant women, and women who had used the MWH. Results showed that only (28%) of pregnant women knew that the MWH existed and the majority (95%) of pregnant women reported that they would require husband's permission to use MWH. The majority (83%) of the health workers knew that MWH existed and 65% of them reported having referred a pregnant woman to MWH at least once a month. For women who had used the MWH, the majority lived at a distance of more than 20 km and most of them were referred by a health worker. This study attributed low utilisation of the MWH to lack of awareness of its existence and its purpose. Health workers felt they had a vital role in

improving awareness and needed to educate pregnant women on maternal health and safe birth plans.

García-Prado and Cortez (2012) examined factors associated with the use of MWHs and institutional birth in Nicaragua. Results showed that operations of MWHs were generally satisfactory; women were patronising MWHs, and some (33%) traditional birth attendants (TBAs) were referring women to MWHs. However, participants recommended for improved information dissemination on MWHs to men, women, and TBAs. This was because men were often deciding on the course of women's health care and TBAs played an important role in referring women to MWHs. Researchers recommended financial support from government to complement contributions from community, and strengthening the local management and involvement of the regional government. Economic and cultural barriers to the use of MWHs by women from rural areas were acknowledged though there was no direct cost for using MWHs, but indirect expenses such as food, transportation, and care of children made waiting homes more expensive than home delivery; and patriarchal customs of the community posed a cultural barrier to the use of MWHs as most men were not aware of the importance of institutional birth.

A study to assess the structural and socio-cultural factors influencing use of MWH through the lens of women, families and communities were conducted in Liberia by Lori et al., (2013a). Findings revealed that availability of MWHs reduced the geographical barrier of distance for women to access skilled birth attendants during childbirth. This was because MWHs provided opportunities for women to be close to the health facility prior to onset of labour, thereby averting the reluctance to walk several miles to the hospital after labour pains had begun. However, participants identified cost of transportation, lost time, and food insecurity while staying at MWH as potential barriers.

Sialubanje et al. (2015) conducted a qualitative study to explore women's experiences and beliefs concerning utilisation of MWHs in rural Zambia. They recruited women of reproductive age (15 to 45 years) from nine health facility catchment areas; 22 in depth interviews were conducted at a health facility with MWH and 10 in-depth interviews were conducted at a health facility without MWH. Results showed that most of the women appreciated the important role MWH played in improving access to skilled birth attendance and improving maternal health outcomes. However, women's lack of autonomous decision making, prevalent gender inequality, low socioeconomic status, and socio-cultural norms prevented them from using MWHs. Furthermore, concerns about a relative to take care of children at home and concerns about poor state of the MWHs as well as lack of basic needs such as inadequate sleeping space, beddings, water and sanitary services, food and cooking facilities as well as failure by health workers to visit them prevented them from using MWHs.

Another study by Sialubanje et al., (2016) aimed at exploring men's experiences and beliefs concerning use of MWHs in Kalomo District, Zambia, revealed that men perceived many potential benefits of using MWH. They believed that their roles included decision making and securing funds for transportation, food, cleaning materials. However, financial challenges made it difficult for them to support their wives and babies as a result they delayed in making a decision to send their wives to MWHs.

An enquiry on the experience of antenatal mothers staying at MWH at Malamulo Mission Hospital in Malawi revealed that there were benefits as well as challenges faced at MWH. Benefits for using MWH were proximity to delivery units, skilled birth attendants and availability of specialised care. Women also mentioned that MWH provided them with adequate resting time, a phenomenon that was rare at home. They reported that they made new friendships and they had peace of mind because they were not worried about the mode of transportation to hospital when labour starts. However, lack of privacy, poor sanitation,

overcrowding, and poor attitude of midwives were challenges encountered at the MWH (Sundu, 2011).

Acceptability of MWHs

Acceptability of MWHs reflects the extent to which the clients (pregnant women) are comfortable with characteristics of the MWH. It also suggests the comfort pregnant women feel with the care they receive while at the MWH (Lori et al., 2013b). A study was conducted in remote communities of southern district of Lao PDR prior to the establishment of MWHs to ascertain whether MWHs could be affordable, accessible and most importantly accepted as a strategy for improving maternal outcomes. Findings showed that minority ethnic groups had problems using existing maternal health services and it was very likely that MWHs could have suffered the same problem of low utilisation. The following suggestions were made in order to make MWH acceptable: privacy in birthing process, use of traditional birthing methods, allowing other traditional practices that were not harmful, respect from health care staff, no cost for staying at MWH, and indirect cost of transport and lost time labour while at MWH to be compensated (Eckermann & Deodato, 2008).

A similar study was conducted in Milot, Haiti by Hossain, Porter, Redden and Pearlmutter (2014) evaluated acceptance of MWH as a strategy to decrease maternal mortality. Participants were asked about health care use during pregnancy and labour as well as their willingness to use the hospital based-MWH. Results revealed that many women (90%) expressed willingness to stay at MWH for a future high risk pregnancy and 86.4% believed that their stay would be supported by their husbands while 82% believed that their stay would be supported by their mothers. The result of the study was in agreement with the results of other studies by García-Prado and Cortez (2012); Mramba et al., (2010); and Sialubanje et al., (2015) that husbands and mothers had a vital role in acceptance and utilisation of MWH.

A post intervention study to establish the level of awareness and attitude towards use of MWH was conducted in Ghana. The results showed that most of the participants were aware of the existence of MWH. However, there were variations on the attitude about the usefulness of MWH; a majority of the pregnant women expressed that MWH was not appropriate for their needs because many of them preferred home delivery while men liked the idea of MWH and mothers of women who had experienced an obstetric complication reported that they could have asked their daughters to use MWH if they had known of it (Wilson et al., 1997).

A Partners in Health report on the role of MWHs as part of a comprehensive maternal mortality reduction strategy in Lesotho revealed that MWHs were well received by both the health facility staff and pregnant women. This was evident by an increased demand for waiting homes in some health facilities that often exceeded the capacity, and increased number of facility based deliveries after implementation of the programme; the monthly average for deliveries increased by 3.8% in the year prior to implementation to 18% by the end of the second year. In addition, staff were impressed with waiting homes and called it “a safe haven for innocent mothers who never understood the danger of being pregnant in Africa until the day comes” (Satti et al., 2013, p.19)

Zomorodian, Massawe, Makundi, Mitchell, and Eschenbach (2014) assessed attitudes towards in-hospital delivery and MWHs among women in rural Tanzania. The results showed that nearly all women interviewed expressed willingness and desire for future use of MWH services. This favourable climate for MWHs use among the rural Tanzanian women population was encouraging but needed to be nurtured by, among other things, removing the cost for using MWH.

A systematic review by van Lonkhuijzen et al., (2012) showed that not all hospitals in the southern part of Malawi had MWHs. In those hospitals without a MWH, pregnant women

were kept in antenatal or postnatal ward, or in guardian shelters. However, 55% women who had used a MWH were satisfied with their stay. Easy access to skilled attendance during delivery, treatment received during antenatal care and development of new friendships while at MWH were appreciated. Concerns were raised about lack of supervision by midwives as well as poor staff attitudes during antenatal care and delivery.

A quality assessment study of MWH services in Blantyre Rural showed that the quality of MWH was not satisfactory in all the three measure of Donabedian's conceptual framework- structure, process and outcome- there were no guidelines, protocols or standards guiding the operation of MWHs, and the physical condition of MWHs were unsatisfactory. In addition, the majority of participants reported that they were not satisfied with structures and services offered (Mkundika-Mndolo, 2015). However, 60% of the participants in the same study indicated their readiness to use MWH in future. This result showed that most users of MWHs are not pleased with the services provided but patronise them because they have no any other choice. Consequently, the expectation is that improving the quality of MWH services could make most women eager to use them.

Effectiveness of MWHs

MWHs effectiveness refers to the extent to which MWHs are producing desired results. A review of literature showed that MWHs were effective in increasing facility birth, reduction of maternal mortality, perinatal and neonatal morbidity and mortality. According to the Cochrane database of systematic review on effects of MWH on maternal and perinatal health revealed that there was no controlled randomised trial or cluster randomised trial identified from the search that evaluated outcomes of pregnant women using a maternity waiting facility in low resource countries (van Lonkhuijzen et al., 2012). This result meant that evidence reported on the successes of MWHs were insufficient to base recommendation of MWH in practice because randomised controlled trials or cluster randomised controlled

trials are the gold standard in providing the most reliable evidence upon which to recommend MWHs in practice. Despite insufficient evidence to determine effectiveness of MWHs on improvement of maternal and newborn health in resource constrained countries, several studies had reported success in institutionalisation of MWHs as a way to reduce maternal and neonatal deaths through increasing access to skilled birth attendants.

An audit conducted in India evaluated the effects of satellite MWHs on perinatal mortality. The perinatal mortality rates of rural tertiary hospitals that had satellite MWHs were compared with the perinatal mortality of tertiary hospitals that had no satellite MWHs. Findings showed that the perinatal mortality rate of tertiary hospitals that had MWHs were 21/1000 live births against the national average of 70/1000 live births. Moreover, 69% of perinatal deaths registered in tertiary hospitals with MWH attached were among women referred from facilities without MWHs, while only 17% were among women referred from satellite MWHs (Guruvare & Rai, 2007). These results showed that satellite MWHs helped to reduce the perinatal death rate.

A preliminary analysis to evaluate the effects of an integrated MWH initiative in China showed that MWH- based initiatives contributed to the improved access to and uptake of maternal and newborn health services. The annual reported data indicated an increased hospital delivery rate of 57.9% in hospitals with MWHs compared to an increase of 32.2% in hospitals without MWHs (UNICEF, 2013).

A study to examine the effectiveness of MWH intervention in reducing maternal and neonatal morbidity and mortality was conducted in rural Liberia. The results showed that the proportion of team birth (deliveries that were conducted through the coordination of traditional birth attendants and skilled birth attendants) significantly increased in communities with MWHs from 10.8% to 95.2% ($p=0.001$) while in communities without MWHs the team birth increased from 20.5% to 69.8% ($p=0.065$). The results also showed a

significant difference of maternal deaths between communities with MWHs (n=3) and Communities without MWHs (n=12), $p=0.040$ (Lori, Williams, Munro, Diallo & Boyd, 2014). The results of this study contributed towards the addition of the evidence of the effectiveness of MWHs.

A related study conducted in Eritrea compared pregnancy outcomes verified through maternal and perinatal deaths in some hard to reach regions' health facilities before and after introducing MWHs. The study was conducted 20 months after introducing MWH. The results showed increased number of deliveries averaging 425 annually compared to 266 deliveries prior to introducing MWHs. No maternal death was registered whereas five maternal deaths were reported during the previous year. Seven stillbirths and seven neonatal deaths were registered during the 20 months period (Andemichael et al., 2009).

A large cohort study was conducted in rural Ethiopia over a period of 22 years to assess the role of maternity waiting areas in reducing maternal deaths and stillbirths among women with high risk pregnancies. Maternal mortality and stillbirth rates among women admitted via MWH were compared with that of women admitted directly to the same hospital without passing through MWH. The results revealed a total 24,148 deliveries over a period of 22 years-6805 among women admitted via MWH and 17,343 deliveries among women admitted directly. The maternal mortality ratio for women admitted at MWH was 89.9/100 000 live births while that of women admitted directly was 1333.1/ 100 000; and stillbirth rates for women admitted at MWH were 17.6/1000 live birth and 191.2/1000 live births for women not admitted at MWH (Kelly et al., 2010). This result showed that there was a substantial decrease in maternal mortality and stillbirths among women admitted to the maternity waiting area. The differences in maternal and stillbirths rates were attributed to timely and appropriate obstetric care given.

A similar study was conducted in rural Zambia by van Lonkhuijzen, Stegeman, Nyirongo, and van Roosmalen (2003) to evaluate the results of the use of MWH. The study compared antenatal and maternal risk status as well as pregnancy outcomes between women admitted at MWH and women not admitted at MWH. Results showed that 40% and 85% of women not admitted at MWH had no maternal risk factors and antenatal risk factors respectively; whereas 17% and 78% of women admitted at MWH had no maternal and antenatal risk factors respectively. Although, the differences in risk status were significant ($p < 0.05$), no difference was observed in pregnancy outcomes (birth weight, maternal and perinatal mortality). The similarities in pregnancy outcomes among the two groups of women who had significant differences in risk status signified the effectiveness of MWHs.

A study conducted in six districts of Cabo Delgado Province (Mozambique) evaluated the effectiveness of MWHs in increasing coverage of institutional deliveries. The study compared institutional delivery coverage of health facilities that had MWH with health facilities without MWHs using geographical information systems (GIS). Results revealed that health facilities with MWHs had higher institutional delivery coverage than health facilities without MWHs. However, the impact of MWHs in increasing coverage of institutional deliveries decreased as the distance from the health facility increased. The researcher concluded that there was no significant difference of institutional delivery coverage between health facilities that had MWHs and health facilities without MWHs for long distances of more than 14km from the health facility (I. Z. Ruiz, 2010). These results showed that MWHs did not improve access to skilled birth attendance for women living in remote areas. A related study conducted by Wild et al., (2012) in Timor-Leste revealed that MWHs increased facility based births only to women who lived within 5km of a health centre, and there was no significant increase in the number of facility based births among women from more remote areas following implementation of MWHs.

There were no studies published in Malawi on the effects of MWH so far. However, a case study conducted by Knowles (1988) at Ekwendeni Mission Hospital reported favourably on the effects of MWHs on maternal mortality. The study showed that there was no maternal death registered at the hospital and its catchment area since the introduction of MWH because women were persuaded to stay at the MWH (antenatal waiting shelter) regardless of their risk status. On the other hand, Maynard-Tucker (1995) reported that there were increased numbers of delivery complication among women admitted at MWH because many women were using local pitocin (herbs) to either induce or expedite delivery (as cited by WHO, 1996).

Summary

This chapter reviewed studies that were relevant to the topic of study. From the literature review, it is evident that although the concept of MWH was first conceptualised in developed countries, this concept has been adopted in resource constrained countries as a strategy of improving maternal and neonatal outcomes through the improvement of access to obstetric care facilities and skilled birth attendance. Several studies have reported successes of MWH in improving institutional deliveries and reduction of maternal and perinatal mortality, although the nature of the evidence is weak due to the absence of randomised control trials. The review also showed that no study has been conducted in Malawi on the use of MWHs hence the need to conduct this study in Malawi.

CHAPTER 3

Methodology

Study design

This is a comparative cross sectional study design conducted in postnatal ward examining the use of MWH at Chiradzulu District Hospital, Southern Malawi. The study enrolled postnatal mothers who delivered at Chiradzulu District Hospital. These mothers were put into two groups based on the use of MWH. The first group comprised mothers who waited for hospital delivery at the MWH and another group comprised mothers who did not wait at the MWH, but came direct from home to deliver at the district hospital.

Study place

The study was conducted at a government owned Chiradzulu District Hospital. Chiradzulu District is one of the 13 districts in the southern part of Malawi and occupies a total land area of 767 km². It shares boundaries with Mulanje to the east, Thyolo to the south, Blantyre to the west, and Zomba to the north. According to the National Statistical Office (NSO) (2010), Chiradzulu District has a projected population of 314, 692 people, with 24% (74,182) of women in childbearing age and total fertility rate projected at 5.15%. The district has one of the highest neonatal mortality rates in Malawi at 47 per 1000 live births compared to national and southern region neonatal mortality rates at 37 and 34 per 1000 live births respectively; and the proportion of skilled birth attendants was at 49.9%, below the national average of 54% (NSO & UNICEF, 2008). The district had a maternal mortality ratio of 137/100,000 live births (NSO & UNICEF, 2008). A study conducted by Chirwa, Malata, and Maluwa (2014) showed that a total of 18 women died at Chiradzulu District Hospital alone during the study period of April 2012 to March 2013. Although these figures are below the national estimates for Malawi, they are still high considering that no woman should die whilst giving birth.

Chiradzulu District has two main hospitals, a government owned Chiradzulu District Hospital and St Joseph Mission Hospital. There are 13 health centres that refer patients including pregnant women to the district hospital (Figure 3.1).

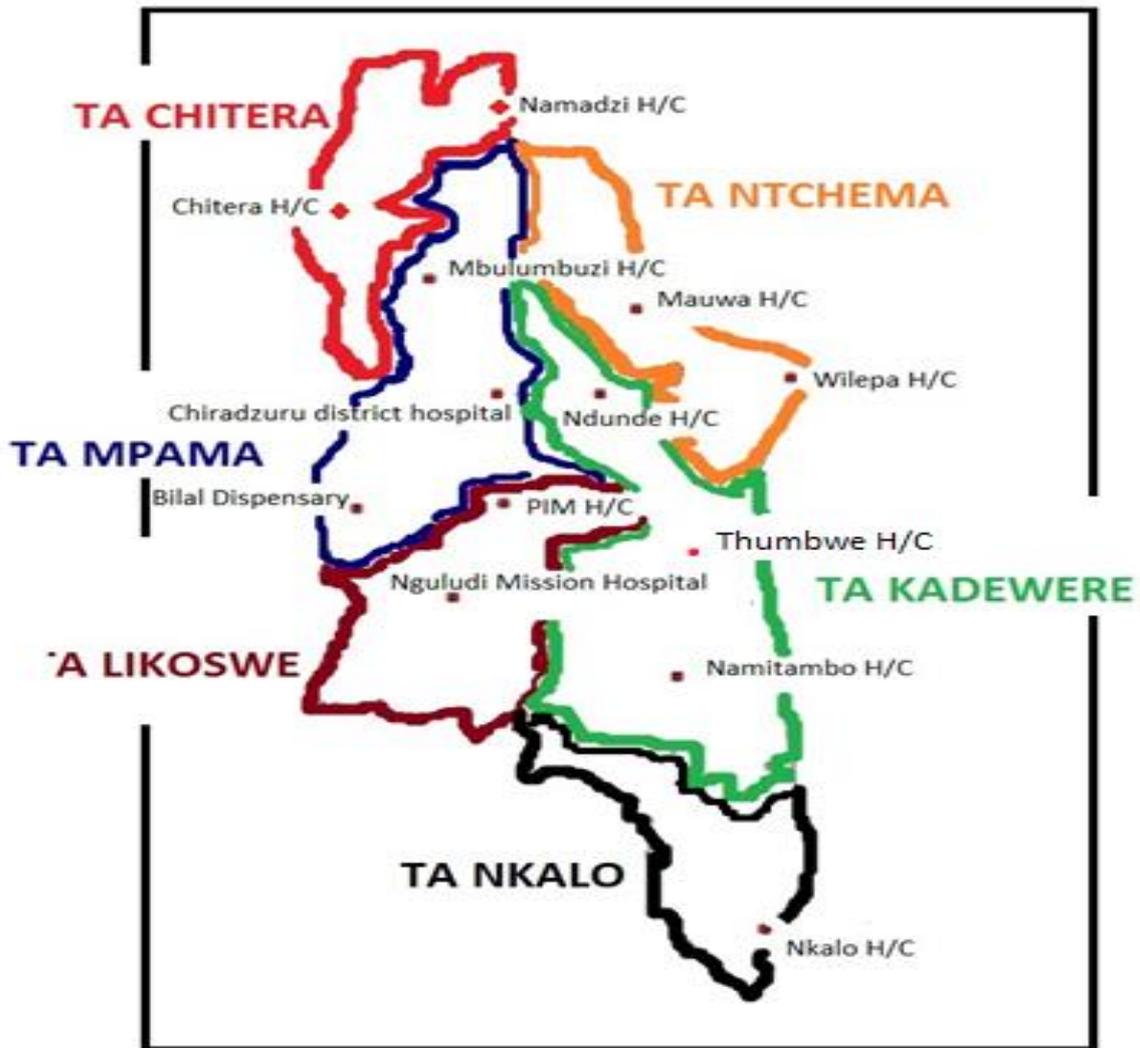


Figure 3.1: Map showing distribution of health facilities in Chiradzulu District.

In 2012, the management of Chiradzulu District Hospital changed what used to be a nutritional rehabilitation ward into a MWH to promote skilled attendance at birth, in an effort to improve maternal and neonatal health. Ever since, pregnant women are being admitted in MWH regardless of their pregnancy risk status. According to Chiradzulu District Hospital

Health Information Management Systems (HMIS) (2013; 2014), 800 pregnant women were admitted at MWH during the period of January 2014 to February 2015; and on average MWH accommodates 57 pregnant women per month. These documents further showed that a total of 4275 deliveries were conducted at Chiradzulu District Hospital during the same period of January 2014 to February 2015; and on average 305 deliveries are conducted every month. Therefore, this data shows that 19% of women delivering at Chiradzulu District Hospital were accommodated at the MWH.

Study population

The study population included postnatal mothers who gave birth at Chiradzulu District Hospital during the data collection period.

Study period

Data collection was done in the months of June to October 2015.

Sample size

Taking the annual number of deliveries at Chiradzulu District Hospital of 4275 and considering that 800 women use MWH, thus 19% of all the women delivering at the facility use MWH. The margin of error was set at 5% with a 95% confidence interval, giving a calculated sample size of 225. This sample size gave an 80% power to detect significant differences between women who used MWH and women who did not use MWH under the null hypothesis that there was no significant difference in pregnancy outcomes (maternal and neonatal) between women who used MWH and women who did not use MWH. As a result, each group had at least 113 participants.

Inclusion criteria

The study enrolled women who delivered at the district hospital at term gestation and consented to participate in the study.

Exclusion criteria

This study excluded women who delivered on transit to the district hospital (BBAs) as well as women who delivered at another facility. Other women that were excluded in this study were those who had preterm deliveries, as well as those who refused to participate.

Sampling technique

The study used proportionate stratified random sampling method to select the 266 study participants. This method helps to guard against obtaining, by chance, unrepresentative (biased) sample which under or over represent certain groups of the population, hence increasing the precision of the sample (Bowling, 2009). According to Burns and Grove (2009), another advantage of using stratified random sampling method is that the use of a smaller sample size can achieve the same degree of representativeness as a large sample size acquired through simple random sampling. Additionally, data collection time is reduced; sampling error decreases; power increases; and the cost of study is lower with the use of this sampling method (Burns & Grove).

The variables chosen for stratification in this study were MWH use and non-MWH use. One stratum was of women who used MWH to wait for delivery and another stratum was of women who reported directly to labour ward from home to deliver at the district hospital. Each stratum had at 133 participants. We used systematic random sampling scheme to select participants in each stratum, whereby every third person who met the inclusion criteria was picked.

Data collection

Data collection was done using structured questionnaire-the methods used to collect data were face to face interviews and review of participant's records. Face to face interviews helped to reduce error and increase response rate. Participants were asked questions

pertaining to pregnancy and childbirth as well as the care received, and the information was verified through review of their records.

A structured questionnaire was developed specifically for this study (Appendix 1 and 2). The questions were formulated based on the study objectives. There was an English and Chichewa version of the questionnaire. Data from participants were collected using the Chichewa questionnaire as majority of the participants were fluent in Chichewa. The information collected was then transferred to a pre-designed database on the Statistical Package for Social Science (SPSS) version 16.0 which was in English for cleaning and analysis.

The questionnaire was pre-tested on 10 randomly selected mothers at the same hospital prior to main data collection. The pre-test accorded the investigator an opportunity to identify questions that were poorly understood, ambiguous, or evoked hostile or other undesirable responses. The pre-test also allowed the investigator to assess and evaluate the logic sequence of the format and wording of the questions as well as the procedure for data processing and analysis, and other problems. Participants were asked to provide feedback and questions were revised in light of their comments with assistance from the experts in the field.

Validity of data collecting instrument

Some of the questions especially on demographic data and reproductive history were adopted from the Malawi Demographic and Health Survey 2010 Women's Questionnaire. The questions in the data collecting instrument were developed and compiled using standard guidelines for questionnaire design, and specific objectives of the study. The questionnaire was reviewed by colleagues, their feedback was taken on board and necessary corrections were made. The questionnaire was pre-tested on the sample of participants from the study population prior to main data collection, modification was made to enable questions to elicit

proper responses and measure what the study intend to investigate (Bruce, Pope, & Stanistreet, 2008; Dos Santos Silva, 1999)

Reliability of measurements

Reliability of the questionnaire was maintained as the investigator was the only data collector. This helped to prevent having different information due to differences in interviewing approaches and skills. Furthermore, reliability was achieved by triangulation of data collection method where a combination of face to face interview and review of participant's records was employed. Each day of data collection, data was reviewed for completeness and accuracy in order to correct mistakes. After data entry into a pre-designed template in the SPSS database, it was cross-checked manually prior to analysis.

Data management and analysis

Each day after data collection, the investigator reviewed the collected data for completeness and accuracy in order to correct mistakes. The cleaned data was coded before entering it into a pre-designed template in the SPSS database version 16.0. The completed questionnaires were kept in a drawer under lock and key for confidentiality and safety purposes. The entered data was cross-checked manually with hard copies to ensure accuracy and consistency in response and eliminate possible data entry errors (Polit & Beck, 2008).

After all the data had been collected and entered into SPSS software, data was analysed using SPSS version 16.0. Descriptive statistics were computed on demographic variables such as age, marital status, number of past deliveries, number of pregnancies, and were tabulated in the form of frequencies indicating means, standard deviation and a range of scores of these variables (Creswell, 2009). Association between demographic variables and use of MWH was determined using Chi-square test at 5% level of significance. Chi-square test was also computed to investigate the association between pregnancy outcomes (maternal and neonatal) and use of MWH at the 5% level of significance. Comparison of pregnancy

outcomes between women who used MWH and women who did not use MWH was made using the Chi-square test at the 5% level of significance as well as student's t-test at the 5% level of significance.

Ethical consideration

This research study was approved by College of Medicine Research and Ethics Committee (COMREC) on 25th May 2015 (appendix 3). Further, a written permission was sought from the Chiradzulu District Hospital Research Committee through the District Health Officer to conduct the study at the facility. Participants were provided with an information sheet containing information about the study (Appendix 4 and 6). The participants were given the chance to freely decide whether to participate or not in the study without any form of coercion and with full knowledge of the investigations. Verbal consent was sought from participants interested to participate in the study, which was followed by signing of the consent form by those who agreed to participate (Appendix 5 and 7). Participants were informed and assured of their right to withdraw participation without fear of repercussion.

The right to freedom from exploitation was maintained as information that was collected was used only for the purposes it had been collected for. Moreover, participants were informed that there was no foreseeable physical harm associated with participating in this study. The right to privacy was maintained through assigning numbers to the questionnaires instead of the use of names. The right to confidentiality was observed through locking the questionnaires in a drawer, questionnaires was accessed by the researchers only, and that questionnaires were destroyed after presentation of results. Names of participants were not used during presentation and discussion of research findings. In the course of the study, participants were allowed to ask questions on any pertinent issues (Polit & Beck, 2012).

CHAPTER 4

Results

This chapter presents results on the use of MWH at Chiradzulu District Hospital, Southern Malawi. A structured questionnaire was administered through face to face interviews and data was analyzed quantitatively. Results are presented according to questions answering specific study objectives and are depicted in text, tables and figures. A total 266 participants were enrolled-133 were admitted at MWH prior to delivery at the district hospital and another 133 were not admitted at MWH, but came directly from home to deliver at the district hospital.

Demographic characteristics of participants

The results of this study show that the demographic attributes of the participants of the two groups (women who used MWH and women who did not use MWH) were essentially similar. These demographic attributes were: age, marital status, source of income, educational level, tribe, and source of income of the spouse.

Age of participants

The mean age of participants who used MWH was 24.02, SD 6.34, youngest participant was aged 14 and oldest participant was aged 42. On the other hand, mean age of participants who did not use MWH was 23.63, SD 6.14, youngest participant was aged 15 and oldest participant was aged 43. Of these participants, 31.9% (n=85) were adolescents (aged ≤ 19), of which 30.1% (n=40) used MWH and 33.8% (n=45) did not use MWH (Figure 4.1). Only 8.3% (n=11) of participants from each group were aged 35 and above (Figure 4.1).

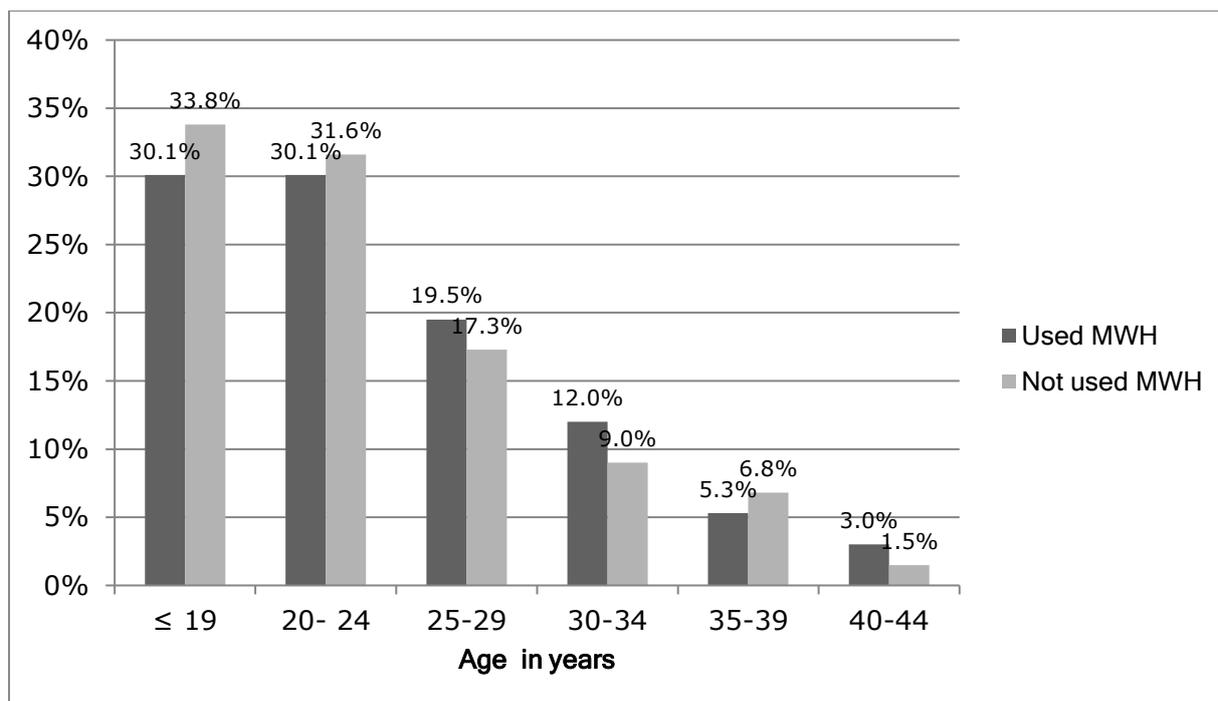


Figure 4.1: Age of participants

Table 4.1 shows other demographic characteristics of participants in the study. It will be observed from Table 4.1 that a little more than 75% (n=100) of participants who used MWH and 64.4% (n=85) of participants who did not use MWH had primary school education. Only one participant who used MWH arm and two participants who did not use MWH had tertiary education. Most participants in this study were married (94.7% of those who used MWH and 94% of those who did not use MWH). A good percentage of participants 42.5% (n=54) in the group that used MWH and 39.5% (n=51) in the group that did not use MWH had no source of income—they depended on spouses and parents for assistance. A considerable percentage of participants 41.9% (n=52) in the group that used MWH and 44.4% (n=56) in the group that did not use MWH mentioned that their partners were employed. Sixty five percent (n=83) of participants in the group that used MWH and 47.7% (n=62) of participants in the group that did not use MWH were Lomwe.

Table 4.1

Other demographic characteristics of participants

Variable		Used MWH (n = 133)		Not used MWH (n = 133)	
		No.	%	No.	%
Highest education	Primary	100	75.2	85	64.4
	Secondary	26	19.5	40	30.3
	None	6	4.5	5	3.8
	Tertiary	1	0.8	2	1.5
Marital status	Married	125	94.7	125	94
	In relationship	3	2.3	5	3.8
	Single	2	1.5	0	0.0
	Divorced	2	1.5	3	2.3
Source of income	None	54	42.5	51	39.5
	Business	42	33.1	44	34.1
	Farming	24	18.9	27	20.9
	Employed	4	3.1	4	3.1
	Casual labour	3	2.4	3	2.3
Partner's source of income	Employed	52	41.9	56	44.4
	Business	35	28.2	24	19.0
	Farming	22	17.7	28	22.2
	Casual labour	11	8.9	14	11.1
	Schooling	4	3.2	4	3.2
Tribe	Lomwe	83	64.8	62	47.7
	Yao	22	17.2	35	26.9
	Not sure	11	8.6	10	7.7
	Others	7	5.5	11	8.5
	Nyanja	2	1.5	3	2.3
	Chewa	2	1.5	6	4.6
	Mang'anja	1	0.8	3	2.3
Religion	Christian	120	91.6	121	93.1
	Moslem	11	8.4	9	6.9

Gravidity

Minimum gravidity for participants in both groups was one and maximum gravidity for participants in the group that used MWH was nine while the maximum gravidity for participants in the group that did not use MWH was eight. The mean gravida for participants

who used MWH was 2.57 (SD =1.87) while that of participants who did not use MWH was 2.37 (SD 1.69). The 39% (n=51) of participants who used MWH and 44.4% (n=59) of participants who did not use MWH were primigravida; 35.6% (n=47) of participants who used MWH and 35.3% (n=47) of participants who did not use MWH were multigravida; and 23.5% (n = 31) of participants who used MWH and 18.8% (n=25) of participants who did not use MWH were grand multigravida and 2.3% (n=3) of participants who used MWH and 1.5% (n=2) of participants who did not use MWH were great grand multigravida.

Parity

Minimum parity for participants in both groups was one and maximum parity for participants who used MWH was nine and eight for participants who did not use MWH. The mean parity for participants who used MWH was 2.41(SD 1.75) while that of participants who did not use MWH was 2.20 (SD 1.55). Forty three percent (n=56) of participants who used MWH and 48.1% (n=64) of participants who did not use MWH were primipara, 33.6% (n=44) of participants who used MWH and 34.6% (n=46) of participants who did not use MWH were multipara (had two to four deliveries), 22.9% (n=30) of participants who used MWH and 16.5% (n=22) of participants who did not use MWH were grand multipara, and 0.8% (n=1) of participants who used MWH and 0.8% (n=1) of participants who did not use MWH were great grand multipara.

Lost pregnancies

Participants were asked whether they had a pregnancy that did not result in a live birth. Only 14.3% (n=19) of participants who used MWH and 12.1% (n=16) of participants who did not use MWH reported having had a pregnancy that did not result in a live birth.

Asked on the number of pregnancies that did not result in live births; 57.9% (n=11) of participants who used MWH and 81.3% (n=13) of participants who did not use MWH reported having lost one pregnancy, 42.1% (n = 8) of participants who used MWH and 12.5% (n=2) of participants who did not use MWH reported having lost two pregnancies, and no participant in the group that used MWH reported having lost three pregnancies while only one participant in the group that did not use MWH reported having lost three pregnancies.

Outcome of previous pregnancy

Figure 4.2 shows the percentage of outcome of previous pregnancies of participants. Thirty nine percent (n=51) of participants who used MWH and 43.5% (n=57) of participants who did not use MWH were primigravidae hence they did not respond to this question. Fifty-one percent (n=66) of participants who used MWH and 44.3% (n=58) of participants who did not use MWH had a live birth during the previous pregnancy. Three participants who used MWH and two participants who did not use MWH were missed cases on analysis.

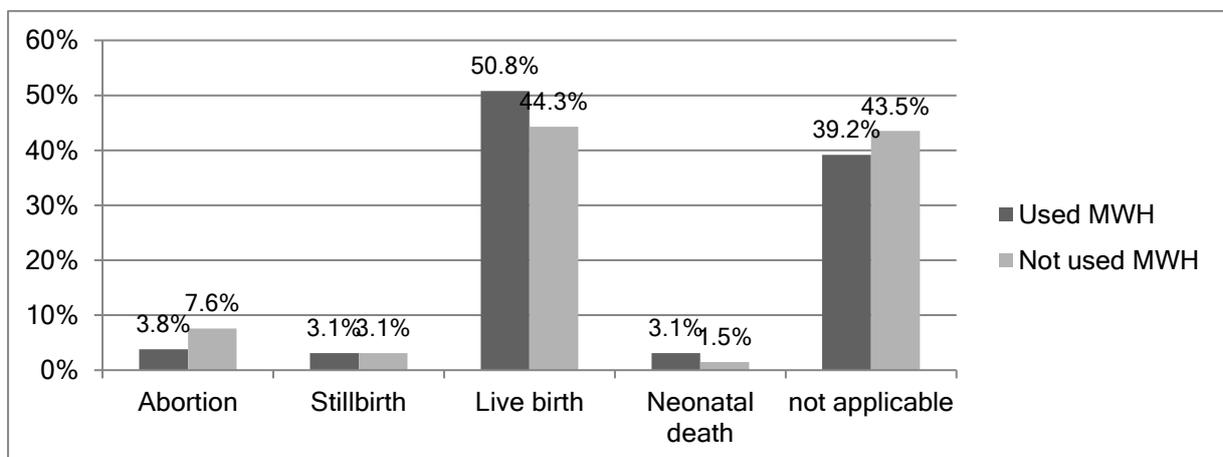


Figure 4.2: Outcome of previous pregnancies for participants

Previous place of delivery

Figure 4.3 shows the previous place of delivery for participants. It will be observed from this figure that 52.3%. (n=68) of participants who used MWH and 47.3%. (n=62) of participants who did not use MWH delivered at a health facility during their previous

pregnancy. Of these, 37.7% (n=49) of participants who used MWH and 30.5% (n=40) of participants who did not use MWH delivered at the district/CHAM facility, and 14.6% (n=19) of participants who used MWH and 16.8% (n=22) of participants who did not use MWH delivered at a health centre. Only, a small percentage of participants, 3.8% in the group that used MWH and 3.1% in the group that did not use MWH delivered with TBAs.

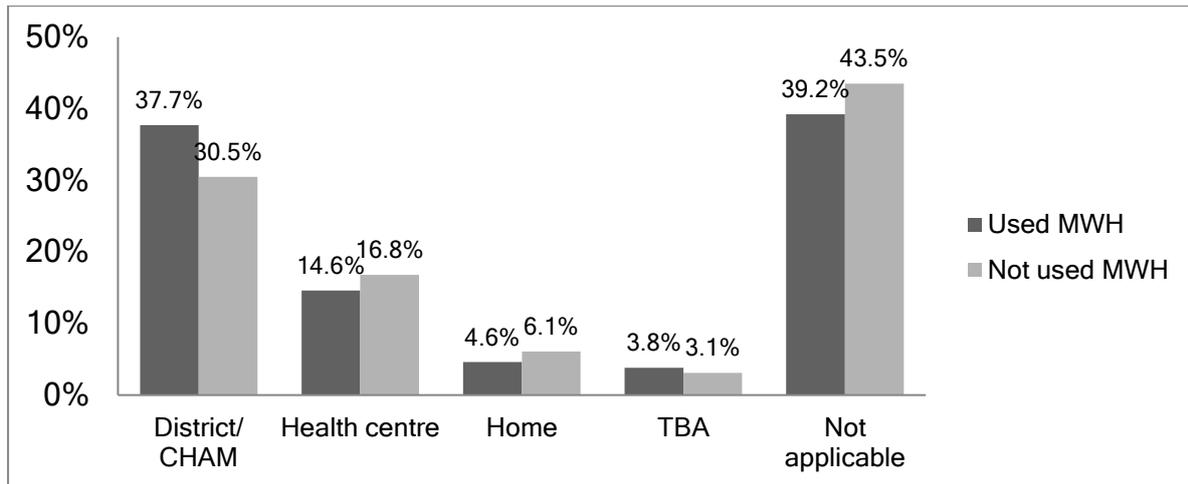


Figure 4.3: Previous place of delivery for participants

Obstetric risk factors

Table 4.2 shows the obstetric risk factors participants in this study had. It will be observed from Table 4.2 that 37.5% (n=48) of participants who used MWH and 24.2% (n=31) of participants who did not use MWH had malaria in pregnancy. Nearly 31% (n=40) of participants who used MWH and 24.1% (n=32) of participants who did not use MWH had a big fundus. Six participants (4.6%) who used MWH and no participant who did not use MWH had severe anaemia.

Table 4.2

Obstetric risk factors of the participants

	Used MWH (n = 133)	Not used MWH (n = 133)

Variable	No.	%	No.	%
Malaria in pregnancy	48	37.5	31	24.2
Big fundus	40	30.5	32	24.1
Previous history of caesarean section	23	17.3	11	8.3
Oedema present	20	15.3	19	14.3
Previous history of obstructed labour	19	14.4	10	7.6
Pregnancy induced hypertension	17	13.1	8	6
Breech presentation	13	9.9	4	3
Pre-eclampsia	10	7.7	4	3
Anaemia present	6	4.6	0	0
APH	4	3.1	2	1.5
Previous history of pre-eclampsia	4	3	0	0
PPH	3	2.3	2	1.5
History of multiple gestation	2	1.5	1	0.8

Malaria in pregnancy

Thirty eight percent (n=48) of participants who used MWH and 24.2% (n=31) of participants who did not use MWH disclosed that they had malaria in pregnancy. Of these participants who reported having suffered malaria in pregnancy; 45.8% (n=22) of participants who used MWH and 48.4% (n=15) of participants who did not use MWH had malaria in second trimester, 42% (n=20) of participants who used MWH and 32.3% (n=10) of participants who did not use MWH had malaria in third trimester, and only 12.5% (n=6) participants who used MWH and 19.4% (n=6) of participants who did not use MWH had malaria in first trimester.

Antenatal visits

All participants reported having attended at least one antenatal visit, and the maximum number of antenatal visits attended by participants in both groups was six. The mean antenatal visit for participants who used MWH was 3.34 (SD=0.91) and 3.49

(SD=0.99) for participants who did not use MWH. Figure 4.4 shows number of antenatal visits participants had. It can be seen from Figure 4.4 that 50.8% (n=66) of participants who used MWH and 45.1% (n=60) of participants who did not use MWH had two to three antenatal visits. Only 40% (n=52) of participants who used MWH and 38.3% (n=51) of participants who did not use MWH had the recommended four visits.

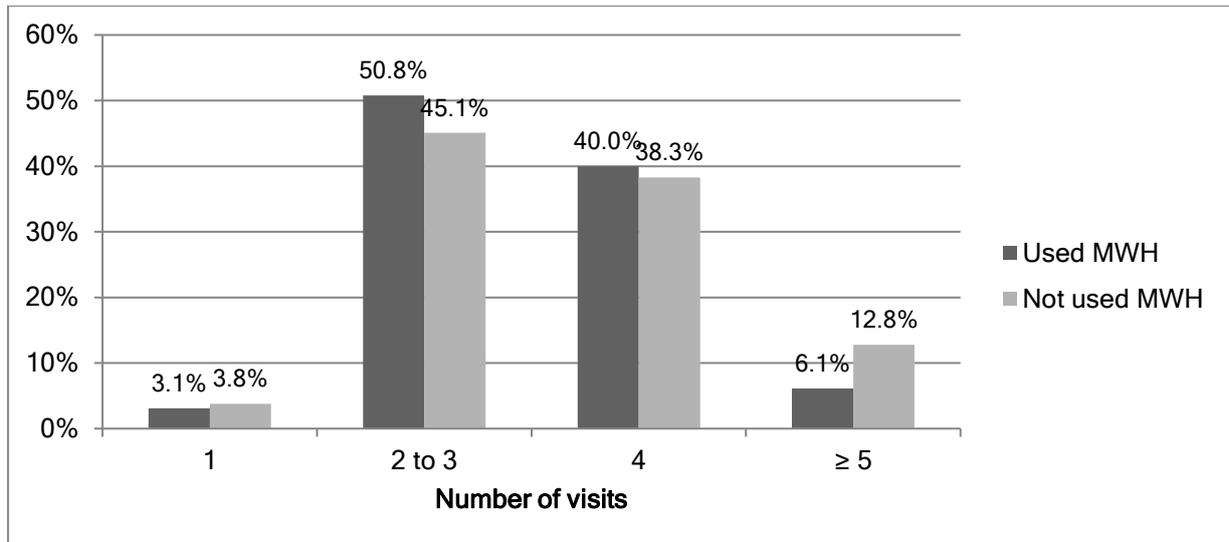


Figure 4.4: Number of antenatal visits for participants

Knowledge of availability of MWH

The majority 88.5% (n=115) of participants who used MWH and 80.5% (n=106) of participants who did not use MWH reported that they were informed during ANC visit about the existence of MWH at the district hospital. The remaining 11.5% (n=15) of participants who used MWH claimed that they were not informed during ANC about the existence of this facility and they used MWH because they were sent there by labour ward staff when they came to the hospital in early labour.

Reason for not using MWH

Table 4.3 shows summary of reasons given by participants who did not use MWH. From the table, 33% (n=44) of participants reported that their home was near the district hospital, 17.7% (n=3) claimed that although they were informed during ANC on existence of

MWH, they were not specifically told to come and wait at the hospital. One participant claimed that she was admitted at MWH at the health centre and was referred to the district hospital because of prolonged first stage of labour.

Table 4.3

Reasons given by participants for not using MWH

Variable	No.	%
My home is not far	44	33.8
I was not told to come and wait	23	17.7
lack of knowledge on existence of MWH	21	16.2
I had no problem that warranted admission to MWH	16	12.3
The date I was advised to come and wait was far	12	9.2
I had no one at home to accompany me at MWH	7	5.4
Poor services offered at MWH	2	1.5
I had good transport	2	1.5
I did not want to stay at the hospital	2	1.5
I waited at health centre	1	0.8

Source of referral to MWH

The source of referral to MWH for participants who used MWH is shown in Figure 4.5. Over half, 57.1% (n=76) of the participants were referred from health centre either due to problems with previous delivery or risk factors in the current pregnancy. Twenty percent (n=30) of participants were referred from labour ward because they were not in established labour.

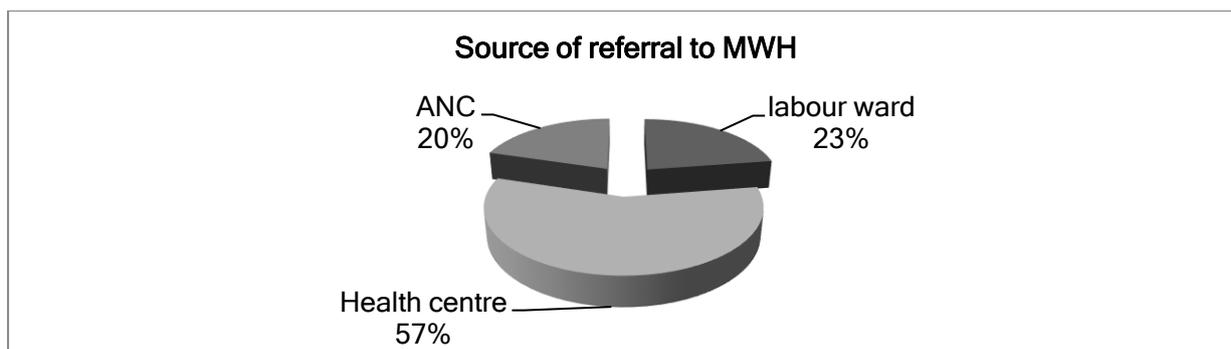


Figure 4.5: Percentage of participants' source of referral to MWH

Services offered at MWH

Table 4.4 shows the types of services that were provided to participants at MWH. As can be seen in Table 4.4, only 5.6% (n=7) of participants reported having been counselled on newborn care. Similarly, only 7.1% (n=9) of participants reported that they were given health education of nutrition, and another 14.3% (n=18) of participants reported been given health education on exclusive breast feeding.

Table 4.4

Services offered at MWH (n=126)

Variable	Yes		No	
	no.	%	no.	%
Counselling on newborn care	7	5.6	119	94.4
Health education on nutrition	9	7.1	117	92.9
Recreation activities (drama)	12	9.5	114	90.5
Health education of exclusive breast feeding	18	14.3	108	85.7
Physical examination	100	77.5	29	22.5
Playing netball and running	100	79.4	29	22.6
Advise on exercises	102	81.0	24	19.4

Benefits of using MWH

Only 38.1% (n=48) of participants reported that they benefitted from staying at MWH. Of these, 52% (n=25) reported that they had benefitted from staying with friends, 19% (n=9) had learnt about importance of hygiene, 17% (n=8) had learnt about importance of exercises in pregnancy, 10% (n=5) had learnt about importance of proximity to hospital, and 2% (n=1) had acquired leadership skills because she was the chairperson for the ward.

Number of antenatal examination at MWH

Minimum number of antenatal examination at MWH was zero and the maximum number of antenatal examination conducted was 16. The mean of antenatal examination was 2.36 (SD=2.61). Figure 4.6 shows the frequency of antenatal examinations performed to participants when they were at the MWH. It will be observed from Figure 4.6 that most participants 24.8% (n=32) were examined once, and 21.7% (n=28) of participants were not examined at all when they were at MWH.

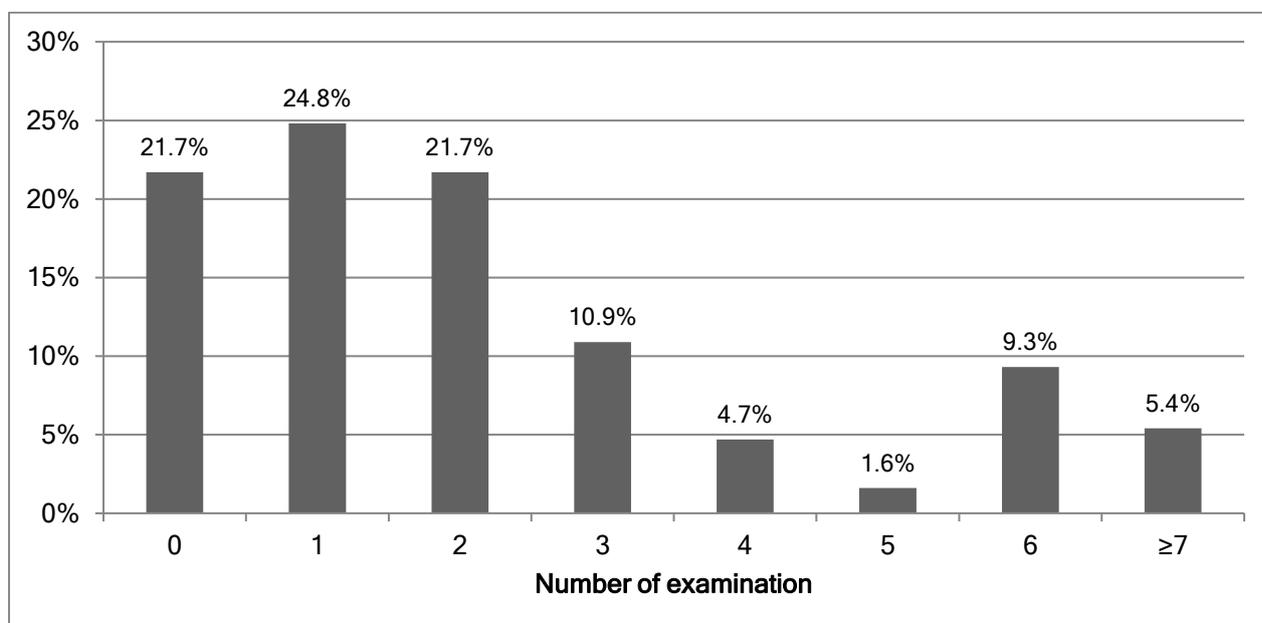


Figure 4.6: Frequency of antenatal examinations at MWH (n=130)

Duration of stay at MWH

Minimum length of stay at MWH was one day and maximum length of stay at MWH was 70 days for one participant who was referred to the waiting home too early. The mean length of stay at MWH was 18.63 (SD=14.47). Figure 4.7 shows number of days participants spent at MWH, the majority 75.9% (n = 101) of participants spent at most one month (≥ 30 days) at MWH while 30.1% (n = 40) of participants spent one week (≥ 7 days) at the MWH.

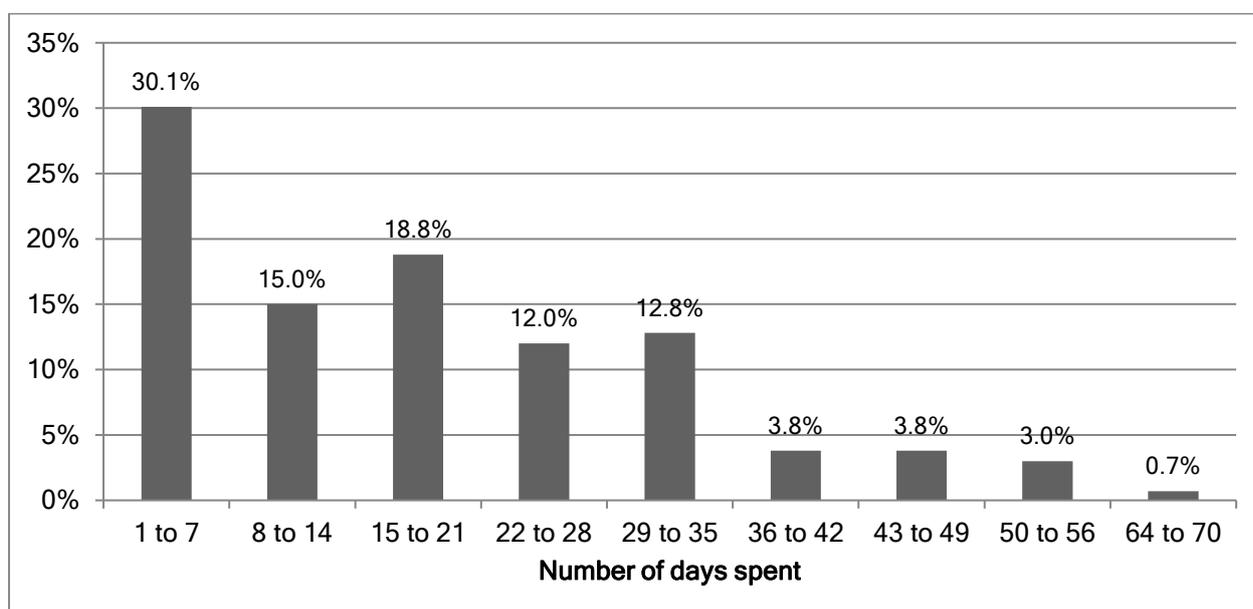


Figure 4.7: Number of days spent at MWH

Participants satisfaction with the utilisation of MWH

The majority 89.6% (n=112) of participants reported that they were satisfied with their stay at MWH. The reasons given were: timely attendance to complaints by health workers, 50.4% (n=63) of participants; proximity to place of delivery by 24.8% (n=31) of participants; friendly staff; 10.4% (n=13) of participants; resting time; 3.2% (n=4) of participants; and one participant gave no reason. On the other hand, the reasons the remaining 10.4% (n=13) of participants gave for their dissatisfaction with their stay at MWH were: lack of antenatal assessment by health workers; 7.2% (n=9) of participants; unhygienic environment because sometimes they were sleeping on the floor that was not mopped; two

participants (1.6%); and one participant 0.8% (n=1) mentioned unfriendly staff and another mentioned about her preference to deliver at health centre due to expensive cost of living at the district hospital.

Mode of delivery

The proportions of participants' mode of delivery are shown in Table 4.5. The majority 77.4% (n=103) of the participants who used MWH as well as 73.5% (n=97) of participants who did not use MWH had spontaneous vaginal delivery (SVD). Results also show that only 2.3% (n=3) of the participants who used MWH and 9.1% (n=12) of participants who did not use MWH had vacuum extractions.

Table 4.5

Mode of delivery

Variable	Used MWH (n=133)		Not used MWH (n=132)	
	No.	%	No.	%
SVD	103	77.4	97	73.5
Caesarean section (CS)	25	18.8	21	15.9
Vacuum extraction	3	2.3	12	9.1
Breech	2	1.5	2	1.5

Delivery complications

Complications during delivery were reported by 34.6% (n=46) of the participants who used MWH as well as 42.4% (n=56) of the participants who did not use MWH. Table 4.6 shows the distribution of delivery complications. The most occurring complication in both groups was prolonged labour, 21.8% (n=29) of the participants who used MWH and 27.3% (n=36) of the participants who did not use MWH.

Table 4.6

Delivery complications

Variable	Used MWH (n = 133)		Not used MWH (n =133)	
	No.	%	No.	%
Prolonged labour	29	21.8	36	27.3
Post partum haemorrhage	15	11.3	12	9.1
Obstructed labour	10	7.5	13	9.8
Ruptured uterus	2	1.5	1	0.8
Third degree tear	1	0.8	1	0.8

Neonatal resuscitation

Twenty eight percent (n=37) of participants who used MWH and 25% (n=33) of participants who did not use MWH reported that their babies were resuscitated. The babies were resuscitated due to low Apgar score at one minute of between 3/10 and 6/10. Oxygen therapy was given to 20.3% (n=27) of babies born to participants who used MWH and 20.5% (n=27) of babies born to participants who did not use MWH, and airway clearance (suctioning) was done to 24.1% (n=32) of babies born to participants who used MWH and 22.7% (n=30) of babies born to participants who did not use MWH. Prophylactic antibiotics were provided to 6% (n=8) of babies born to participants who used MWH and 5.3% (n=7) of babies born to participants who did not use MWH.

Apgar score at Five minutes

Delivery records of participants were reviewed to see the Apgar score of babies at five minutes. Table 4.7 shows that a large proportion of babies 87.2% (n=116) born to participants who used MWH and 83.2% (n=109) born to participants who did not use MWH had good

Apgar scores at five minutes of 10/10. Only 0.8% (n=1) of babies born to participants who used MWH and 5.3% (n=7) of babies born to participants who did not use MWH had severe asphyxia (Apgar score of ≤ 3) at five minutes.

Table 4.7

Neonatal Apgar score at five minute

Apgar score	Used MWH (n = 133)		Not used MWH (n = 131)	
	No.	%	No.	%
10/10	116	87.2	109	83.2
7/10 to 9/10	12	9.0	14	10.7
4/10 to 6/10	4	3.0	1	0.8
$\leq 3/10$	1	0.8	7	5.3

Condition of neonates at two hours of birth

The condition of neonates two hours after birth was inquired from the mother as well as the delivery records. The results showed that 93.2% (n=124) of babies born to participants who used MWH and 93.9% (n=124) of babies born to participants who did not use MWH were fine at two hours of birth. Only 4.5% (n=6) of babies born to participants who used MWH and 3% (n=4) of babies born to participants who did not use MWH were sick at two hours of birth. Furthermore, results showed that two percent (n=3) of babies born to participants who used MWH and 3% (n=4) of babies born to participants who did not use MWH died within two hours of birth.

Postnatal antibiotics for neonates

Fourteen percent (n=19) of participants who used MWH and 13.5% (n=18) of participants who did not use MWH reported that their babies received antibiotics in postnatal ward. Most babies 57.9% (n=11) born to the participants who used MWH and 72.2% (n=13)

born to the participants who did not use MWH received antibiotics due to neonatal sepsis. Another 36.8% (n=7) and 27.8% (n=5) of babies born to the participants who used MWH and babies born to the participants who did not use MWH respectively received antibiotics due to meconium aspiration. The remaining 5.3% (n=1) baby born to a participant who used MWH received prophylactic antibiotics due to face presentation.

Condition of neonates on discharge

The majority 95.5% (n=127) of participants who used MWH as well as 91.7% (n=122) of participants who did not use MWH reported that their babies were fine on discharge from the hospital. A total 4.5% (n=6) of babies born to participants who used MWH and 5.3% (n=7) of babies born to participants who did not use MWH died before they could be discharged mainly because of birth asphyxia and neonatal sepsis. There was no stillbirth registered from participants who used MWH, whereas four stillbirths (3%)-two fresh and two macerated were reported from participants who did not use MWH.

Postnatal antibiotics for mothers

Only 19.5% (n=26) of the participants who used MWH and 18.9% (n=25) of participants who did not use MWH received antibiotics in postnatal ward. Of these, 92.3% (n=24) of participants who used MWH and 84% (n=21) of participants who did not use MWH received antibiotics as a prophylactic treatment for Caesarean Section. Only 7.7% (n=2) of participants who used MWH and 16% (n=4) of participants who did not use MWH received antibiotics for puerperal sepsis.

Condition of the mother on discharge

Assessment of the condition of the participants on discharge from the hospital was made. Results showed that majority 97% (n=129) of participants who used MWH and 97.7% (n=130) of participants who did not use MWH were fine on discharge. Three percent (n=4) of participants who used MWH and 0.8% (n=1) of participants who did not use MWH were

referred to Queen Elizabeth Central Hospital for further investigations and management. There was no maternal death amongst participants who used MWH while two maternal deaths were reported amongst participants who did not use MWH; one woman died in postnatal ward due to complications of eclampsia after delivery while another woman died in labour ward due to pregnancy induced hypertension.

Duration of hospital stay after delivery

The shortest period of hospital stay after delivery for participants in both groups was eight hours because participants that delivered normally before midnight of the previous day were discharged provided that both the mother and her baby had no problem (Refer Figure 4.8). The majority 87.9% (n=117) of participants who used MWH as well as 90.2% (n=120) of participants who did not use MWH had a hospital stay of ≤ 7 days after delivery, of which more than half from each group, 63.9% (n=85) of participants who used MWH and 54.1% (n=72) of participants who did not use MWH stayed ≤ 1 day. The maximum length of hospital stay after delivery was 13 days for participants who used MWH and 30 days for participants who did not use MWH. The mean duration of stay for participants who used MWH was 2.96 (SD=3.18) and 3.32 (SD=3.87) for participants who did not use MWH.

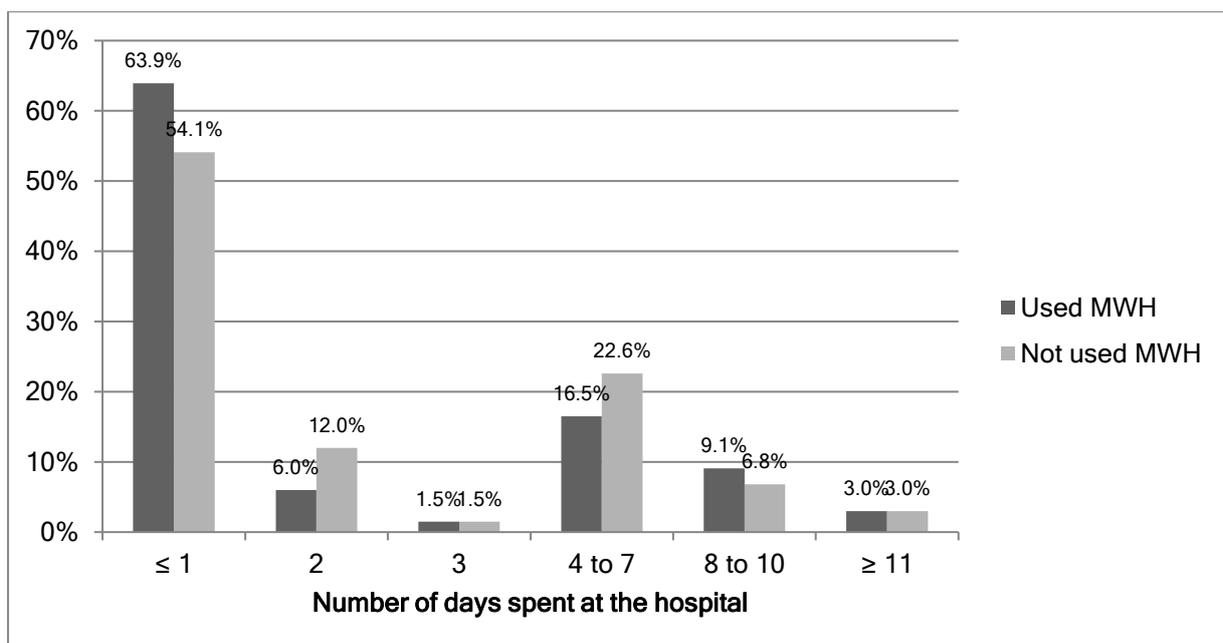


Figure 4.8: Duration of hospital stay after delivery

Referrals from health centre

More than half 57.1% (n=76) of participants who used MWH and 47.4% (n=63) of participants who did not use MWH were referred from health centre.

Association between demographic variables and use of MWH

Chi-square test of independence was computed to determine the association between demographic variables and use of MWH. Results show that there was no association between: tribe of participant and use of MWH (p=0.111), education status of participants and use of MWH (p=0.188), partner's source of income of and use of MWH (p=0.508), marital status and use of MWH (p=0.643), age of participant and use of MWH (p=0.835), religion of participant and use of MWH (p=0.830), and source of income of participant and use of MWH (0.988).

Association between pregnancy risk factors and use of MWH

Chi-square test of independence for the association was used to determine relationship between pregnancy risk factors of participants and use of MWH (Table 4.8). Results showed that there was significant association between: anaemia and use of MWH (p=0.014), malaria in pregnancy and use of MWH (p=0.030), and breech presentation and use of MWH (p=0.042).

Table 4.8

Chi-square test of association between pregnancy risk factors and use of MWH

Variable	Value	df	Pearson Chi-Square (Asymp. Sig.2 sided)	Fisher's exact test (Exact sig.2 sided)
Gravidity	8.115 ^f			.413
Parity	6.812 ^f			.558
No. of living children	8.273 ^f			.396
Lost pregnancy	.132 ^c	1	.717	
No. of lost pregnancy	4.650 ^f			.161
Outcome of previous pregnancy	3.186 ^f			.541
Place of previous delivery	1.921 ^f			.760
Malaria in pregnancy	4.687^c	1	.030	
Time suffered malaria	6.290 ^p	3	.098	.097
Preg. induced hypertension	3.035 ^c	1	.082	
Pre-eclampsia/ eclampsia	2.009 ^c	1	.156	
Ante partum haemorrhage	.714 ^p	1	.398	.445
Oedema present	.003 ^c	1	.959	
Big fundus	1.087 ^c	1	.297	
Anaemia	6.233^p	1	.013	.014
Breech presentation	4.155^c	1	.042	
Multiple gestation	1.368 ^p	1	.242	.280
History of Caesarean section	5.117 ^p	2	.077	.078
History of obstructed labour	3.679 ^p	2	.159	.156
History of preeclampsia/ eclampsia	5.107 ^f			.058
History of multiple preg.	4.303 ^f			.136
History of postpartum haemorrhage	2.015 ^f			.358
No. of antenatal visits	4.195 ^f			.236

Note. Fisher exact test was used when two or more cells had expected count less than five. SPSS generated two p-values - Asymp.Sig.2 sided and Exact sig. 2 sided- for selection for Pearson Chi-square. Other cells are blank because test was not applicable. P-value < .05 is in boldface.

df = Degree of freedom. f= Fisher's exact test value. c= Continuity correction value. p= Pearson Chi-square value

Association between the use MWH and pregnancy outcomes

Chi-square test for association was done between the use of MWH and pregnancy outcomes (Table 4.9). Results showed that there was no significant association between use

of MWH and; (a) condition of neonate on discharge (p=0.170), (b) mode of delivery (p=0.097), (c) delivery complications (p=0.236), (d) neonatal resuscitation (p=0.703), and (e) condition of the neonate at two hours after delivery (p=0.861). However, significant association was identified between use of MWH and proportion of neonates with very low Apgar score of $\leq 3/10$ (p=0.035)

Table 4.9

Chi-square test of association between MWH usage and pregnancy health outcomes

Variable	Value	df	Pearson Chi-square Asymp.sig. 2 sided)	Fisher's exact test Exact sig. 2 sided)
Mode of delivery	6.046 ^f			.097
Complication of delivery	1.404 ^c	1	.236	
Post partum haemorrhage	.149 ^c	1	.700	
Obstructed labour	.207 ^c	1	.649	
Prolonged labour	.795 ^c	1	.373	
Ruptured uterus	.330 ^p	1	.566	1.000
APGAR score at five minutes	6.422 ^f			.083
Apgar score $\leq 3/10$ in five minutes	4.735^p	1	.030	.035
Neonatal resuscitation	.145 ^c	1	.703	
Condition of neonate within two hours	.607 ^f			.861
Mother received antibiotics	.000 ^c	1	1.000	
Neonate received antibiotics	2.773 ^f			.261
Condition of neonate on discharge	3.917 ^f			.170
Days spent in postnatal	5.539 ^f			.357

Note. Fisher exact test was used when two or more cells had expected count less than five. SPSS generated two p-values - Asymp.Sig.2 sided and Exact sig. 2 sided- for selection for Pearson Chi-square. Other cells are blank because test was not applicable.

df = Degree of freedom. F = Fisher's exact test value. c= Continuity correction value. p= Pearson Chi-square value

Comparison of duration of hospital stay

Comparison of length of hospital stay after delivery between participants who used MWH and participants who did not use MWH was made using an independent sample t- test

at 5% level of significance. The results show no statistically significant difference in length of hospital stay after delivery between participants who used MWH and participants who did not use MWH, $t = -.830$, $df = 264$, $p = .407$, $95\% CI [-1.217, .495]$.

Conclusion

This chapter presented results on the use of MWH at Chiradzulu District Hospital, Southern Malawi. Among the demographic characteristics, no significant difference was observed between participants who used MWH and participants who did not use MWH. However, significant difference was observed on malaria in pregnancy, severe anaemia in pregnancy, and breech presentation between participants who used MWH and participants who did not use MWH.

The study also showed that majority of participants from both groups had knowledge about the existence of MWH at the district hospital because they were told during ANC visit. However, no association was found between knowledge of the availability of MWH at the district hospital and its usage.

Furthermore, the study showed that mothers were encouraged to do exercises in order to keep themselves fit whilst at MWH. Most mothers (79.4%) reported that the exercises they were doing whilst at MWH were running and playing netball. Obstetric assessments were among the services that 77.5% of mothers reported being provided at MWH.

This study also has shown that there was no association between the use of MWH at the district hospital and the improvement of pregnancy outcomes. The difference in pregnancy outcomes that was observed between participants who used MWH and participants who did not use MWH was not significant. However, it was noted that the proportion of babies with low Apgar score of 0-3 at five minute was significantly lower among participants who used MWH compared with the proportion of babies with low Apgar score among participants who did not use MWH.

CHAPTER 5

Discussion

This research study was set out to establish the use of MWH at Chiradzulu District Hospital, Southern Malawi through the identification of demographic characteristics of pregnant women who used MWH, identification of factors that influence use of this facility, description of the type of services provided, and comparing the pregnancy outcomes of women who used MWH with those who did not use this facility, but came directly from home to deliver at the district hospital.

Demographic characteristics of participants

The results show that maternal age does not have a significant effect on MWH utilisation at Chiradzulu District Hospital. The age proportions of mothers who used MWH and those who did not MWH were similar, only that there was a slight increase in the proportion of adolescents in the group that did not use MWH than in the group that used MWH. This is contrary to the expectation and belief that MWHs are supposed to be used mainly by mothers with high risk pregnancies including adolescent mothers. An adolescent mother is believed to be at high risk of developing complications because she is less likely to attend prenatal care, often becomes anaemic, and is more likely to develop pre-eclampsia-a severe condition associated with raised blood pressure as well as obstructed labour (Eden, 2006). However, the similarities in proportions of the age groups of the mothers who used MWH and those who did not use MWH might be attributed to factors such as place of residence because mothers whose residences are near the district hospital are not encouraged to wait at the MWH, and this parameter was not considered during the analysis of this study variable.

This study also shows that maternal education is not one of the demographic factors that influence utilisation of MWH at the district hospital. Contrary to this, several researchers have asserted that educational level of the mothers and their husbands remained the strong predictor of maternal healthcare service utilisation (Iyaniwura & Yussuf, 2009; Zelalem-Ayele et al., 2014). There is no doubt that educated mothers are more likely to forsake traditions to utilise modern means of safeguarding their own health and that of their newborns leading to greater maternal healthcare utilisation.

It was also observed that the source of income of mothers and their spouses does not affect utilisation of MWH at the district hospital, contrasting the available evidence that income levels of mothers or couples influence utilisation of MWH. Sialubanje et al., (2016) found that financial constraints of spouses prevent mothers from using MWHs. Most of the mothers from both groups engaged in small business and farming to earn a living. Further, the study showed that a good proportion of the spouses from both groups were either employed or businessmen. However, a slightly higher proportion of spouses of mothers who used MWH were businessmen. It is possible that this did not happen by chance but mothers whose spouses were merchants were encouraged to wait for fear that labour can start whilst the spouse is away, so to avoid travelling complications in case labour starts at night they elected to wait at the MWH. It is also possible that spouses who were merchants were much more able to support their wives whilst at the MWH, but this study did not look at the type of business the partner was doing in order to ascertain the financial status of the spouse.

This study also showed that maternal tribe like other demographic factors did not influence the utilisation of MWH at the district hospital. However, there was a difference in the proportion of Lomwes and Yaos in the group of mothers who used MWH and mothers who did not use MWH respectively. There were more numbers of Lomwes than Yaos in the group of mother who used MWH whilst in the group of mothers who did not use MWH there

were more Yaos than Lomwes. This difference in the proportion of Lomwes and Yaos may not be a coincidence but may imply that Lomwes are more likely to utilise MWH compared to Yaos. Several studies had shown that socio-cultural norms influence utilisation of maternal health care including MWHs (García-Prado & Cortez, 2012; M. J. Ruiz et al., 2013; Sialubanje et al., 2015).

Pregnancy risk factors

This study shows that parity of mothers does not affect utilisation of MWH at the district hospital as there was no significant difference in parity between mothers who used MWH and mothers who did not use MWH. This is not in line with Kelly et al., (2010) who reported that there was significant difference in parity between mothers who used MWH and mothers who did not use MWH. The differences in the findings of these two studies may be attributed to differences in MWH admission protocols. Attat Mission Hospital, a place where Kelly et al., conducted their study, MWHs were mostly for mothers with actual or anticipated labour complication whilst the admission protocol at Chiradzulu District is slightly different whereby every pregnant woman is allowed as long as she is willing to stay close to the hospital.

The outcome of previous pregnancy appeared to have no influence on the utilisation of MWH at the district hospital. The proportion of mothers whose previous pregnancy was abortion, stillbirth, and neonatal deaths between mothers who used MWH and mothers who did not use MWH were either similar or there was no significant difference. This result is not consistent with results of other studies that showed that mothers who experience abortions, stillbirths, and obstructed labour previously were better users of maternal healthcare services because they had a practical experience on the dangers associated with pregnancy and childbirth (Nigussie, Mariam, & Mitike, 2005; Zelalem-Ayele et al., 2014). This lack of statistically significant differences in the proportion of mothers who used MWH and mothers

who did not use MWH in terms of stillbirths and neonatal deaths may be partly attributed to the quality of antenatal care as well as the kind of messages mothers are given during antenatal visits. If the messages were not adequate it is obvious that they cannot make a good decision to come and wait at MWH, because it can be wrong to assume that all these mothers stay close to the hospital that it was not necessary for them to wait at MWH.

This study also shows that the majority of mothers in both arms had their last delivery at a health facility, either at a health centre or a district/CHAM facility. This finding is in line with the Malawi Demographic Health Survey 2010 whereas facility delivery was at 76% (NSO & ICF Macro, 2011). This is a good development considering that facility delivery is an important factor in the quest to reduce maternal and neonatal mortality and morbidity arising from intrapartum complications. In contrast, Envuladu, Agbo, Lassa, Kigbu, and Zoakah (2013) asserted that most pregnant women in developing countries prefer giving birth at home. Further, the study found out that place of delivery during the last pregnancy had no influence on utilisation of MWH at the district hospital as the difference in the proportion of place of delivery during the last pregnancy for mothers in both groups were not significant. This finding is not surprising because it is not a requirement that every pregnant woman should wait for the onset of labour at MWH, but only the ones with pregnancies with complications or those who comes from far-away places are the ones encouraged to wait at the MWH.

It is observed that mothers in both groups had obstetric risk factors and the proportional difference of most of the risk factors for mothers who used MWH and mothers who did not use MWH were statistically insignificant. However, it was found that malaria in pregnancy, severe anaemia, and breech presentation are the only obstetric risk factors that have significant influence on utilisation of MWH at the district hospital. This finding is in line with a study done in rural Zambia by van Lonkhuijzen et al., (2003) that pregnancy risk

factors for mothers admitted at MWH were greater compared to mothers not admitted at MWH and the difference in pregnancy risk status was significant.

All mothers attended antenatal care (ANC) clinics and most of them had knowledge about the existence of MWH because they were told during antenatal visits. However, a slightly higher proportion of mothers who used MWH had knowledge about the existence of MWH compared with mothers who did not use MWH. This is a good development that most mothers were told during ANC about the availability of MWH at the district; hence providing an opportunity for the promotion of the use of skilled attendance at birth. This finding differs with the findings of several studies that had the majority of participants who were ignorant on the availability of MWHs in their areas (Mramba et al., 2010; M. J. Ruiz et al., 2013; Shrestha et al., 2007); this could be partly attributed to the lack of incorporation of MWH information in ANC health education.

The study shows that health centres are the main source of referral to MWH. This is not a surprising finding because this MWH is located at the district hospital, which is a referral hospital for all health centres in the district. The study also shows that there was no mother that was referred to the MWH by a traditional birth attendant (TBA) or community leader. Yet previous studies done in the same district have shown that some mothers are still delivering with TBAs even after completing the required antenatal care visits at the health facility (Chirwa et al., 2014). In contrast to this, Andemichael et al., (2009) reported that in Eritrea trained TBAs were encouraging pregnant women to deliver at MWHs and they even accompanied them to the MWHs. This revelation has shown that maternal and neonatal health services in the district are leaving out other important players such as TBAs and community leaders because these people were supposed to assist in referring pregnant women to the hospital (Republic of Malawi, 2012). As a result, it may be difficult to reduce maternal and neonatal morbidity and mortality in the district.

The study has shown that advice on exercises is the most reported service that is offered at the MWH and majority of the mothers reported that the exercise they were doing whilst at MWH was playing netball and running. Further, the study revealed that only few participants were given health education on different topics such as exclusive breastfeeding, newborn care, and nutrition. Similarly, Malawi Service Provision Assessment Report 2013-2014 asserted that topics such as infant care, breastfeeding and vaccinations were rarely discussed during antenatal care consultations (MoH Malawi & ICF International, 2014). This result is similar to the findings of a baseline survey conducted at the same hospital by Odland, Chirwa and Maluwa (2015) that showed that the quality of antenatal care provided at the hospital is below the recommended MoH-RH standards especially on antenatal health education. This study finding is of concern because the expectation is that staying at MWH should be beneficial to women otherwise they will stop using the facility as it is not necessary to patronise the service you feel is not beneficial to your health. Thus, it is imperative to have guiding protocols on services that should be provided to women during their stay at MWH. The WHO (1996) underscored the need to make MWH educative as well as entertaining as possible so that women may be encouraged to stay at the MWHs, rather than just providing a shelter near a hospital with obstetric care.

This study has shown that the mean length of stay for mothers at MWH is 19 days, which is slightly below that of Attat Mission Hospital in Ethiopia which was at 20 days (Gaym, Pearson, & Soe, 2012). Most of the mothers spent at most one month (≤ 30 days) at the MWH. Although it is quite expensive for women to stay close to a month at MWH, this period is reasonable if we consider that women are advised to come to the hospital two weeks before their expected date of delivery (EDD) and also that at least 90% of babies are born two weeks either side of the EDD (Moore, 2015). However, a considerable proportion of mothers overstayed at the MWH. This problem of overstay can be partly attributed to the fact that

most mothers in developing countries rarely remember the date of their last menstrual period (Rogerson, Mwapasa, & Meshnick, 2007). This makes it difficult for healthcare workers to calculate the correct EDD as a result they mainly use estimations. For healthcare workers to correctly estimate the expected date of delivery, a good assessment is required at first antenatal appointment of which most of the time it is done poorly due to, among other reasons, increased workload that is coupled with low midwifery skills. The other possible cause of MWH overstay is that women from far-away places may opt to stay at MWH in order to be close to the hospital after having been treated with their pregnancy problems. Finally, lack of admission protocols on when should a woman be admitted at MWH is also contributing to this problem of overstaying at the MWH as women are allowed to stay at any gestational age as long as the pregnancy is more than 28 weeks.

This study has shown that majority of mothers were satisfied with their stay at MWH. Similarly, a study conducted in southern part of Malawi by Touray-Daffeh (2003) found that 55% of mothers who used MWH were satisfied with their stay (as cited in van Lonkhuijzen et al., 2012). Contrary results by Mkundika-Mndolo (2015) showed that the majority of the mothers who used MWH in Blantyre Rural were not satisfied with their stay. This is a good development that most of the mothers are satisfied with their stay at MWH because client satisfaction is an important and commonly used indicator for measuring the quality of care and it affects clinical health outcomes, continued and sustained use of services/client retention, and medical malpractice (Creel, Sass, & Yinger, 2002; Prakash, 2010). However, Creel et al., stated that client satisfaction may not necessarily mean that the quality of care is good but may sometimes only indicate that the expectation of the clients is low as client educational attainment and income levels may also affect client satisfaction level. In this study half of the mothers were satisfied with their stay at MWH because their complaints were attended to timely. Similarly, several authors have shown that timely service is

particularly a strong determinant of quality across different types of public services including healthcare services (Centre for the study of social policy, 2007; Creel et al., 2002; Prakash, 2010).

Pregnancy outcomes

This study has shown that MWH utilisation does not significantly affect mode of delivery of the mothers at Chiradzulu District Hospital, despite that there was a slightly higher proportion of caesarean section as well as spontaneous vaginal deliveries amongst mothers who used MWH compared mothers who did not use MWH; and that the proportion of vacuum extractions was higher in the group of mothers who did not use MWH compared to the group of mothers who used MWH. This difference in the proportion in mode of delivery between mothers who used MWH and those who did not use MWH was not statistically significant. These results differ to the results of a study conducted by van Lonkhuijzen et al., (2003) which showed that there were high rates of breech deliveries, caesarean sections, and vacuum extractions observed in a group of mothers that stayed at MWH compared to a group of mothers that came direct from home to deliver at that hospital. The differences in the results of these two studies can be attributed to differences in the risk status of mothers in these two studies. In a study by van Lonkhuijzen et al., the group of mothers admitted at MWH had more risk factors (antenatal and maternal) compared to the group of mother that were not admitted at MWH whilst in this study there was no marked difference in the maternal pregnancy risk status between mothers who used MWH and mothers who did not use MWH.

The study has shown that MWH utilisation at Chiradzulu District Hospital does not affect the occurrence of delivery complications. The proportion of delivery complications was similar between the two groups with prolonged labour being the most reported delivery complications by mothers from both groups. This result is in line with results of a study by

Nystedt and Hildingsson (2014) which showed that 20% of women with spontaneous onset of labour in a Swedish county experienced a prolonged labour. However, it could be possible that poor monitoring of mothers in labour as well as prolonged observation without action has contributed to the similarities in the proportion of delivery complications between the two groups of this study. A prolonged observation without action refers to a situation in which a health worker may note a problem in a labouring woman in time but decides to continue monitoring her without intervening until it is late; as a result, a mother may experience a prolonged labour, which often results in adverse maternal and foetal outcomes (Pearson et al., 2007).

This study has also shown that MWH utilisation at Chiradzulu District Hospital does not have an effect on Apgar score at one minute, because the difference in the proportion of babies that was resuscitated due to low Apgar score at one minute between mothers who used MWH and those who did not use MWH was not significant. This could be partly because of the similarities in the mode of deliveries as well as pregnancy risk factors status between mothers who used MWH and those who did not use MWH. Further, it was observed that a large proportion of babies in both groups had good Apgar score at five minutes. This is good because most of these babies from both groups are likely to survive the neonatal period. Fraser, Cooper, and Nolte (2010) stated that Apgar score at five minutes is a more important and most reliable predictor of risk of death during neonatal period, and of a child's neurological state and risk of major disability at the age of one year.

In contrast, the joint Committee Opinion No. 644 on the Apgar score of the American College of Obstetrics & Gynaecologists and American Academy of Paediatrics argued that although it is true that Apgar score provides an accepted and convenient method for reporting the status of newborns immediately after birth and the response to resuscitation if required, Apgar score alone cannot predict morbidity, mortality, and neurologic outcome of an

individual infant but that of a large population (Committee on Obstetric Practice American Academy of Pediatrics-Committee on Fetus and Newborn, 2015). This is the case because some elements in the Apgar score such as tone, colour and reflex irritability may be subjective and that there are numerous factors that may influence Apgar score like maternal sedation/anaesthesia, trauma, gestational age and congenital abnormalities (Committee on Obstetric Practice American Academy of Pediatrics-Committee on Fetus and Newborn). Furthermore, results showed that the proportion of babies with very low Apgar score (0-3) was lower in the group of mothers who used MWH compared with the proportion of babies with very low Apgar score in the group of mothers who did not use MWH. This difference was statistically significant, implying that babies born to mothers who did not use MWH were less likely to survive the neonatal period. This may not be a true reflection of the situation at hand considering that sample size for this study was relatively small as it has been shown that Apgar score alone cannot predict morbidity and mortality outcomes of an individual infant but of a large population study because it is affected by many factors including others factors like maternal medication, gestational age, resuscitation, and neurologic conditions (Committee on Obstetric Practice American Academy of Pediatrics - Committee on Fetus and Newborn).

There was no significant difference in the proportion of babies that died before they could be discharged from the hospital between mothers who used MWH and mothers who did not use MWH. Further, no significant difference on stillbirth was found between mothers who used MWH and those who did not use MWH, although there was no stillbirth registered in the group of mothers who used MWH compared with four stillbirths that were registered in the group of mothers who did not use MWH. The absence of stillbirths among mothers who used MWH can be partly attributed to antenatal assessment conducted at MWH where mothers with problems were identified quickly and appropriate interventions were instituted

in time to prevent occurrence of stillbirths. It could be possible also that if mothers knew that they were having an intrauterine death, they may decide not to wait at MWH because they did not appreciate the importance of waiting at the hospital. The other possible reason was that health workers decided to induce the labour instead of advising the mother to wait at MWH for fear of disseminated intravascular coagulation (DIC), a bleeding disorder which is caused, among others things, by infection in the bloodstream and serious complication of a dead foetus (Levis & Schmaier, 2016). This result is in line with the result of a study by van Lonkhuijzen et al., (2003) which found that there was no significant difference in perinatal deaths between mothers that were admitted at MWHs and mothers that were not admitted at MWHs.

This study found that there was no statistically significant difference in the proportion of mothers treated for puerperal sepsis between mother who used MWH and those who did not use MWH. However, the proportion of mothers with puerperal sepsis was slightly higher among mothers who did not use MWH compared with mothers who used MWH. This could be attributed to difference in the proportion of obstructed/prolonged labour between the two groups whereas mothers who used MWH had lower proportion of obstructed/prolonged labour compared with their counterparts. This observation that puerperal sepsis was high among mothers with obstructed/prolonged labour is in line with the result of a study by Momoh, Ezugworie, and Ezeigwe (2010) which showed that obstructed/prolonged labour and caesarean section was one of the commonest predisposing factors to puerperal sepsis.

This study also found that there was no statistically significant difference in the number of mothers that were referred to a tertiary hospital between mother who used MWH and those who did not use MWH. However, the number of mothers that were referred to a tertiary hospital from the group of mothers who used MWH was slightly higher than their counterparts. These mothers were referred to the tertiary hospital because of complications of

eclampsia. The mothers were referred for further investigations such as full blood count and liver function test because these services were not available at the district hospital. This slight increase in referral of mothers who used MWH was not a surprise because there were greater proportions of pregnant women with pre-eclampsia, pregnancy induced hypertension as well as a previous history of pre-eclampsia.

Two maternal deaths were registered from the group of women who did not use MWH, whereas no maternal death was recorded from the group of women who used MWH. These women died because of complications of eclampsia. The absence of maternal death among mothers who used MWH could be attributed partly to timely care provided at MWH especially when a risk factor had been identified as well as the conscious that health workers have when they identify that a mother from MWH has a complication for fear of reprisal from the hospital management.

This study has shown that there was no significant difference in the length of hospital stay after delivery of mothers who used MWH and those who did not use MWH. This result can be partly attributed to lack of significant difference in mode of delivery as well as delivery complication between mothers who used MWH and mothers who did not use MWH. This observation is in line with results of a study conducted by Borkowski and Mielniczuk (2006) which found that postpartum length of stay depends on, among other factors such as, mode of delivery, maternal clinical profile, and complication of puerperium. A related study by Elattar, Selamat, Robson and Loughney (2008) found that “a woman’s length of hospital stay was likely to be increased by the greatest amount if her baby required a specialised care but the bed occupancy was more strongly influenced by the presence of obstetric complications because these were common” (p.73).

Study limitation

This study has been conducted at a single site and that these results may reflect the pattern and practices unique to this single institution. Thus, it is difficult to generalise the results of this study to other sites.

Recommendations

The following are recommendations on midwifery practice, education, management, and research that have been made based on the study results.

Midwifery practice

Despite the revelations that utilization of MWH at Chiradzulu District Hospital did not significantly improve the maternal and neonatal health outcomes, the study identifies numerous areas of potential improvements for the MWH programme. There is a need to emphasise the importance of giving health education to women at MWH especially on nutrition, care of the newborns, exclusive breastfeeding, birth preparedness plans, and family planning. For this to be achieved there is a need to have protocols and procedure manuals as well as standard operating procedures, so that the care that will be provided at the MWH could be standardized.

Healthcare workers need to provide routine antenatal care to women at MWH at least once a week rather than waiting to review women when they raise a complaint as it is practiced now. This will help to promote active risk assessment screening so that women with problems are identified and assisted in time.

Management

Management should develop admission protocols and standard operating procedures (SOPs) that will help to guide healthcare workers working in MWH and referring agents so that the problems of overstay at MWH can be reduced. These SOPs will help in facilitating

the achievement of the intended goal of MWH of assisting in the reduction of maternal and neonatal morbidity and mortality rates in the district.

Management should consider allocating hardworking staff at MWH because most of the times healthcare workers including senior managers feel that allocating hardworking staff at MWH is a waste of human resource. As a result, many times there is no nurse/midwife on duty and also support staff sometimes chooses not to come which result in women sleeping on a floor that was not mopped for days.

There is an urgent need for management to work on the improvement of staff attitudes. This can be done through interventions like conducting performance appraisal and supportive supervision.

There is a need for management to source funding so that they can procure entertainment units such as a television set and/ a radio, so that these women should be watching educative programmes on the television and also it will help to reduce boredom.

Education

Nursing and midwifery colleges should consider allocating midwifery students to MWHs during clinical practice. This will help accord them with an opportunity to put into practice what they learnt in class on the management of pregnant women with high risk as well as low risk, so that they will become competent practitioners in midwifery.

The allocation of midwifery students in MWH care is also important because they can influence the use of MWHs in their future practice.

Research

A replica of this research is required in Malawi to be done at a large scale to examine the use and effects of MWH. This study can help us to know how MWHs are used nationally and provide a strong base for evidence for their impact on maternal and neonatal mortality and morbidity in Malawi.

There is a need to conduct a study on why traditional birth attendants and community leaders in Chiradzulu District are not involved in referring women to MWH.

Conclusion

The purpose of this study was to examine the use of MWH at Chiradzulu District Hospital. The results demonstrated that there was no difference in demographic characteristics as well as pregnant risk factor status between pregnant women who used MWH and those that did not use this facility. However, the results showed that there was a significant association between malaria in pregnancy, anaemia, as well as breech presentation and the use of MWH.

The study has also shown that utilisation of MWH at CDH did not significantly improve pregnancy health outcomes as there was no significant difference in pregnancy outcomes between women who were admitted at MWH and those that were not admitted at MWH. However, the proportion of babies with low Apgar score at five minute was significantly lower among babies born to women who were admitted at MWH compared with babies that were born to women that were not admitted at MWH.

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Appendices

Appendix 1: Questionnaire (English version)

Section A: Demographic data			
No	Questions	Answering code	Comments
A1	How old are you?	<input type="text"/> <input type="text"/> <input type="text"/>	
A2	What is the highest level of school you attended: primary, secondary or tertiary?	Primary..... 01 Secondary..... 02 Tertiary 03 None .....04	
A3	Where do you come from (place of residence)?	..... 98	
A4	Estimated distance from CDH	<input type="text"/> <input type="text"/> <input type="text"/>	
A5	What is your current marital status?	Single..... 01 Divorced 02 Married..... 03 Widow..... 04 In a relationship..... 05	
A6	If married, what is the main source of income for your husband?	Famer.....01 Piece work .....02 Others.....98 (specify)	
A7	What is your source of income?	Farmer.....01 Piece work .....02 Others.....98 (specify)	
A8	What is your tribe or ethnic group?	Lomwe.....01 Yao..... 02 Mang'anja.....03 Others.....98 (specify)	
A9	What is your religion?	Catholic .....01 CCAP.....02 Seventh Day.....03 Muslim .....04 No religion.....05 Others .....98 (specify)	
A10	Were you referred from a health centre?	Yes.....01 No.....02	

Section B: Pregnancy risk assessment			
B1	How many pregnancies have you had?	<input type="text"/>	
B2	How many deliveries have you had?	<input type="text"/>	
B3	How many children do you have	<input type="text"/>	
B4	Have you ever had any pregnancies that did not result in a live birth?	Yes.....01 No.....02	If no, go to QB6
B5	How many pregnancies did not end into a live birth?	<input type="text"/>	
B6	What was the outcome of your previous pregnancy?	abortion.....01 stillbirth.....02 Live birth.....03 Others .....98 (specify)	
B7	Where did you give birth to your previous baby?	Home .....01 TBA.....02 Health centre.....03 Hospital.....04 Not applicable.....05	
B8	Did you suffer from malaria during this pregnancy?	Yes.....01 No.....02	If no go to QB10
B9	When did you suffer from malaria?	Now.....01 During first trimester.....02 During second trimester...03 Last month.....04	
B10	Did you have the following conditions with this pregnancy? Tick all the response that are applicable		
	a. Hypertension	Yes .....01 No.....02	
	b. Pre-eclampsia	Yes .....01 No.....02	
	c. Ante partum haemorrhage (APH)	Yes .....01 No.....02	
	d. Twin gestation	Yes .....01 No.....02	
	e. Breech presentation	Yes .....01 No.....02	
	f. Big fundus	Yes .....01 No.....02	
	g. oedema of feet	Yes.....01 No.....02	

B11	Do you have previous history of the following conditions?		
	Caesarean section (C/S)	Yes .....01 No.....02	
	Obstructed labour	Yes .....01 No.....02	
	Pre-eclampsia/ eclampsia	Yes .....01 No.....02	
	Placenta previa	Yes .....01 No.....02	
	Postpartum haemorrhage	Yes .....01 No.....02	
B12	If yes to question B11, during which pregnancy did you experienced the condition?	..... (specify)	
B13	Did you attend antenatal care during this pregnancy?	Yes .....01 No.....02	If no, go to QC1
B14	If yes to Q B13, how many times? (Check the health passport book to compare)	..... (specify)	
Section C: Use of Maternity Waiting Home (MWH)			
C1	Were you told about the existence of a MWH during ANC visit?	Yes.....01 No.....02 Not applicable.....03	
C2	Were you admitted at the MWH?	Yes .....01 No .....02	If yes, go to Q C4
C3	What was the reason for not using MWH?	Not knowing of MWH....01 Home is not far.....02 Poor services at MWH....03 Others.....98 (specify)	go to Q D1
C4	Who referred you to the MWH?	Self referral .....01 From health centre .....02 Referral from TBA .....03 Was told during ANC.....04 Traditional leaders.....05	
C5	Whilst at MWH, were you given health education on the nutrition?	Yes .....01 No.....02	
C6	During your stay at MWH, were you counselled on newborn care?	Yes .....01 No.....02	
C7	During your stay at MWH, were you advised to do exercises?	Yes .....01 No.....02	If no, go to Q C9
C8	Which exercises were you doing?	Playing netball.....01 Running .....02 Others.....98 (specify)	
C9	During your stay at MWH, were you advised on exclusive breast feeding?	Yes .....01 No.....02	

C10	Were you allowed to bring a guardian to stay with you at the MWH?	Yes .....01 No.....02	
C11	During your stay at MWH, were you examined by nurse or doctor?	Yes .....01 No.....02	If no, go to Q C13
C12	How often did they examine you?	----- (Specify)	
C13	Were there other services that were offered to you at MWH?	Yes .....01 No.....02	If no, go to Q C15
C14	If yes to Q C13, name them?	Sewing.....01 Recreation.....02 Others.....98 (specify)	
C15	Is there anything more you have learnt or benefitted during your stay at MWH?	Yes .....01 No.....02	If no, go to Q C17
C16	If yes to Q C15, what is it that you have learnt or benefitted from your stay at MWH?	I have alive baby.....01 Learning from friends.....02 Others.....98 (specify)	
C17	Did your husband accept that you come and wait at MWH?	Yes .....01 No .....02	
C18	Are you satisfied with your stay at MWH that next time you are likely to come and wait at MWH?	Yes .....01 No.....02	If no, go to Q C20
C19	If yes to Q C18, what made you to be satisfied?	Staffs are friendly.....01 My complaints were attended to on time.....02 I had time to rest.....03 Others.....98 (specify)	Skip Q C20
C20	If no to Q C18, what made you not to be satisfied?	Staffs are rude.....01 I was just staying without been checked.....02 Others.....98 (specify)	
Section D: Maternal outcome (labour and delivery)			
D1	What was your mode of delivery? (Cross-check with the delivery notes)	SVD .....01 C/S.....02 Breech delivery.....03 Vacuum delivery.....04	
D2	Have you experienced any complication during birth? (Cross check with delivery notes)	Yes.....01 No .....02	If no, skip Q D3
D3	If yes to Q D2, name the complication experienced during delivery? (Cross check with delivery notes). Tick all responses applicable		
	Postpartum haemorrhage	Yes .....01 No.....02	
	Obstructed labour	Yes .....01 No.....02	

	Prolonged labour	Yes .....01 No.....02	
	Ruptured uterus	Yes .....01 No.....02	
	Fistula	Yes .....01 No.....02	
	others _____	Yes .....01 No.....02	
	(specify)		
D4	What was the condition of the mother within the first two hours? (check the delivery notes)	Well.....01 Unconscious.....02 Died.....03 Others.....98 (specify)	
Section E: Neonatal outcome (labour and delivery)			
E1	What was the Apgar score of the baby at five minutes? (check delivery notes)	10/10.....01 7/10 to 9/10.....02 4/10 to 6/10.....03 ≤3/10.....04 0/10.....05	
E2	Was the baby resuscitated?	Yes.....01 No.....02	If no, go to Q E4
E3	Was the baby given the following treatment on resuscitation? Tick all applicable		
	oxygen therapy	Yes.....01 No.....02	
	suctioning	Yes.....01 No.....02	
	antibiotics	Yes.....01 No.....02	
E4	What is the condition of the baby after 2 hours of birth?	Sick.....01 Well/fine.....02 Died.....03	
Section F: Postnatal ward and discharge			
F1	Did you receive antibiotics in postnatal ward? (cross-check with the postnatal records)	Yes.....01 No.....02	If no, go to Q F3
F2	What was the indication for antibiotics? (check the postnatal records)	Prophylaxis for C/S.....01 Postpartum sepsis.....02 Others.....98 (specify)	
F3	What is the condition of the mother on discharge from postnatal ward?	Fine.....01 Sick.....02 Convalescent.....03 Died.....04	
F4	Did the baby receive antibiotics in postnatal ward? (cross-check with the notes)	Yes.....01 No.....02	If no, skip Q F5

F5	What was the indication for the antibiotics? (check the postnatal records)	Neonatal sepsis..... 01 Prophylaxis..... 02 Others..... 98 (specify)	
F6	What is the condition of the baby on discharge?	Sick.....01 Fine/healthy.....02 Convalescent.....03 Died.....04	
F7	How many days have the mother spent in the postnatal ward?	<input type="text"/> <input type="text"/>	
	Date of admission at the hospital	.....
	Date of delivery	.....
	Date of discharge from postnatal ward	.....

Thanks for your participation
End of questions

Appendix 2: Questionnaire (Chichewa version)

Gawo A: Mbiri ya otenga mbali pakafukufuku			
No	Mafunso	Mayakho	Ndemanga
A1	Muli ndi zaka zingati za kubadwa?	<input type="text"/>	
A2	Kodi munalekezera kalasi yanji?	Pulaimale.....01 Sekondale.....02 Koleji... .....03 Sindinapiteko .....04	
A3	Kodi munachokera kapena kukhala kuti?	.....98	
A4	Yelekezani kutalita kwa mtunda wake kufika ku chipatala cha Chiradzulu.	<input type="text"/>	
A5	Tiuzeni mbiri yanu ya banja?	Mbeta.....01 Banja linatha.....02 Okwatiwa.....03 Namfedwa.....04 Tikumangoyenderana.....05	
A6	Ngati ndinu apabanja, kodi amuna anu njira yawo opezera chuma ndi yanji?	Kulima.... .....01 Maganyu.....02 Amagwira ntchito.....03 Bizinesi.....04 amangokhala.....05	
A7	Kodi njira yanu yopezera chuma ndi yanji?	Kulima.....01 Maganyu.....02 Ndimagwira ntchito.....03 Bizinesi.....04 ndimangokhala.....05	
A8	Kodi ndi inu a mtundu wanji?	Lomwe.....01 Yao.....02 Mang'anja.....03 Mitundu ina.....98 (Tchulani)	
A9	Kodi mumapephera mpingo wanji?	Catholic .....01 CCAP.....02 Seventh Day.....03 Chisilamu..... 04 Sindipephera.....05 Mpingo wina.....98 (Tchulani)	
A10	Kodi mwatumizidwa kuchokera kuchipatala chaching'ono	Eya.....01 Ayi.....02	

Gawo B: Kufufuza chiopsezo chamimba			
B1	Kodi mimbayi ndiyachingati?	<input type="checkbox"/>	<input type="checkbox"/>
B2	Kodi mwaberekapo kangati?	<input type="checkbox"/>	<input type="checkbox"/>
B3	Kodi muli ndi ana angati?	<input type="checkbox"/>	<input type="checkbox"/>
B4	Kodi munakhalapo ndi mimba yomwe inachoka kapena kuti munabereka mwana wakufa kale?	Eya.....1 Ayi.....2	Ngati ayi , pitani pafunso B6
B5	Kodi ndi mimba zingati zomwe zinachoka kapeni mwana anabadwa wakufa kale?	<input type="checkbox"/>	
B6	Kodi mimba yosatizana ndi iyi inatha bwanji?	Ndinapita pachabe.....01 Mwana anapitilira..... 02 Mwana anadadwa wabwino bwino.....03 Zina.....98 (Tchulani)	
B7	Kodi mimba yosatizana ndi iyi kunakachilira kuti?	Pakhomo.....01 Kwa a zamba.....02 Health centre.....03 Chipatala chapaboma.....04 Kubereka koyamba.....05	
B8	Kodi mwadwalako matenda a malungo m'mene muli ndi mimbayi?	Eya.....01 Ayi.....02	Ngati ayi , pitani pafunso B10
B9	Munadwalako liti matenda a malungowa?	First trimeter.....01 Second trimester.....02 Third trimester..... 03	
B10	Kodi mwakumana ndi mavuto awa pamene muli ndi mimbayi? Chongani eya kapena ayi moyenelera		
	a. Kuthamanga kwa magari	Eya .....01 Ayi.....02	
	b. kuthamanga kwa magari ndi kupezeka kwa suga m'mikozo	Eya.....01 Ayi.....02	
	c. Kutaya magari musanabereke)	Eya.....01 Ayi.....02	
	d. kuyemberkezera ana awiri	Eya .....01 Ayi.....02	

	e. mwana kutsogoza matako	Eya.....0 1 Ayi.....0 2	
	f. kukula kwamimba	Eya.....01 Ayi.....02	
	g. kutupa kwa mapazi	Eya.....01 Ayi.....02	
B11	Kodi muli ndi mbiri ya mavuto awa pamene mumabereka mbuyomu?		
	Kuberekera mpeni (C/S)	Eya .....01 Ayi.....02	
	Kulephela mubereka chifukwa njira inachepa	Eya .....01 Ayi.....02	
	Matenda a zinjenje obwela kamba kakuthamanga kwa magazi	Eya .....01 Ayi.....02	
	Kusalira kwa chiberekero	Eya .....01 Ayi.....02	
	Kutaya magazi mutabereka	Eya .....01 Ayi.....02	
B12	Ngati yankho ndi eya pafunso B 11, ndi mimba iti yomwe kanakumana ndi mavuto amene watchulawo?	..... Tchulani	
B13	Kodi mumayendera sikelo ya amai apakati?	Eya.....01 Ayi.....02	Ngati ayi , pitani funso C1
B14	Ngati yakho ndi eya kufunso B13, mwayenda kusikelo kangati? (onani ku health passport book kuti mutsimikize)	..... Tchulani	
Gawo C: Kugwiritsa ntchito nyumba yachidikirilo (Matenite)			
C1	Anakuuzani kuti kuli nyumba yachidikirilo pamene mumayendera sikelo?	Eya.....01 Ayi.....02 Sindimapita kusikelo.....03	
C2	Kodi munagonekedwa kunyumba yachidikirilo?	Eya .....01 Ayi.....02	Ngati eya , pitani funso C4
C3	Kodi chifukwa nchani simunapite ku nyumba yachidikiliro?	Sindinaziwe za nyumbayi.....01 Kwathu pafupi.....02 Sapereka chithandizo chabwino ku nyumbayi.....03 Zifukwa zina .....98	Pitani kufunso D1

		(Tchulani)	
C4	Kodi anakutumizani kapena kuti anakuuzani kuti mukadikirile kunyumba ya chidikirilo ndi ndani?	Ndinafuna ndekha.....01 ku health centre.....02 Azamba a m'midzi.....03 Anandiuza anamwino pamene ndimayendera sikelo.....04 Amfumu anthu.....05	
C5	Pamene munali kunyumba yachidikirilo, munaphunzira za zakudya?	Eya .....01 Ayi.....02	
C6	Kodi mwaphunzitsidwa za katsamaliridwe ka mwana wakhanda pamene munali ku nyumba ya chidikirilo?	Eya.....01 Ayi.....02	
C7	Kodi pamene munali ku nyumba yachidikirilo, munalangizidwa zamasewero olimbisa nthupi?	Eya .....01 Ayi.....02	Ngati ayi, pitani funso C9
C8	Kodi ndi masewero ati olimbisa nthupi omwe munapanga?	Kuponya mpira wamanja.....01 kuthamanga.....02 masewero ena.....98 (Tchulani)	
C9	Kodi pamene munali kunyumba yachidikirilo munalangizidwapo zakuyamwitsa mwana mwakathithi?	Eya .....01 Ayi.....02	
C10	Kodi amakulorani kukhala ndiokudikirirani pamene munali kunyumba yachidikirilo?	Eya .....01 Ayi.....02	
C11	Pamene munali kunyumba yachidikirilo, kodi anamwino kapena a dokotala amakupimani nthupi?	Eya .....01 Ayi.....02	Ngati ayi, pitani funso C13
C12	Amakuonani motani?	..... ..... (Tchulani)	
C13	Kodi pali zithu zina zomwe mwaphunzira kapena mwapindula pamene munali kunyumba yachidikirilo?	Eya.....01 Ayi.....02	Ngati ayi, pitani funso C17
C14	Ngati yankho lanu ndi eyi kufunso C15, ndi chiyani chomwe mwaphunzira kapena mwapindula pamene munali kunyumba yachidikirilo?	Ndili ndi mwana wamoyo.....01 Ndaphunzira kuchokera kwa azanga.....02 Zina..... 98 (Tchulani)	
C15	Kodi amuna anu analola kuti mubwere muzadikirile kuchipatala?	Eya .....01 Ayi.....02	

C16	Kodi ndinu okhutira ndikukhala kunyumba yachidikiliro, moti kutakhala ndi mimba ina muzabweranso kuzadikikira kuchipatala?	Eya .....01 Ayi.....02	Ngati ayi , pitani funso C20
C17	Ngati yankho lanu ndi eya ku funso C16, kodi ndi chiyani mwasangalalanacho?	Ogwira ntchito ndi amsangala.....01 Madandaulo anga amathandizidwa mwasanga.....02 Ndimapeza nthawi yopuma.....03 Zifukwa zina.....98 (Tchulani)	Duphani funso C18
C18	Ngati yankho lanu ndi ayi ku funso C16, kodi ndi chiyani chomwe sichinakukondweletseni?	Ogwira ntchito kunyumbayi ngamwano.....01 Ndimagokhala popanda adokotala mundipima nthupi.....02 Zifukwa zina.....98 (Tchulani)	
Gawo D: Zotsatira za amayi pobereka			
D1	Kodi mwachila kapena kubereka kuzera munjira yanji? (Onani mu buku kuti musimikize)	SVD .....01 C/S.....02 Breech delivery.....03 Vacuum delivery.....04	
D2	Kodi mwakumana ndi vuto pamene mumabereka? (Onani mu buku kuti musimikize)	Eya.....01 Ayi.....02	Ngati ayi , pitani funso D3
D3	Ngati yankho lanu ndi eya ku funso D2, kodi ndi mavuto anji omwe mwakumana nawo pobereka? Chongani mayankho ali musimu oyenelera (Onani mu buku kuti musimikize).		
	Kutaya magazi ambiri	Eya.....01 Ayi.....02	
	Njira kuchepa	Eya .....01 Ayi.....02	
	Kutenga nthawi yaitali asanabereke	Eya.....01 Ayi.....02	
	Kung'ambika kwachiberekelo	Eya .....01 Ayi.....02	
	Kung'ambika kwa njira ya abambo kufikira njira ya chimbuzi.	Eya.....01 Ayi.....02	
	Mavuto ena _____ (Tchulani)	Eya.....01 Ayi.....02	

D4	Kodi pamene maola awiri amatha amayi anali bwanji? (onani mu buku)	Anali bwino bwino.....01 Anali chikomokele.....02 atamwalira.....03 Zina.....98 (Tchulani)	
Gawo E: Zotsatira za mwana			
E1	Kodi Apgar ya mwana inali bwanji pakutha pa mphindi zisanu? (Onani mu buku kuti mutsimikize)	10/10.....01 7/10 to 9/10.....02 4/10 to 6/10.....03 ≤3/10.....04 0/10.....05	
E2	Kodi mwana anathandizidwa kuti ayambe kupuma bwino bwino?	Eya.....01 Ayi.....02	Ngati ayi , pitani funso E4
E3	Kodi mwana anapatsidwa chithandizo chili musimu pamene amathandizidwa kuti ayambe kupuma bwino bwino? Chongani moyenelera.		
	M'pweya owonjezera	Eya.....01 Ay.....02	
	Kupopedwa zoyamwira	Eya.....01 Ayi.....02	
	Mankhwala oteteza ku matenda	Eya.....01 Ayi.....02	
E4	Kodi pamene maola awiri amatha mwana anali bwanji?	Akudwala.....01 Anali bwino bwino.....02 atamwalira.....03	
Gawo F: Zaku wodi ya m'chikuta			
F1	Kodi munalandila mankhwala oteteza ku matenda (antibiotics)?	Eya.....01 Ayi.....02	Ngati ayi , pitani funso F3
F2	Kodi akulandila mankhwalawa chifukwa chani? (onani mubuku)	Kuteteza matenda posatila opaleshoni (C/S).....01 Akudwala matenda omwe amadza chifukwa chobereka (Postpartum sepsis).....02 Zifukwa zina.....98 (Tchulani)	
F3	Kodi a mayi ali bwanji pamene akutuluka m'chipatala muno?	Ali bwino bwino.....01 akudwalabe.....02 akuchila.....03 amwalira.....04	
F4	Kodi mwana amalandira mankhwala oteteza ku matenda (antibiotics)?	Eya.....01 Ayi.....02	Ngati ayi , pitani F5
F5	Kodi mwanayu akulandira mankhwalawa chifukwa chani? (onani mu buku kuti mutsimikize)	Chifukwa akudwala matenda a sepsis ya ana.....01	

		Kugofuna kuteteza chabe.....02 Zifukwa zina.....98 (Tchulani)	
F6	Kodi mwana ali bwanji pamene akutuluka m'chipatala kupita kwawo?	Akudwalabe.....01 Ali bwino bwino.....02 Akuchila.....03 wamwalira.....04	
F7	Kodi amayi akhalamo ku wodi ya m'chikuta nthawi yotalika bwanji?	<input type="checkbox"/>	
	Tsiku logonekedwa chipatala		
	Tsiku lochira/ kubereka		
	Tsiku lotuluka		

Zikomo chifukwa chotengapo mbali pakafukufukuyu

Mathero a mafunso

Appendix 3: COMREC certificate of approval



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.02/15/1692 – The use of maternity waiting home at Chiradzulu District Hospital by Mr. B. Kadzuwa

On 25 May 2015

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

Dr. C. Dзамalala- Vice-Chairperson (COMREC)

Approved by College of Medicine	25 MAY 2015
(COMREC) Research and Ethics Committee	

25/05/15

Date

Appendix 4: Participant information sheet

Dear participant,

My name is Blessings Ridson Kadzuwa, a registered nurse midwife and a postgraduate student pursuing Master of Science Degree in Community Health Nursing at Kamuzu College of Nursing, a constituent college of the University of Malawi. In partial fulfilment of the award of this degree, I am required to conduct a research project. The title of my research project is ‘The use of Maternity Waiting Home at Chiradzulu District Hospital, Southern Malawi.’ The aim of the study is to critically examine the use of maternity waiting home at Chiradzulu District Hospital.

You have been earmarked to participate in this study because you are one of the pregnant women, who have delivered at this facility (Chiradzulu District Hospital) and you had the potential to use or you have indeed used maternity waiting home. Maternity waiting home is a residential area within this facility (Chiradzulu District Hospital) where pregnant women are accommodated at the end of their pregnancies to wait for labour and delivery.

Your participation in this study is solely voluntary; there is no monetary benefit for participating in this study. However, the findings may help service providers, policy makers and other relevant stakeholders on how they can plan and improve maternity waiting homes in future. You are at liberty to freely choose whether to participate in this study or not without any form of coercion, and your refusal to participate in this study will not attract any punishment or loss of any benefit to which you are entitled. In case you have decided to withdraw your participation in this study at any time you are free to do so without being subjected to any form of punishment.

As a participant of this study you will be required to respond to questions that have been prepared specifically for this study, and I will be reading to you these questions one by one. I will also have access to your medical/hospital records which will help me to validate

some of the information that you will provide as well as helping me to have access to other information you might have forgotten.

If you consent to take part in this study, you will be required to sign a consent form and if you are unable to write, I am going to take your thumb print. The interview is expected to take less than an hour and the interview will take place in an environment that is quiet, safe, and secure in order to minimize disturbances.

I wish to assure you that there is no foreseeable physical harm associated with your participation in this study. However, in case of emotional or psychological discomfort with the wording of some questions, please forward your complaints to the researcher at Kamuzu College of Nursing.

Once you accept to participate in this study your names will not be used on the questionnaires, instead I will assign code number for easy identification of participants, and questionnaires will be kept at a safe and secure place that is accessible by the researchers only; and during dissemination of results no names of participants will be used.

The findings of this research study will be disseminated to service providers, policy makers and other relevant stakeholders at the hospital and a copy of the findings will be available at Chiradzulu District Hospital Library.

In case you have pertinent questions or concerns regarding this research study and your rights as a participant. Please, you are free to contact the following people:

The Chairperson, College of Medicine Research and Ethics Committee, P/Bag 360, Chichiri, Blantyre 3. Telephone: 01871911 or 01874700 or

Mr. Blessings Kadzuwa, Kamuzu College of Nursing, Private Bag 1, Lilongwe. Cell No: 0999 814 061 or 0888 914 061

Appendix 5: Consent form

Dear researcher,

I (Name),
have read (or someone has read to me) the participant information letter and I have fully understood the information contained therein and all my questions/concerns has been addressed. I understand that the information that I am going to give shall be kept confidential and will only be accessed by the researcher and/or those people who are directly concerned with the study. I also understand that I will not suffer any injury or harm during the research process and the information that I will give to the researcher shall not be used against me in future, and also I am at liberty to withdraw my participation any time, if need arise.
Therefore, I voluntarily agree to participate in this study.

.....
Signature of the participant Date

.....
Signature of the data collector Date

Appendix 6: Dongosolo la kafukufuku

Okondeka Amayi,

Dzina langa ndi Blessings Ridson Kadzuwa, ndine namwino komanso mzamba, panopa ndikuphunzira za ukadaulo wadzaomoyo pa sukulu ya ukachenjede ya Kamuzu. Pamaphunziro amenewa timayenera kupanga kafukufuku ngati mbali imodzi wokwaniritsila maphunzirowa. Ine ndikupanga kafukufuku wofuna kudziwa m'mene nyumba yoyembekezelamo amayi apakati kuchipatala pamene asanabeleke yomwe yimatchedwa kuti Matenite wetini homu ikugwirira ntchito yake pano pachipatala cha Chiradzulu pofuna kupititsa patsogolo n'yoyo ya amayi ndi makanda kuno ku Chiradzulu.

Inu mwasakhidwa kuti mutenge nawo mbali pakafukufuku ameneyu chifukwa mwachilira (kubeleka) kuno kuchipatala cha Chiradzulu, ndipo munalinso ndikuthekera kapenanso mwagwilitsako ntchito (kudikilira) nyumba imeneyi ya chidikiliro (matenite wetini homu).

Kutenga nawo mbali pa kafukufukuyu zitengera kuzipereka kwanu popanda kukakamizidwa ndi munthu wina aliyese. Ziwani kuti simudzapezapo cholowa monga ndalama mukatengapo mbali pakafukufukuyu. Ngakhale izi zili choncho, maganizo omwe mungapereke akhoza kuthandizira kupititsa patsogolo ntchito ya uchembere wabwino. Ziwaninso kuti muli ndi ufulu kukana kulowa mukafukufuku ameneyu, ndipo kukana kulowa kafukufukuyu sikubweretsa chilango china chilichonse kwa inu: ngakhale kutakana kulowa mukafukufukuyu uzalandira chithandizo chachipatala choyenerela molingana ndi mavuto a umoyo wanu.

Ngati mutavomera mwakufuna kwanu kulowa nawo kukafukufukuyu, muzayenera kuyakha mafunso omwe azidzawerengedwa kwa inu, komanso chinthandizo momwe mwalandira kuno kuchipatala.

Ngati mutalolera kulowa kafukufukuyu, muzapehedwanso kuti musaine pachikalata chili musimu ngati simumatha kusaina mudzayenera kudinda ndi chala chanu chamkomba phala. Cholinga ndi chakusayinira ndi kusimikizira mulowa kwanu mukafukufuku ameneyu. Mafunso omwe azidzawerengedwawa akuyembekezeka kuzatenga nthawi yosap'yola ola imudzi, ndipo malo amene tidzifutsana akhala abwino komanso okusungirani chinsinsi. Mukusimikiziridwa kuti palibe bvuto lina lililonse lomwe lingapezeke panthupi lanu chifukwa chakuti inu mwatenga nawo gawo pakafukufukuyu. Koma ngati mutaona kuti mafunso ena salibwino, musaope kunena kwa amene akuchititsa kafukufukuyu.

Mukuyeneranso kudziwa kuti mayankho anu adzasungidwa mwachinsinsi ndipo sizizadziwika kuti anayankha mafunsowa ndindani chifukwa mayina anu saziyikidwa pamapepala a mayankho m'malo mwake tizigwiritsa ntchito manambala. Mudziwenso kuti zotsatira za kafukufukuyu zizaperekedwa kwa anthu amene amapereka chithandizo pachipatala pano komanso kwa anthu ena okhuzidwa ndi kupereka chithandizo kuchipatala kuno. Zotsatirazi zidzapezekanso ku nyumba yowerengeramo yapachipatala chino cha Chiradzulu.

Ngati mungakhale ndi nkhawa ina iliyonse yokhuzana ndi kafukufuku khalani omasuka ndikubweretsa madandaulo anu kwa:

Wapapando, College of Medicine Research and Ethics Committee, P/Bag 360, Chichiri, Blantyre 3. Telephone: 01871911 or 01874700, Kapena

Mr. Blessings Kadzuwa, Kamuzu College of Nursing, P/Bag 1 Lilongwe. Cell no: 0888 914 061 ndi 0999 814 061.

Zikomo kwambiri

Appendix 7: Kalata yachivomerezo

Ine (Dzina),
Ndawerenga kapena andiwerengera tsatanetsatane wa ndondomeko yakafukufukuyu ndipo ndamvetsa bwino ndiponso mafunso ndi nkhawa dzanga zayakhidwa bwino. Ndamvetsanso kuti zomwe ndiyankhule kapena kupereka mukafukufukuyu zitsungidwa mwachinsinsi, ndinso palibe mulandira ndalama. Ndamvetsanso kuti palibe chiopsezo china chili chonse pa moyo wanga chobwera chifukwa ndalowa mukafukufukuyu, ndinso ndili ndi ufulu otuluka mukafukufukuyu nthawi iliyonse nditafuna kutero.

Pazifukwa izi, ndavomereza kwakufuna kwanga popanda kukakamizidwa kulowa kukafukufuku ameneyi.

.....

Sayini ya otengapo mbali

.....

Tsiku

.....

Sayini ya ochita kafukufuku

.....

Tsiku