

Matilda Anane

KNOWLEDGE, ATTITUDE AND PRACTICE AMONG HEALTHCARE WORKERS ON THE USE OF MISOPROSTOL IN THE TREATMENT OF INCOMPLETE ABORTION IN MALAWI

Master's thesis in MSc Global Health

Supervisor: Maria Lisa Odland

Co-supervisor: Bertha Chakhame

May 2023

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Norwegian University of
Science and Technology

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ABSTRACT

Introduction: Maternal health is imperilled by several risk factors which causes the untimely death of some women. Unsafe abortion which most times result in incomplete abortion is one of the challenges that endangers the health of women especially in low-income countries. This crisis can be subdued and prevented by the effective management of skilled Healthcare workers working in supportive environment. Even though there are existing methods (surgical, medical and curettage) that are employed for the management of incomplete abortion, not all these methods are feasible and effective in all settings. Surgical is mostly used in low-income countries, and manual evacuation is the preferred one. Curettage is still in use due to issues with broken equipment and lack of support from leadership. Medical (misoprostol) management of incomplete abortion is a safe recommended method, but not often used in this setting. Hence there is a need to stimulate a suitable and constructive method for the management of incomplete in a particular setting.

Objectives: This study aims to analyse healthcare workers' knowledge, attitude, and practice of healthcare workers on the use of misoprostol in the treatment of incomplete abortion in the first trimester.

Methods: A descriptive study with quantitative data collection was conducted in three district hospitals located in the central region of Malawi. In order to assess the knowledge, attitude, and practice of healthcare workers in the medical treatment for incomplete abortion, a KAP survey was used to gather the baseline (n=80) and endline (n=91) data. A training intervention was organized to train the healthcare workers on the medical treatment of incomplete abortion. The participants involved were 171 healthcare workers (clinical officers, midwives, nurses, and doctors) from three selected facilities. The accumulated data was analysed with SPSS.

Results: Data analysis and interpretation indicated that the healthcare workers were familiar with medical (misoprostol) treatment of incomplete abortion, and their level of knowledge in this treatment option was improved upon by the in-service training. The healthcare workers have built a positive attitude in the medical treatment of incomplete abortion, which would need to be sustained and their knowledge consistently upgraded. The results also showed that the participants are improving their practices in the treatment of incomplete abortion, especially in the provision of family planning services.

Conclusions: Healthcare workers would need their level of knowledge, attitude, and practice with medical (misoprostol) treatment of incomplete abortion further enhanced. This implies that the management of healthcare facilities must prioritise continuing education and provide access to diverse educational resources to facilitate the services they provide.

Keywords: Misoprostol, Incomplete abortion, Healthcare workers, Malawi

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LIST OF ABBREVIATIONS

KAP	Knowledge, Attitude and Practice
MDHS	Malawi Demographic and Health Survey
WHO	World Health Organisation
D&C	Dilation and Curettage
MVA	Manual Vacuum Aspiration
HCW	Healthcare Workers
HCP	Healthcare Providers
NCD	Non-Communicable Diseases
SDGs	Sustainable Development Goals
PAC	Post Abortion Care
LMIC	Low- and middle-income countries
AMTSL	Active management of third stage labour

OPERATIONAL DEFINITIONS

Current use of misoprostol: The current use of misoprostol here is how misoprostol was employed in the treatment of incomplete abortion by the healthcare workers after the training intervention.

Healthcare workers: they include midwives, nurses, doctors, clinical officers, and interns.

CHAPTER ONE

INTRODUCTION

1.1 Background

Incomplete abortion is one of the maternal health challenges in low-income countries, that usually result from unsafe abortion predominantly due to restrictive abortion laws. To curb this challenge and to improve maternal health, methods such as, expectant, medical, and surgical procedures have been introduced as a means of treatment. Medical treatment (the use of misoprostol) has been demonstrated to be a safe and effective treatment option for incomplete abortion, still, the knowledge, attitude, and practice (KAP) of healthcare workers in its use can significantly impact on patient outcomes. Hence this study aimed to analyse the KAP of healthcare providers in the use of misoprostol for the treatment of incomplete abortion during the first trimester. The context for this study is the central region in Malawi (two district and one central hospital were included).

The basis of this research is on understanding the current use of misoprostol and how healthcare providers perceive and practice its use in treating abortion complications. The findings can help improve the quality of care provided to patients seeking treatment for incomplete abortion, especially in low-resource settings where access to trained healthcare workers may be limited and enhance maternal healthcare.

1.2 Maternal Health Care in Malawi

Malawi's economic instability poses a great challenge to its health care, which in turn impairs maternal health service delivery. The utilisation of maternal health care services is a challenge to most women during pregnancy, childbirth, and post-natal period. Report from the 2010 Malawi Demographic and health survey (MDHS) (1) shows that out of the 23,020 women between the ages of 15 and 49 years who partook in the survey; only 46% had at least four antenatal care visits during pregnancy. A total of 57.3% were reported to have been delivered in public health care facilities, and only 43% had a postnatal check-up within 48 hours after delivery.

This implies that there will be an increase in women's vulnerability to experiencing bad health outcomes because of the low usage of maternal health care services. The availability of health personnel to attend to the health needs of women, infrastructure developments to meet basic

maternal health care, education and wealth, among others, are some of the fledging maternal needs in Malawi(2).

Abortion is one of the lingering issues in maternal health. A study(3) estimated that, approximately 67,300 induced abortions occur annually in Malawi with an induced abortion rate of 23 per 1000 women of reproductive age 15-49years. In Malawi, abortion is illegal thus access to safe abortion is restricted; it is only to save a woman's life, and obtaining it for other reasons is punishable by law (4). Stigmatisation of Furtive\clandestine abortions can lead to women delaying or avoiding seeking medical care resulting in different complications (4, 5). Malawi is noted to have one of the highest treatment rates for abortion complications in the world, putting a great strain on the public health system (6). As a result of the high maternal mortality ratio in Malawi, there have been attempts to legalize abortion. Still, recent efforts have failed as the Malawian parliament unanimously rejected a proposed bill in early 2021 (7).

A review (8) of nine Malawian health facilities found that abortion complications accounted for 7.0% of maternal deaths. Other research found that abortion complications accounted for 68.7% of all gynaecologic admissions in 1994 and was also responsible for 23.5% of maternal deaths in 1999-2000 (9). A study (10) conducted on the severity of abortion complications in Malawi revealed that, out of the 2,546 women, 87.6% (1,8,11) had an incomplete abortion constituting more than 60% of the abortion complications studied. In addition, approximately 29,500 women receive care for induced and spontaneous abortions in health facilities each year. All these factors point to the fact that abortion and its complications are an obstruction to obtaining a stable maternal health condition in Malawi.

1.3 Abortion (Incomplete abortion and its treatment)

Abortion may be defined as the loss of a pregnancy before the foetus/foetuses are potentially capable of life independent of the mother. According to USA and Britain, the legal definition of abortion is, the loss of pregnancy before twenty eight weeks gestation (11). It can also be put as a simple health care intervention to end pregnancy that can be effectively managed by a wide range of health-care workers using medication or surgical procedures. Most abortions hinge on unintended pregnancies, for various reasons women terminate pregnancies and these include, financial constraints, unreadiness to take care of a child/another child, relationship problems,

issues of single parenthood, immature to raise a child, rape and incest, religious/spiritual beliefs, and many others (12).

Highly restricted laws, and difficulty in accessing safe abortion has led many females to undertake unsafe abortions. Research (13) shows that unsafe abortion endangers women mostly in developing countries. In sub-Saharan Africa abortion is riskier than other regions in the world, thus the resulting incidence of abortion from 2010-2014 is 6.2 million per year (14). Unsafe abortion is defined as the termination of unintended pregnancy by persons lacking the necessary skill or in an environment lacking the minimum medical standards or both (15). WHO states that most abortion related deaths occur in sub-Saharan Africa (about 36,000) and South Central Asia (about 28,400) (16). The extent to which abortion and its related issues are deteriorating maternal health is devastating in sub-Saharan African countries. An instance is in a University teaching hospital in Zambia where it is recorded that for every abortion that is performed legally, nine incomplete abortions are being treated (17). Physical health risks associated with unsafe abortion include incomplete abortion, haemorrhage, infection, uterine perforation and damage to the genital tract and internal organs.

An incomplete abortion is defined by WHO as the clinical presentation of an open cervical os and bleeding where all products of conception have not been expelled from the estimated duration of pregnancy (18). Vaginal bleeding and consistent pain are common traits of incomplete abortion.

Incomplete abortion is a major complication of induced abortion which can be treated expectantly, medically, or surgically. For incomplete abortion at less than 14 weeks WHO recommends either vacuum aspiration or medical management with misoprostol (19). Medical abortions that occur in the first 12 weeks of pregnancy can partly or wholly be self-managed by the pregnant person safely outside a health care facility. This requires the individual to have quality medicine, accurate information, and support from a trained health-care worker (WHO). Medical evacuation is not commonly used in Malawi as compared to the other options (20). Surgical evacuation can be carried out by vacuum aspiration or curettage (D&C). Curettage requires general anaesthesia, an operating theatre, and a medical doctor/clinical officer (21).

In southern Malawi, reports show that, Manual Vacuum Aspiration (MVA) is one of the most promoted treatments for incomplete abortion, because of the fewer complications associated with

the procedure. In a study (21), Mangochi district hospital in 2015 treated between 80 -90% of all first trimester abortions with MVA and experienced a decline in hospital-based maternal mortality. WHO guidelines and a Cochrane library review (22) concluded that vacuum aspiration is the preferred surgical method for uterine evacuation after an incomplete abortion. Comparing manual vacuum aspiration to dilation and curettage, the former is faster, less painful, and comes with less blood loss and fewer complications (21). Broken equipment and lack of support are the main reasons for the low usage of MVA. Fear of drug misuse, inadequate knowledge, little or no confidence in the utilization of misoprostol and loss to follow-up are some of the contributing factors to the frequent use of D&C for the treatment of incomplete abortion in Malawi (6, 21)

Medical treatment of incomplete abortion is gradually gaining ground and more research is being conducted to assess its level of efficacy. In using misoprostol to manage incomplete abortion, the best regime and dosage is still elaborated and studied on for each trimester. Despite this there has been a record of some success stories in studies that conducted experiments on misoprostol with different sample sizes (23-26).

The use of Manual Vacuum Aspiration for the treatment of incomplete abortion for the past years has been effective but not feasible in all settings, especially in low resource or developing countries that do not have adequate skilled health personnel and requisite instruments for this process. In some medical facilities in Malawi (27) the use of MVA has declined because of unreliable supply of equipment, lack of motivation, and prioritisation. In addition to this there was a struggle to maintain skills of HCW adopting MVA as a treatment option for incomplete abortion. Considering these factors there is a need for the adoption and sustenance of innovations that are feasible in LMIC for the treatment of incomplete abortion. Thus, raising the question: do we continue to stay aloof and record the lives of women lost in the process of abortion and its complications or promote the use of a simpler and more accessible method that carry similar results?

1.4 Stigmatisation of Abortion

Abortion stigma affects women who have gone through the process of abortion and can also be extended to other groups. Stigma has been identified as a potential risk factor to the well-being of those who have had abortion but not much studies have been conducted in this area (28). It can be classified as, early, or late abortion, spontaneous or induced, threatened or inevitable,

incomplete, or complete, missed, recurrent or habitual, and Septic abortion (29). Abortion can be safe or unsafe depending on the environment where the activity is conducted, the person performing it, and the laws governing the performance of abortion in a particular country (30). According to WHO, almost half of all pregnancies(121million) each year are unintended. Six out of 10 pregnancies are unintended and 3 out of 10 pregnancies end in induced abortion (WHO 2022). Global estimates from 2010-2014 show that 45% of all induced abortions are unsafe. Unfortunately, about 97% of these unsafe abortion hinges on the scope of developing countries. Most of these developing countries have restrictive abortion laws (31) which limit accessibility to safe abortion. The criminalisation of abortion, religious belief, stigma, high cost, and attitudes of health care workers are some of the hindrances to accessing safe and respectful abortion.

Research shows that women who have gone through the process of abortion received certain level of marginalisation and social humiliation (32). Abortion has been stigmatised for several reasons, which includes legal restrictions, attributing personhood to the foetus, religious status\faith, and the notion that it violates the feminine ideals of womanhood (nurturing motherhood and sexual purity). Certain people are of the view that sex is not for pleasure for a woman, but women should have sex only if they want to give birth (33). The Cambridge dictionary defines stigmatisation as the act of treating someone or something unfairly by publicly disapproving of them. Some healthcare workers (HCW) end up stigmatising patients who come to them to receive this service. Abortion is somehow considered as a ‘social problem’ by certain individuals. This is in the sense that, the unintended pregnancy could be because of the irresponsibility or failure of the woman or young woman to take in the necessary preventive measures such as contraceptives or poor self-awareness. The neglect of these lead them to have abortion, as others may not be ready or prepared to assume the responsibility of parenthood. In a study (34) that was conducted among some obstetricians and gynaecologists in Italy and Spain some of these medical practitioners classified the termination of an unintended pregnancy as a social problem and a woman’s failure. Some of the HCW did not understand why a woman could end up with an unintended pregnancy in an era where information and sex education are within reach. Abortion is not only projected as a bad decision or choice compared to the use of contraceptives, but also considered a moral failure. People who go through abortion or have the intention to do so receive judgmental behaviours, are downgraded and seen as bad or unreasonable. The feeling of guilt and shame is another aspect of stigmatisation which open

some women on to emotional and psychological difficulties. This situation hinders them from seeking social support. Women who intend to keep the rule of secrecy, say nothing or very little about their abortion and reproductive history, which can lead to repeated forms of self-induced abortion.

Patients are not the only ones who go through this dilemma, some physicians and abortion clinic go through the experience of being called names as ‘murderers’ because of their decision to give abortion care to limit the issue of unsafe abortion. Their job is socially tainted as ‘a dirty job or dirty work’ that no one wants to do. They are marginalized and mistreated also by the media (34) by naming them; ‘aborters’ whilst others have to deal with the negative perceptions from patients, family, friends and strangers concerning their work (35).

Stigmatisation can also be prevalent in health care spaces, especially in places where there is provision of abortion services. This transpires among professionals, patients and physicians working in the healthcare setting. Individuals who go through the experience of stigmatization in a healthcare setting might not be open and share certain necessary medical information about relevant behaviour, conditions or symptoms and stigmatized identities. Stigmatized patients’ decisions on their future health care and where to seek care will be impacted (36).

In the quest to deal or cope with stigmatization, some women report on using personal resilience, impression management, the rule of secrecy and depending on social networks to counteract stigmatization effects (36). Physicians who provide abortion services combat and change stigmatization effects through the efforts of reshaping their attention on some aspects of their work than others, reframing the issue of abortion and refocusing on admirable features of their job.

1.5 The use of misoprostol

Misoprostol is a reproductive health drug that was developed in the 1970s and introduced as a therapy for gastric ulcers. It has a chemical composition of 15-deoxy-16-hydroxy-16-methyl PGE1 which is a stable, synthetic form of prostaglandin E1 analogue. Its anti-secretory and mucosal protective characteristics made it suitable for the prevention of nonsteroidal anti-inflammatory drugs (NSAIDS)-induced peptic ulcers but have been limited and is now used more widely for ‘off-label’ indications in obstetrics and gynaecology due to its effectiveness (37). Following several pieces of evidence, misoprostol has been tested to be useful in treating

different reproductive health conditions categorized under the following: a). uterine evacuation b). abortion induction c). labour and delivery (38, 39).

Its stability at room temperature and cost-effectiveness make it more suitable as an affordable method for treating and preventing postpartum haemorrhage in middle and low-income countries (40). Misoprostol can easily be administered vaginally, buccally, rectally, orally, and sublingually with different doses. Its absorption rate changes considering the type of route used.

World Health Organization recommends (19) that incomplete abortion may be managed expectantly, medically, or surgically (vacuum aspiration). With the medical management of incomplete abortion at less than 14 weeks uterine size; 600ug misoprostol administered orally or 400ug misoprostol administered sublingually has been suggested. On the contrary, for medical management of incomplete abortion at more than 14 weeks uterine size; 400ug misoprostol is administered sublingually, vaginally, or buccally every 3 hours. However, the decision concerning the mode of management of incomplete abortion should be based on the individual's clinical condition and choice of treatment (19).

Other studies report that the abortive nature of misoprostol is being misused by thousands of women in many countries, especially Brazil and is high in the second trimester (41) .

Studies on misoprostol report that, vaginal administration of misoprostol alone is more effective in inducing abortion in the second trimester as compared to administering it alone orally (23, 42). Another study review indicates that oral administration of misoprostol appears to be safer than vaginal administration (39).

Misoprostol, although beneficial to reproductive health, has other negative effects. Depending on the dose given, misoprostol's common adverse effects include vomiting, nausea, abdominal pain, chills, fever, and shivering. Unlike other prostaglandins, misoprostol does not cause myocardial infarction and bronchospasm. Mobius syndrome (congenital facial paralysis) in infants is reported to be a defect of an unsuccessful attempt to induce abortion in the first trimester using misoprostol (42). Diarrhoea is known to be a side effect of misoprostol when it was used as a prevention of gastric ulcers. Studies indicate that first-trimester medical abortions using a combined regimen of mifepristone and misoprostol are licensed for many countries and are mostly successful (43) .

Misoprostol can singularly be used for medical abortion with varying effectiveness. Due to this characteristic, pregnant women are cautioned not to take it. It has been recommended that misoprostol can be used as an alternative for preventing and treating excessive blood loss in the absence of Active Management of the Third Stage of Labour (AMTSL). This is as a result of its ability to make the womb contract strongly after birth (44, 45). A trial conducted indicates that, the combination of mifepristone plus misoprostol is more effective than misoprostol alone in the management of missed miscarriage (46). The use of the option of, (medical management of abortion) misoprostol can be affected by its availability and the experience or expertise of the health-care worker. Doctors in Armenia mentioned that the most common medications (misoprostol and mifepristone) used for abortion are not readily available and sold at the black market. About one third of the participants had experience in using misoprostol alone for abortion whilst gynaecologists had more experience in using dilatation and curettage or electric vacuum aspiration (47).

In an era that tele medicine is spreading and being introduced in some countries, the home use of misoprostol has become a common practice in countries where abortion is legal (48-50). Domestic use of misoprostol has been established to be safe (51). Considering the emotional ordeal (bleeding in buses, fainting in a taxi), social embarrassment, travelling back and forth to complete the abortion process, comfortability in managing pain at home, and complications that women in rural areas go through, the government of the UK has passed the policy of home medical (misoprostol) abortion. The patients are now given the option to choose either to take the prescribed misoprostol home or remain at the clinic. This policy so far is going on well without any reported complications of the home use of misoprostol (52). A study on expanding a woman's options to include home use of misoprostol for medical abortion up until 76 days gestational period indicated its safety and effectiveness. It's also reported that the rate of home-based medical abortion increased with no increase in medical complications on the day of misoprostol use (53). In a Ugandan study, some health care providers (HCP) perceived misoprostol as very safe if used by a skilled HCP for 2nd trimester PAC on a clinically stable patient while being monitored in a health facility setting. A few mentioned that misoprostol appears to work better in 2nd trimester compared to the first trimester and was surprised at how effective it was and have grown confident in its use (54). Considering the benefits of medical treatment for incomplete abortion, in line with the decline in the use of MVA and other treatment

methods in LMIC we suggest that the way forward to effectively manage incomplete abortion in the first trimester is misoprostol.

1.6 Country Context

Malawi is a sub-Saharan African country situated in the South-eastern part of Africa which gained independence from the United Kingdom in 1964. It is a landlocked country that shares borders with Zambia, Tanzania, and Mozambique. It has an estimated population of 19.65 million (2021) and is divided into three regions (southern, central, and northern), with its capital being Lilongwe in the central region. Malawi is a low-income country whose economy mainly depends on agriculture which employs a most of the population (55). Despite the nation's attempt to sustain its economic growth with relevant economic and structural reforms, it is exposed to domestic and external shocks. According to the world bank report (2022), Malawi has enjoyed a peaceful environment and a stable government since independence in 1964. It has a population density of 203per km² (526 people per m²) with a total land area of 94, 280km² (36,402 miles²).

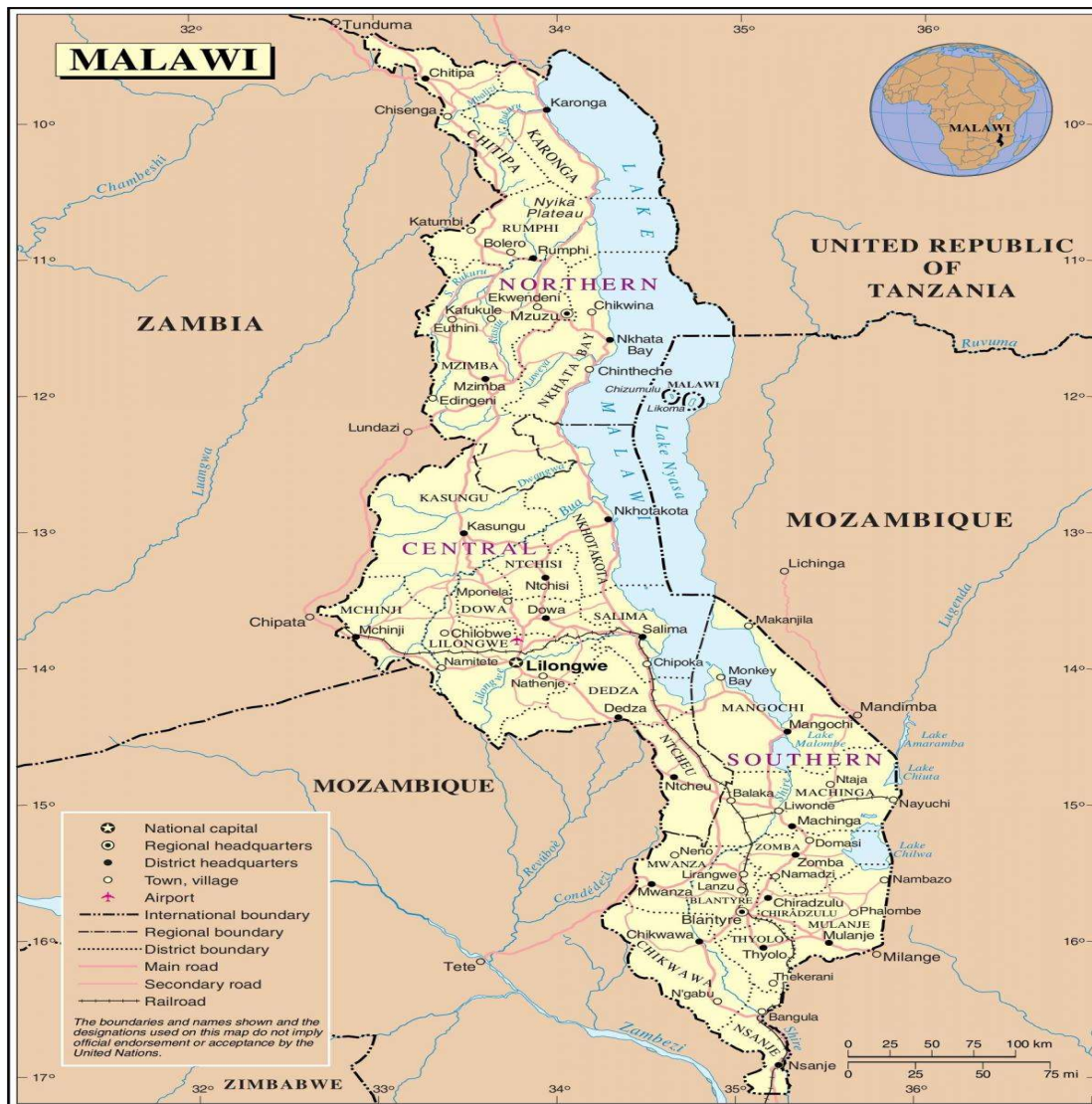


Figure 1 The map of Malawi

Malawi’s health care delivery system mainly consists of government facilities (63%), Christian Health Association of Malawi (26%) and private organizations for-profit providers. The country has one of the highest population densities in sub-Saharan Africa, with a fertility rate of 4.4. According to WHO, non-communicable diseases (NCD) are on the increase as maternal mortality remains among the highest in Africa. Reports illustrate obstetric complications as a significant contributor to maternal deaths. Poor referral system, lack of appropriate drugs, medical devices and staff capacity are some of the secondary causes of maternal deaths in Malawi (WHO 2018).

Health care in Malawi is operated on the referral system. Thus, when a problem is not effectively solved at the rural hospital or a health centre, it is referred to a district hospital situated in each of the districts in the country. Further referrals are made to central hospitals if health issues are not resolved adequately at this level. Among the top five causes of death in Malawi include HIV/AIDS, malaria, lower respiratory infections, diarrhoea diseases and prenatal conditions (56). The limited number of healthcare workers is one of the main challenges in the country's health system. District hospitals offer outpatient and inpatient services, surgical procedures such as, caesarean sections, herniorrhaphy and others.

1.7 Research Question

A research question serves as the foundation for a study and directs what methodology should be involved. A focused or well-framed research question heads you into the study hypotheses and gives you a clue about the study's relevance or purpose (57). The particular problem a researcher seeks to solve, and the area of knowledge he/she wants to update can be relayed/communicated through the research question(58).

In this study, these questions were to be addressed or what we intended to know/explore knowledge on were:

- a. *What is the recent use of Misoprostol among healthcare workers in treating incomplete abortion?*
- b. *What is the level of Knowledge, Attitudes and Practice of healthcare workers on the use of Misoprostol?*

1.8 Aims and Objectives

The purpose of every research is conveyed by the aim backing the research whilst the objectives are the clear-cut actions\steps to tackle to achieve the desired aim. Considering this, the aim of this study is *to analyse the Knowledge, Attitude and Practice of Healthcare workers on the use of misoprostol in the treatment of incomplete abortion*. Majority of low-income countries have restrictive abortion laws which leads to an increasing number of women reporting to health centres with issues of incomplete abortion usually initiated with unsafe methods and places (59, 60).

An increasing group of evidence has illustrated that there can be inexpensive innovation (medical treatment) that can also be adopted to effectively manage incomplete abortion with less or no complications (61-63). In view of this, it is proposed that misoprostol may represent an effective solution for addressing the issue of incomplete abortion during the first trimester. The existing evidence suggests that misoprostol is a safe and reliable medication for managing incomplete abortion; However, additional research is required to facilitate the acquisition of necessary skills by healthcare providers to accurately implement this method. Effective approaches and techniques need to be identified to guide and support healthcare workers in adopting this method with precision. Moreover, optimal training methods and educational resources need to be determined to ensure the successful implementation of this approach.

To

achieve this aim, the following actions were taken.

- collecting data through the cognizance of health service providers, noting their inputs on the Knowledge, Attitude and Practice (KAP) survey

- Proper training as a means of intervention given to the healthcare workers on the medical treatment of incomplete abortion

- the gathered data were extensively analysed, assessed, and evaluated of their Knowledge, Attitude, and Practice on the medical management of incomplete abortion.

- Recommendation was given concerning the treatment of incomplete abortion.

1.9 Significance of study

Maternal health is threatened across the world as it encounters certain setbacks. A recent report from the United Nations Agencies states that in every two minutes, a woman dies due to pregnancy or childbirth. This challenge continues to dominate in poverty and conflict-stricken countries. One of the contributing factors to this problem is abortion and its complications (WHO 2023).

This study seeks to contribute to the numerous steps being taking to curtail the situation. Health professionals are integral to slacken this challenge, hence their perspective on treating

incomplete abortion will be collected to assist us in helping them develop adequate skill and knowledge in treating incomplete abortion. The training intervention that constituted this research was designed to enable health professionals to build on their competence in treating incomplete abortion with a safer and more feasible method. Recognition of the barriers to the medical management of incomplete abortion will ease the creation or shaping of interventions to meet the right pitfalls.

The results of this study will assist public health policymakers in setting the right programs and interventions to promote the management of incomplete abortion. Withdrawing the blockades/boundaries to the management of incomplete abortion(medical) is key to reaching Sustainable Development Goal Three (SDG 3: Ensure healthy lives and promote wellbeing for all at all ages). The first indicator for this goal is to reduce maternal mortality (<https://sdg-tracker.org/good-health#3.1>) , which this study seeks to contribute to.

CHAPTER TWO

METHOD AND MATERIALS

2.1 Study setting\area.

This study was conducted in the central region of Malawi with three district hospitals as the study sites: Bwaila hospital, Salima district hospital and Mchinji district hospital. Malawi is one of the African countries whose health care service has had several challenges and is still striving to address numerous health problems with its limited resources. Malawi's health care delivery system is categorized into four levels, community, primary, secondary, and tertiary care respectively (64). Service at the community level is given through health surveillance assistants, clinics, and health centres deliver primary care through nurses, midwives, and medical assistants. Secondary and tertiary care services are dispensed by district and central hospitals respectively (64). This study constitutes district hospitals in the central region. The central region is where the capital (Lilongwe) of Malawi is located, and it comprises of 9 district hospitals.



Figure 2: Google map of the central region of Malawi

2.1.1 Bwaila Hospital

This is situated in the capital and the economic centre of Malawi; Lilongwe with a population of about, 26,26901. Bwaila is a referral maternal government hospital which provides secondary level obstetric services for health centres in Lilongwe. Bwaila is a teaching hospital for clinical officers, doctors, nurses, and midwives in Malawi. This facility has approximately 17,000

deliveries every year, including taking care of low and high-risk patients. It provides both basic and special obstetric care.



Figure 3: Google map location of Bwaila hospital in Malawi

2.1.2 Salima District Hospital

This medical facility is in Salima district whose population is over 340,000, with the district hospital serving about 70,731 people. Salima covers an area of 2196km square and a population density of 156per km square. Health professionals at the hospital include doctors’ clinical officers, nurses-midwives, anaesthetic technicians, and laboratory technicians. Approximately 17,149 deliveries are expected in a year in the district (65).



Figure 4: Google map location of Salima District hospital in Malawi

2.1.3 Mchinji District Hospital

Mchinji hospital is also in the central region of Malawi. This hospital is a referral and secondary health facility that provides maternal and prenatal health care (66).



Figure 5: Google map location of Mchinji District hospital

2.2 Study Design

This is a descriptive study with quantitative data collection. The data was cumulated from three district hospitals located in the central part of Malawi. This study gathered data through a Knowledge, Attitude and Practice (KAP) survey which aimed to assess the knowledge, attitude, and practice in the treatment of incomplete abortion and improve upon it through an in-service training. The data was gathered in two stages: the baseline and the endline data. The baseline data was collected through a KAP survey before the intervention at each facility. The intervention which was an in-service training on post abortion care was provided for the health workers after gathering the baseline data. The endline data was gathered through a KAP survey

after the intervention was implemented for a year. Each of the participants at the three hospitals answered a questionnaire that recorded information about the study sites, demographic data and their job experiences, knowledge, and practice. An in-service training was conducted as an intervention in July 2020. One session of training took place at each of the district hospitals selected. This thesis will be based on the existing data collected through the local supervisor.

2.3 Study Population

The participants in this study are all healthcare workers working in the gynaecological wards from the selected facilities (Bwaila district hospital, Salima district hospital and Mchinji district hospital). The Healthcare workers, physicians (doctors and clinical officers), nurses and midwives were the sample for this study. One hundred and seventy-one (171) participants in total were recruited and gave their consent to take part in the study. Eighty (80) of them were included in the baseline and a total of ninety-one (91) were in the endline. Eighty (80) healthcare workers of the three intervention sites were trained in the use of misoprostol in post-abortion care after the baseline data. Out of the 80 healthcare workers, 28 were clinical officers, 47 were nurses-midwives, and 6 were doctors. Ninety-one participants were involved in the endline data. They consisted of trained and untrained staff who were working in the gynaecological wards at the time of evaluation. Most of the participants in the baseline data who partook in the training were present for the endline data collection.

Table 1: study population at the various settings for baseline and endline data

FACILITY	BASELINE	ENDLINE	TOTAL
Bwaila	14	20	34
Salima	39	41	80
Mchinji	27	30	57
Total	80	91	171

2.4 Knowledge, Attitude and Practice (KAP) Survey

The KAP survey is a questionnaire that was focused on assessing the knowledge, attitudes and practices about PAC and misoprostol. Before the training commenced, the healthcare workers completed the questionnaire (KAP survey) at each of the three facilities. It consisted of eight (8) questions on knowledge, four (4) on attitude and five (5) on practice. Information on the social demographic background of the participants was also obtained. The survey followed WHO guidelines for KAP questionnaire but was centred on the treatment of incomplete abortion and

the use of misoprostol. After the intervention was implemented for a year, the participants completed a questionnaire (KAP survey) to assess the changes in the knowledge, attitude, and practice on the treatment of incomplete abortion and misoprostol. This formed the endline data.

2.5 Intervention

An in-service training was the intervention employed in this study. The intervention aimed to train the health care workers on the use of misoprostol in post abortion care at the three selected facilities. The training was facilitated by a local consultant in gynaecology, together with the research team. Each session of the training lasted for three hours and targeted physicians and nurses-midwives who were involved in the management of women with first trimester incomplete abortions.

Healthcare workers were informed at the beginning of the intervention on how to examine the patient to know if medical treatment is appropriate. Any patient with an incomplete abortion and in the first trimester or who had expelled the foetus and was experiencing minor bleeding was given three tablets of misoprostol (600 mcg) orally or two tablets (400 mcg) sublingually. Administration of paracetamol or ibuprofen was the means of pain relief.

Any woman with an incomplete abortion and a uterine size of less than twelve weeks' gestation by examination, was given three tablets of misoprostol (600mcg) orally or two tablets (400mcg) sublingually. The women were given prophylactic antibiotic prescription: metronidazole 400mg every eight hours for five days. Pertaining to the period of observation, women who lived far away from the study sites were offered a hospital stay for some hours to look out for drug effect. They were discharged if no sign of heavy bleeding and/or the retained products had been expelled. Surgical evacuation was performed on those with severe bleeding and observed till they were stable. While women with minor bleeding and stayed close to the hospital were treated as outpatients. Instructions were given to the women to return to the hospital if they experienced any complications and signs of infection (fever, chills, and offensive vaginal discharge). All the participants were scheduled for a clinical check-up a week after to ensure the uterus was empty. Family planning counselling sessions were organized for the women.

Phases of Data collection at the health facilities.

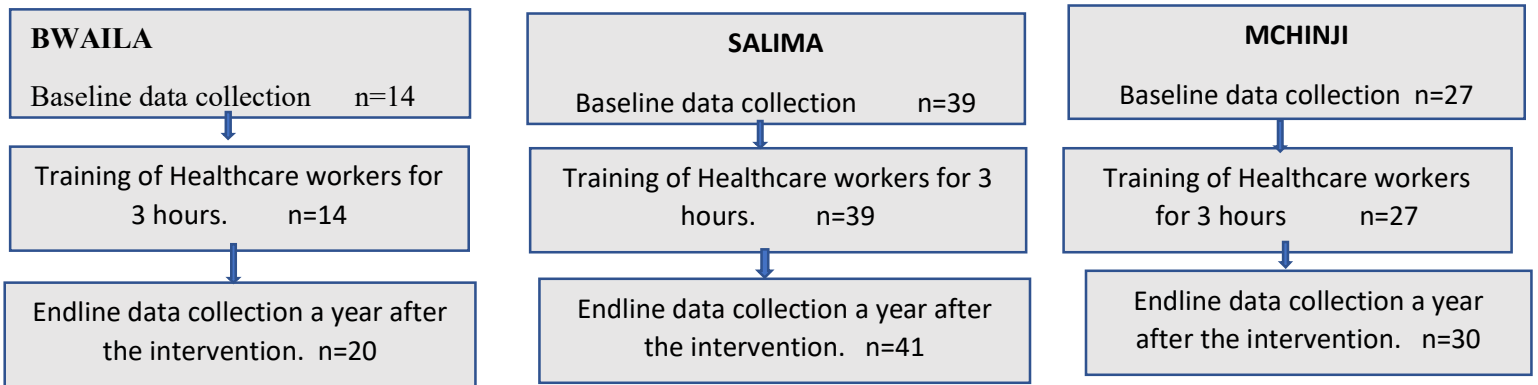


Figure 6: Phase of data collection at the health facilities

2.6 Statistical Analysis

The data analysis process involved descriptive analysis of the data collected from three health facilities in the central region of Malawi and accessing the correlation effect of the various variables of interest. All the analysis was done with the Statistical package for the social sciences (SPSS) 22.

The descriptive statistics of interest in this study were the percentages with their confidence intervals. The descriptive statistics of interest in this study were the percentages with their confidence intervals. The descriptive used include the arithmetic means and standard deviations (SDs). The arithmetic means were provided with a 95% confidence interval I(CI).

One-sample t-tests and paired-sample t-tests were performed to test hypothesis in the study. The significance level (the specific value that guides our significant decisions) chosen was 0.05. With significant sample sizes, a one-sample t-test and paired sample test was performed to ascertain the effects in the study. The one-sample t-test was used to ascertain the significance of the proportion estimates. Assuming a null of an insignificant proportion estimate, the one-sample t-test estimates a p-value (a value that helps us to decide whether to accept our null hypothesis or reject it in favour of the null hypothesis) and that is used to test if the estimated proportion is significant (67, 68). The one-sample t-test estimates a p-value (a value that helps us to decide whether to accept our null hypothesis or reject it in favour of the null hypothesis)(69) .

A paired sample t-test was also conducted to test if there was a significant effect of the interventions (before and after the interventions were made). This test was chosen over the two

independent sample t-tests because we assume the data were correlated since they were collected on the same individuals (69). We also decided whether to choose the paired sample t-test which is a parametric test over the WILCOXON MATCHEDPAIRS SIGNED-RANK TEST which is a non-parametric test by checking if the difference are normally distributed, significant sample sizes and the responses were not ordinal (69). The paired t-test measures the difference in the mean of two samples and ascertains if they are significant based on the p-value.

2.7 Ethical Approval, Consent and Confidentiality

The data gathered for this research was undertaken following the ethical principles for medical research involving human participants of the declaration of Helsinki by the World Medical Association (70). To ensure that proper ethical consideration is sustained in this study The College of Medicine Research and Ethics Committee in Malawi and the Regional Committee for Medical and Health Research Ethics in Norway were sought for ethical approval.

Participants involved in the study were given a letter prior to the data collection to explain the purpose of the study. They were assured of anonymity and confidentiality of the information given. The right of participants to withdraw from the study when they decide to leave, was clearly explained, and understood.

Anyone who partook in the study was made to read, understand and sign a consent before data was collected.

CHAPTER 3

RESULTS

3.1 General Characteristics of the Health Care Workers

Overall, 171 professionals were interviewed, 80 before intervention and 91 at endline: 7.5% were doctors, 26.3% were clinical officers, 5.0% were interns and 57.5% were nurses/midwives. Majority of the health care workers (40% of the professionals) had an experience of over 5 years, whilst 29.4% and 30.6% of the professionals had an experience of less than one year and 1 to 5 years respectively in post-abortion care. Almost all the professionals in the healthcare facilities who participated in post-abortion care were involved. A few professionals were unavailable at the time of data collection and were not able to participate; however, none of those who were present refused to participate. The number of interviews in the different institutions varied because some hospitals have more healthcare professionals rotating in the gynaecological ward than the other'.

KNOWLEDGE, ATTITUDE AND PRACTICE

3.2 Knowledge

The data collection method from the health personnel was in two sessions; a questionnaire was answered before a training intervention. After the training intervention, they responded to the survey to examine if any changes occurred because of the intervention. From the Knowledge, Attitude and Practice questionnaire, 92.5% (95% CI, 86.6-98.4) heard about medical treatment of incomplete abortions. There was an insignificant increase to 96 % (95% CI, 93.6-99.2) of the participants who had heard about medical treatment for incomplete abortion after the intervention.

The source of their knowledge on medical treatment of incomplete abortion varied, from the baseline; 38.6% of them had it on the job from their colleagues, and 22.6 %obtained it from school (formal education). There was a significant change after the intervention; thus, 23.6% heard it from school, while 48.4% got it on the job from their colleagues. The healthcare workers were informed about the common complications associated with incomplete abortion for both the base and endline data. Participants who choose sepsis, haemorrhage, and shock as the common complications of incomplete abortion for the baseline and endline data were 98.7% and 96.7% respectively.

When asked about the recommended management of incomplete abortion in the 1st trimester for the baseline data, 93.5% answered MVA, 4.3% responded to medical (drug use) while 3.2% chose D&C. The change after the intervention includes 85.7% to MVA, 9% to medical and 2.8% to D&C.

There was not a significant difference in the dose of misoprostol chosen by the participants before and after the intervention. More than half of the participants; 62.5% (95% CI 51.6-73.3), choose, a single dose of misoprostol 600 mcg orally or a single dose of misoprostol 400 mcg sublingually as the medication, dosage and route of administration for the management of incomplete abortion within the first trimester; after the intervention, there was an increase to 72.3% (95% CI; 65.5-79.1); 15% opted for Single dose mifepristone 200 mg orally or Cytotec 800 mcg per-vaginal every 4 hours. The change was not significant.

With regards to the availability of the drug, 55% (95% CI, 43.8-66.1) mentioned that misoprostol is not always available before the intervention, whilst 37.5% (95% CI, 26.6-48.3) of the participants choose; they are always available. There was no significant change after the intervention, thus, 40% (95% CI, 32.5-47.4) chose they are always available and 54.1% (95% CI, 46.5-61.6) choose otherwise.

KNOWLEDGE

Table 2: Results of knowledge of HCW for baseline and endline data

QUESTION	BEFORE INTERVENTION	AFTER INTERVENTION
<i>What is the recommended management of incomplete abortion in the first trimester?</i>		
a. Surgical evacuation/curettage	---	1.9(-0.7,0.5)
b..D&C	3.2(-1.3,7.7)	2.8(-0.3,6.1)
c. MVA	93.5(87.2,99.8)	85.7(78.9,92.5)
d. Medical (use of drugs)	4.32(-1.3,7.7)	---
<i>What are the most common complications of incomplete abortion?</i>		
a. Sepsis, haemorrhage, shock	98.7(96.2,101)	97.6(95.3,99.9)
b. Anaemia, Malaria, haemorrhage	----	----
c. Fever, sepsis, injury	1.2(-1.4,3.7)	2.3(0.05,4.6)
<i>Have you ever heard of medical management of incomplete abortion?</i>		
a. Yes	92.5(86.6,98.4)	96.4(93.6,99.2)

b. No	7.5(--, 13.4)	3.5(0.7,6.3)
<i>From where?</i>		
a. Literature	29.3(18.7,39.8)	23(16.5,29.5)
b. Formal education/school	22.6(12.9,49.9)	23.6(17.0,30.1)
c. On job from colleagues	38.6(27.3,49.9)	48.4(40.7,56.1)
d. From the media	----	----
<i>What medication, dosage and route of administration is used for the management of incomplete abortion within the first trimester?</i>		
a. Single dose misoprostol 600 mcg orally or single dose misoprostol 400 mcg sublingually	62.5(51.6,73.3)	72.3(65.5,79.1)
b. Single dose mifepristone 200 mg orally or Cytotec 800 mcg per-vaginal every 4 hours	15(7.0,23.0)	12.3(7.3,17.3)
c. Single dose Cytotec 800 mcg orally or 600 mcg misoprostol buccal every 6 hours	22.5(13.1,31.8)	15.2(9.8,20.7)
<i>Who can manage incomplete abortion using medical management?</i>		
a. Nurse/midwife	30(8.0,52.2)	32.1(13.7,50.5)
b. obstetrician	25(4.2,45.7)	21.4(5.2,37.6)
c. Intern doctor	----	----
d. Clinical officer	25(4.2,45.7)	32.1(13.7,50.5)
e. Intern clinical officer	5.4,15.4)	3.5(-3.7,10.9)
Doctor	15(-2.1,32.1)	10.7(-1.5,22.9)
<i>Are drugs used for medical treatment of incomplete abortion available at your facility?</i>		
a. Yes (always)	37.5(26.6,48.3)	40(32.5,47.4)
b. No	----	----
c. sometimes (Not always)	55(43.8,66.1)	54.1(46.5,61.6)
d. Don't know	7.5(1.6,13.4)	4.7(1.4,7.9)

3.3 Attitude

Most of the health care workers 60% (95% CI, 49.0-70.2) chose bimanual pelvic and abdominal examination and 11.2% (95% CI, 4.1-18.3) opted for routine laboratory tests as the primary investigation of a patient with incomplete abortion. After the intervention the percentages changed to 62.9% (95% CI, 55.6-70.2) and 5.8% (95% CI, 2.3-9.4) respectively, but the change was not significant (P= 0.173).

The level of confidence of the participants did not differ in both studies; before the intervention was introduced, 50% participants were somewhat confident in medical management of incomplete abortion, 20% (95% CI 11.0-28.9) were very confident about it whilst 30% (95% CI 19.7-40.2) were not confident about it. There was an insignificant change (P= 0.547) after the

training as, 45.2% (95% CI, 37.7-52.8) were somewhat confident whilst 34.7% (95% CI, 27.4-41.9) were very confident.

More than 85% (95% CI 77.0-93.0) answered “yes” with regards to whether they have treated incomplete abortions with medical treatment (misoprostol), whilst the remaining 15% (95% CI, 77.0-93.0) were “no” in response to it. After the training slightly more people were positively inclined to using misoprostol in the treatment of incomplete abortions 87.6% (95% CI, 82.6-92.6). (P=0.483).

Table 3: Results of the Attitude of HCW for baseline and endline data.

QUESTION	BEFORE INTERVENTION	AFTER INTERVENTION
<i>Have you been formally trained on the use of medication in the management of first trimester incomplete abortion?</i>		
a. Yes	17.5(8.9,26.0)	25.2(18.6,31.9)
b. No	82.5(73.9,91.0)	74.7(68.1, 81.3)
<i>What is necessary to do before providing PAC?</i>		
a. Routine laboratory tests	11.2(4.1,18.3)	5.8(2.3,9.4)
b. Ultrasound scanning	28.7(18.6,38.8)	31.1(24.1,38.2)
c. Bimanual pelvic and abdominal examination	60(49.0,70.9)	62.9(55.6,70.2)
<i>How confident are you in managing incomplete abortion using medication?</i>		
a. Very confident	20(11.0, 28.9)	34.7(27.4,41.9)
b. Somewhat confident	50(38.8,61.2)	45.2(37.7,52.8)
c. Not confident	30(19.7,40.2)	20(13.9,26.0)
<i>If you had a chance of managing a woman using drugs, would you, do it?</i>		
a. Yes	85(77.0,93.0)	87.6(82.6,92.6)
b. No	15(7.0,23.0)	12.3(7.3,17.3)

3.4 Practice

There was no significant difference in the use of MVA before and after the intervention according to the KAP survey. With the option of Manual Vacuum Aspiration (MVA), 28.7% (95% CI, 18.6—38.8) had never practised it, whilst 42.5% (95% CI, 31.4-53.2) had practised MVA for more than 1 to 10 times. After the intervention, 25.8 % (95% CI, 19.2-32.3) had never practised MVA and 37.6% (30.2-45.0) had practised it more than 1 to 10 times.

Regarding the use of medication in managing incomplete abortion in the first trimester, 57.5 % (95% CI, 46.4-68.5) of the healthcare workers had never used medication, 23.1% (95% CI, 14.2-33.2) have used it 1 to 5 times and 16.2 % (95% CI 7.9-24.5) have used it more than 10 times. After the intervention, there are some significant changes; 34.7 % (95% CI, 27.4-41.9) responded; they had never used medication in managing incomplete abortion whilst 30.5% (95% CI, 23.5-37.5), have used medication 1 to 5 times and 27.6% (95% CI, 20.8-34.4) have used it more than 10 times. More healthcare workers were using medication (misoprostol) for the treatment of incomplete abortion.

All the participants had different views on how long a woman should stay for observation after medical treatment for incomplete abortion. Less than half of the participants; 38.7% (95% CI, 27.8-49.6) choose 4 to 6 hours, 30% (95% CI, 19.7 -40.2) choose 8 to 12 hours and few opted; 8.7% (95% CI, 2.4-15.0) for 24 to 48 hours. After the intervention there were some significant changes in the response with more participants; 45.8% (95% CI, 38.3-53.4) going for 4 to 6 hours while 21.1% (95% CI, 14.9-27.3) choose 8 to 12 hours.

Most of the participants 95% (95% CI, 90.1-99.8) answered that contraceptives should be given immediately after medical treatment of incomplete abortion whilst 1.2% (95% CI, -1.2,)3.7 choose six weeks from the time of abortion. After the intervention, 94.7 % (95% CI, 91.3-98.1) opted that contraceptives should be given immediately after medical treatment of incomplete abortion. On the contrary 1.17% (95%CI, -0.04- 2.8) went in for six weeks from the time of abortion resulting to no significant change.

PRACTICE

Table 4: Results of the Practice of HCW for baseline and endline data

QUESTION	BEFORE INTERVENTION	AFTER INTERVENTION
For how long you have been managing women with incomplete abortions		
a. Less than a year	35(24.5,45.6)	29.4(22.4,36.3)
b. One to five years	31.2(20.8,41.6)	30.5(23.5,37.5)
c. Over five years	33.7(23.1,44.3)	70.5(63.6,77.5)
How many times have you performed MVA before?		
a. Never	28.7(18.6,38.8)	25.8(19.2,32.5)
b. 1 to 5 times	18.7(10.0,27.4)	25.2(18.6,31.9)
c. 5 to 10 times	10(3.2,16.7)	11.1(6.3,15.9)
d. more than 10 times	42.5(31.4,53.5)	37.6(30.2, 45.0)
Have you ever managed incomplete abortion in the first trimester with medication?		
a. Never	57.5(46.4,68.5)	34.7(27.4,41.9)
b. 1 to 5 times	23.7(14.2,33.2)	30.5(23.5,37.5)
c. 5 to 10 times	2.5(1.0,6.0)	7(3.1,10.9)
d. More than 10 times	16.2(7.9,24.5)	27.6(20.8,34.4)
Following medical management of first trimester incomplete abortion, a woman must stay in the hospital for observation for a period of?		
a. 4 -6hours	38.7(27.8,49.6)	45.8(38.3,53.4)
b. 8-12 hours	30(19.7,40.2)	21.1(14.9,27.3)
c. 12-24 hours	22.5(13.1,31.8)	23.5(17.0, 29.9)
d. 24-48 hours	8.7(2.4,15.0)	9.4(4.9,13.8)
When should a woman be given contraceptives following medical management of incomplete abortion?		
a. Immediately after receiving medical treatment	95(90.1, 99.8)	94.7(91.3, 98.1)
b. One week from medical treatment	3.7(-0.5, 8.0)	4.1(1.1, 7.1)
c. Six weeks from time of abortion	1.2(-1.2, 3.7)	1.1(-0.4, 2.8)

CHAPTER 4

DISCUSSION

4.1 Overview of results

This study aimed to analyse the current use of misoprostol and the knowledge, attitude, and practice of health service providers on the use of misoprostol in the treatment of incomplete abortion. We hypothesised that the health care providers familiar with the medical management of incomplete abortion will prefer misoprostol, but some of them may have inadequate experience or expertise.

The data collected in this research is in two parts: baseline and endline data. A training intervention was employed to equip health care providers from three different hospitals on the medical (misoprostol) treatment of incomplete abortion. The results obtained from the data are grouped into three, knowledge, attitude, and practice aside the demographic data.

Knowledge: this sought for the healthcare workers awareness regarding incomplete abortion and what could be done to treat it medically. Responses gathered under this aspect were related to, knowledge of the healthcare workers on medical management of incomplete abortion, its complications, source of the knowledge, recommended management of incomplete abortion, who can manage incomplete abortion, dosage, and route for administering misoprostol. Healthcare workers illustrated a certain degree of knowledge of incomplete abortion and its management which was improved upon by the training intervention.

Attitude: in the quest to know what the health workers feel or think about medical treatment of incomplete abortion in the first trimester we received some positive and negative responses regarding the questions which included, level of confidence in managing incomplete abortion with medication, when given the chance to use drugs to manage incomplete abortion will they do it, and others.

Practice: this section concentrated on what is done regarding the management of incomplete abortion. This included health workers experience with medical management of incomplete abortion, giving of contraceptives after managing incomplete abortion, the period an individual should stay in the hospital for observation with the management of incomplete abortion, and length of healthcare workers practice using medication for incomplete abortion.

MAIN DISCUSSION

4.2 The current use of misoprostol

The current use of misoprostol here is how misoprostol was employed in the treatment of incomplete abortion by the healthcare workers after the training intervention. The current use of misoprostol was measured in the attitude and practice results section.

The study results revealed that health care workers are more likely to use misoprostol, rather than manual vacuum aspiration, D&C, and surgical evacuation, for the effective management of incomplete abortion in the first trimester, following a period of training. This turn/inclination corresponded with a decrease in the incidence of common complications associated with incomplete abortion such as, sepsis, shock, and bleeding, during the same timeframe. These findings suggest that the training intervention positively influenced the utilisation of misoprostol by health care workers and improved the quality of care for women experiencing incomplete abortion. This is consonant with a quasi-experiment (6) done to assess the effectiveness of a training intervention in increasing the use of misoprostol in post abortion care in Malawi. The study recorded a significant change in the use of misoprostol in two intervention sites (Salima and Mchinji).

Ensuing the training intervention, the number of healthcare workers knowing the accurate administration of single dose misoprostol 600mcg orally to treat patients with incomplete abortion increased, whereas before the intervention, a larger portion of participants indicated the dosage of 800mcg misoprostol orally and 600mcg misoprostol buccally every 6 hours. This change towards using the recommended dosage of misoprostol (600mcg orally or 400mcg sublingually) by the World Health Organization (WHO) has several implications and benefits. Using the recommended dosage of misoprostol may result in a reduction in the cost of treatment, as misoprostol is less expensive than mifepristone (71). Also, the recommended dosage of misoprostol is associated with a lower risk of complications, such as excessive bleeding, compared to the higher dosage previously used (World Health Organization, 2012). Moreover, it is advised by WHO that complying to the recommended dosage may improve the regularisation and consistency of care provided to women experiencing incomplete abortion. This adaptation towards using the recommended dosage of misoprostol represents an important advancement in the management of incomplete abortion in Malawi, as it aligns with evidence-based practices and has the potential to improve patient outcomes.

In addition, this research recorded a significant change in the use of medication for treating incomplete abortion in the first trimester. Healthcare workers who had never used medication in treating incomplete abortion decreased by 20%. This indicates that the healthcare workers are becoming inclined to use medication to treat incomplete because of the awareness that was created through the training intervention. The training has had a great impact on the practice of healthcare workers as some of them increased the number of times they have employed medication in the treatment of incomplete abortion. The findings in this study is in line with a similar study done in Malawi, which increased the number of healthcare workers who use misoprostol in postabortion care (6).

After receiving training on the use of medication for incomplete abortion, approximately 75% of healthcare workers in the three facilities reported feeling very confident in their ability to administer medication for this purpose. This represents a significant increase in confidence levels, as prior to the training intervention, healthcare workers in Malawi reported feeling uncertain and hesitant about using medication, and instead preferred other forms of treatment such as manual vacuum aspiration (MVA) and dilation and curettage (D&C).

The increase in confidence levels among healthcare workers in Malawi is an encouraging development, as it suggests that training interventions can have a positive impact on the adoption of evidence-based practices. This shift towards using medication as an effective treatment for incomplete abortion aligns with current WHO guidelines and may have several benefits, including reducing the need for more invasive and costly procedures, decreasing the risk of complications, and improving access to care for women in low resource settings. This result corresponds to other studies conducted in Malawi and Uganda(6, 54) to assess health care workers on the use of misoprostol.

The availability of medication(misoprostol) remains a concern despite the repositioning towards the use of the drug as an effective treatment for incomplete abortion. This study shows that patients may not always have access to the necessary medication, which could lead to the use of over-the-counter medications or other potentially unsafe practices. This is particularly concerning as over-the-counter medications may not be effective in treating incomplete abortion and could result in the misuse and abuse of drugs. The misuse and abuse of drugs could have serious consequences, including adverse health outcomes for patients, such as excessive bleeding

or infection, and could also result in the development of drug-resistant strains of infections. It is therefore critical that steps are taken to ensure the availability and accessibility of safe and effective medication for the management of incomplete abortion. One possible solution is to strengthen health systems to ensure that the medication is readily available and accessible to patients who need it. This could involve improving supply chains, increasing investment in healthcare infrastructure, and providing ongoing training and education for healthcare workers on the management of incomplete abortion.

Considering the current use of misoprostol; healthcare workers after the training increased the use of misoprostol in the treatment of incomplete abortion in the first trimester. HCW grew in their level of confidence in the efficacy of this treatment option and improved upon employing the accurate dosage recommended for the medical treatment of incomplete abortion. On the contrary, access to misoprostol should be made easily available to help reduce drug abuse and encourage the use of this treatment option.

KNOWLEDGE, ATTITUDE AND PRACTICE OF HEALTH SERVICE PROVIDERS OF THE USE OF MISOPROSTOL IN THE TREATMENT OF INCOMPLETE ABORTION.

4.3 Knowledge

This study indicates that health care workers are familiar with medical treatment of incomplete abortion in the selected facilities. Results from the data collected show that majority of health care workers in the selected facilities have knowledge of medical treatment for incomplete abortion, with more than 90% of participants in the baseline and endline data indicating familiarity with the treatment. This finding suggests that efforts to educate and train health care workers on this topic have been successful. This implies that there is a need to continue and strengthen efforts to train health care workers on medical treatment for incomplete abortion to ensure that women have access to safe and effective PAC. It also highlights the importance of regular monitoring and evaluation to ensure that health care workers maintain their knowledge and skills in this area.

Participants' sources of knowledge of medical treatment of incomplete abortion varied from colleagues on the job, school, literatures, to other sources. The training intervention organized

was relevant in increasing the number of health care workers who obtained their knowledge on the job from 38% at the baseline to 48% at the end of the study. This result shows that on-the-job training is an effective way to improve healthcare workers' knowledge and skills. Healthcare facilities should consider incorporating on-the-job training in their education programs to improve healthcare workers' knowledge and skills in this area. The use of different educational resources such as colleagues and literature can also supplement formal training interventions to ensure healthcare workers have the necessary knowledge and skills to provide safe and effective care to women seeking medical treatment for incomplete abortion. This finding is consistent with a previous study that investigated; Private medical providers' knowledge and practices concerning medical abortion; thus, more than half of the medical practitioners knew about medical treatment of incomplete abortion (72).

Further on the source of knowledge of medical management of incomplete abortion, less than a quarter of the participants obtained it from school (formal education). Records of both end and base line data showed that 82% and 74% of the participants respectively have not been formally trained on the use of medication in the management of incomplete abortion. This shows that formal medical education does not give enough attention to the medical management of incomplete abortion. Healthcare facilities should address this gap by providing training interventions in their continuing education programs. The training should cover medication use, dosage, and potential complications. This can help equip healthcare workers with the necessary knowledge and skills to manage incomplete abortion effectively and safely. This is an urgent challenge that should prompt instructors and leaders in charge of the educational curriculum to pay attention to and make sure there is thorough training on this. This adds up to the major factors that hinder the use of medication in treating incomplete abortion and build less or no confidence in the method.

According to the World Health Organization (WHO), the recommended management of incomplete abortion when the foetus is less than 14 weeks; is either vacuum aspiration or medical treatment. (WHO 2022) The data in this study supports WHO's recommended management for incomplete abortion hence the participants answered rightly to vacuum aspiration and medical treatment as the recommended treatment for incomplete abortion in both data. It can be implied that most health care workers are up to date with the internationally

accepted treatment for incomplete abortion. Although, about 90% of healthcare workers have heard about medical treatment for incomplete abortion; only a few know that it is the recommended management of incomplete abortion. In this study, it is observed that only a few of the health service providers know that medical (misoprostol) treatment for incomplete abortion is also accepted by WHO. This may be the reason why the use of the drug is low in many facilities in Malawi. This is not helpful and would suggest that the medical management of incomplete abortion should be promoted among the health care workers as another effective method that is also recommended by WHO. The medical management of incomplete abortion so far is gaining grounds to be the simplest and most feasible method for low resource settings (26, 73).

Results regarding this research indicate that, the health care workers are well informed about the right dosage of misoprostol for treatment of incomplete abortion and the training conducted helped to raise the level of awareness of the correct dosage of misoprostol to be used in treating incomplete abortion in the first trimester. This denotes that, patients are more likely to receive safe and effective treatment. It is important to continue providing training programs for healthcare professionals on the use of misoprostol to maintain this level of knowledge and improve the quality of care for patients. This correlates with WHO's prescription for misoprostol in treating incomplete abortion; 600µg misoprostol administered orally or 400µg misoprostol administered sublingually (19). Healthcare workers' knowledge and training on the correct dosage of misoprostol can lead to better treatment outcomes, lower healthcare costs, increased patient satisfaction, and reduced stigma, which all contribute to improving the quality of care provided to patients.

Other studies (24) have explored alternate routes of misoprostol administration and its effect. One of them shows that sublingual misoprostol had a similar effect with vaginal misoprostol in inducing complete miscarriage but was associated with frequent diarrhoea. Another study proposed that, using misoprostol for treatments would be effective, and contingent on the time interval to follow up (74).

The study emphasizes the need to improve healthcare workers' knowledge of medical management for incomplete abortion. There is insufficient formal training in this area, but on-the-job training interventions are effective. Increasing the awareness among health care workers about the recommended management of incomplete abortion including the use of medical

treatment(misoprostol) is needed. Healthcare facilities must prioritize continuing education programs and provide access to diverse educational resources to ensure quality care for women seeking medical treatment for incomplete abortion and PAC in general.

4.4 Attitude

From the collected data at these health facilities, it is evident that, the availability of misoprostol is a challenge. Thus, more than half of the health care workers stated that it is not always available. This can lead to frustration and stress for healthcare workers and potentially poorer treatment outcomes for patients. It may also contribute to healthcare workers being less likely to offer medical treatment for incomplete abortion, which could result in more women seeking unsafe treatment methods. Improving the availability of misoprostol could have significant positive impacts on the attitudes of healthcare workers towards medical treatment of incomplete abortion, as well as the quality of care provided to patients.

This finding is consistent with other studies conducted in Nigeria and other sub-Saharan African countries (75-77). Despite this, Nigeria's drug regulatory authority accelerated for its (misoprostol) approval and ranked it as an orphan drug to help save women's lives (76). Misoprostol is stated as an option in the national guidelines, but it is not properly implemented. (The Association of Obstetricians & Gynaecologists of Malawi,2014; Odland et al.,2014) A study conducted in Malawi reports that misoprostol is one of the maternal health products that was indicated for district hospitals only. There was also a substandard production of misoprostol that was reported to the national authorities and WHO leading to the closure of the production company (78). This could affect its patronage and the confidence of health care workers in its use.

According to our findings, the practitioners were very confident in medical management of incomplete abortion, even though the difference was not big for both data. Although after the training there was a rise in the confidence level of the health practitioners. Healthcare providers who are confident in their ability to manage incomplete abortion using medical treatment can have a positive impact on access to safe and effective care for women seeking abortion services. When healthcare providers feel knowledgeable and equipped to manage incomplete abortion through medical treatment, they can provide accurate information, offer appropriate counselling,

and provide compassionate care that meets the needs of individual patients. This can lead to better patient outcomes and a higher level of patient satisfaction with the care they receive. This result corresponds to a qualitative study (79) conducted to explore the experiences and perceptions of health workers on the medical treatment of incomplete abortion; the health practitioners expressed high confidence in the use of misoprostol to treat incomplete abortion due to the knowledge obtained from the training. In addition, research on medical management of incomplete abortion in central Uganda states that, some healthcare professionals have grown confidence in using misoprostol and its effectiveness. This is because of its simplicity in administering, saves resources and they are able to multitask among few healthcare workers'(54).

A review of the results denotes that more than 70% of the participants for both data were willing to use medication as a treatment option in the management of incomplete abortion in the first trimester. This finding highlights the importance of healthcare workers considering patient preferences and involving them in their treatment decisions. Healthcare workers should be educated on the use of medication for incomplete abortion management, particularly in settings where access to safe abortion services is limited. The study's findings may also impact policies and guidelines related to the management of incomplete abortions. These implications suggest the need for comprehensive sexual and reproductive health education and services for women.

This study found that healthcare workers have a positive attitude towards using medication as a treatment option for incomplete abortions in the first trimester. There is an increase in the level of confidence in the effectiveness of the medical treatment of incomplete abortion. Also, the concept of adopting a patient-centred approach that considers their patients' preferences and values would be improved upon with their willingness to use the medical treatment option. These findings suggest that healthcare workers are adapting to new evidence-based practices, which can lead to better care for women seeking treatment for incomplete abortions.

4.5 Practice

The results reveal that the use of misoprostol is not new to more than 50% of the health care workers after the training, thus they have some level of experience with it (from 1-10times). This experience was built on through the training invention adopted. Before the intervention 57% of

the practitioners had never used misoprostol, this was reduced to 34% after the intervention. Observing this change after the training, if similar studies are conducted in the different districts there would be an improvement in how incomplete abortions are managed and medical management would be adopted due to its feasibility and effectiveness. This training will give healthcare workers better experience and the confidence to replicate it when the need arises.

As healthcare providers become more familiar and experienced with the use of misoprostol, it is expected to have a positive impact on their practicing level and skills. Healthcare workers who have experience using misoprostol are likely to be more confident in their abilities to treat incomplete abortion, have increased knowledge and insights (This can help them to identify potential complications and side effects and take appropriate measures to manage them) into its use, provide the treatment more efficiently and effectively, and improve patient safety. Our findings vary from a similar study done in some hospitals in Nigeria. In the 'Calabar study', none of the doctors reported to have used medical methods for treating abortion, Dilation & Curettage (D&C) was the common method used in the first trimester, followed by Manual vacuum Aspiration (80).

The results showed that the use of misoprostol was enhanced in more than half of the healthcare workers after the training, indicating some level of prior experience. The training intervention helped increase the level of experience of healthcare workers in medical (misoprostol) treatment for incomplete abortion. The increase in the use of misoprostol by experienced healthcare workers has an inference for the quality of care provided to patients, as well as potential cost savings and increased job satisfaction for healthcare workers. This highlights the importance of training healthcare workers in the use of misoprostol for the treatment of incomplete abortion, particularly in low-resource settings where access to trained healthcare workers may be limited.

The data further indicates that the healthcare workers in these facilities support the provision of family planning services to patients who come to the unit with abortion issues. This is because more than 90% of them answered positively to the fact that contraceptives should be given immediately after medical treatment on incomplete abortion. The provision of family planning services immediately after medical treatment for incomplete abortion can help reduce the risk of repeating unintended pregnancies and subsequent abortions. It also empowers women to make

informed decisions about their reproductive health. This will in turn improve maternal and child health outcomes. Further studies could be organized to get feedback on patients who have received the post abortion family planning services and assess its effectiveness. The family planning services should not be limited to the giving of contraceptives only but must include family planning counselling sessions about different contraceptive methods and their pros and cons. It has been reported that, the quality of counselling is critical to enhancing the acceptance of post abortion contraceptive use (81).

MVA is one of the commonly used methods in some parts of Malawi (21) and is also a contender to the medical treatment of incomplete abortion as majority of the health care workers used it often for treating incomplete abortion in the first trimester in this study. Excerpts from the results indicated a reduction among the health workers in the use of MVA for the management of incomplete abortion in the first trimester (for more than 10 times) after the training. This change in practice is significant, as it suggests that healthcare workers are becoming more aware of the benefits of medical treatment with misoprostol and are willing to adopt it as a treatment option. This change in practice has important implications for the care provided to patients, as medical treatment with misoprostol is often more accessible, less invasive, and less costly than MVA. Moreover, it can lead to increased patient satisfaction, as it allows women to avoid the discomfort and pain associated with invasive procedures like MVA. The results in this study are compatible with a study (20) conducted in Malawi from three different hospitals which recorded a reduction in the use of MVA from 2010 through to 2012. However, another study (21) in 2015 noticed an increase in the use of MVA for first trimester abortions which is contrary to the findings in this study.

Family planning is one of the integrant of Malawi's Reproductive Health Program which has gone through diverse forms of developmental phases from Community Based Distribution through Non-governmental Organization's programs. Notwithstanding the government of Malawi's effort to expand family planning services and its use, studies reveal that, some districts like Salima and Mangochi have low patronage and the service is not offered everywhere. Some of the factors that have led to the low family planning utilization in Salima district include, low level of education, number of children in a family, low socio-economic status, and long waiting times at the health facility(82). Misoprostol is likened to or considered as an emergency

contraception pill in a study (83) conducted in Burkina Faso. It is commonly termed as, ‘norlevo’, a common practice to avoid pregnancy. Some of the subjects interviewed in the study conducted in Burkina Faso disclosed that, they used misoprostol as a method of terminating confirmed pregnancy at an early stage (1 or 2 months old). Whilst others use it after a missed or delayed menstrual cycle.

A Kenyan study, reported that, after putting measures in place for effective post abortion family planning services, they were received well and it is being practiced hence about 80% of the patients who receive post abortion care accepted post abortion family planning services (84). Findings from a study carried out in some developing countries stipulate that post abortion counselling should be seen as a vital part of family planning and introduced into most of the hospitals in each country (85). Three models were adopted in this study but the most effective one was, patients who received family planning counselling before being discharged from the hospital (86). In connection with this study, we recommend that any health facility that want to introduce post abortion family planning services could consider these conditions.

- a. Sufficient staff at the place where post abortion patients are treated.
- b. A space on or near the ward for counselling.
- c. How to keep the ward stocked with contraceptives and storage for family planning services.

Post-Abortion care is relevant to each patient’s health and demands that anybody in need of such, should be able to access or receive as soon as possible without any hindrance. One of the key human rights considerations relating to the management of incomplete abortion states that, PAC must be available without the threat of criminal prosecution or any punishment. States must not request health workers to report persons suspected of undertaking unlawful abortion or demand the provision of any potentially incriminating information during or as a prerequisite to receiving PAC(19). In relation to this legal statement, we suggest healthcare workers should boldly and urgently render these services accurately. This research is in unison with WHO’s goal of providing lifesaving care by equipping HCW with the right skills, knowledge, and attitude. WHO has released new family planning and abortion care competency standards for health workers. This focuses on endowing the HCW with strong communication, decision making and partnership skills that will accommodate the provision of effective, non-judgmental, and person-

centred care especially in family planning and abortion care (WHO 2022). Self-management of medical abortion is one of the quality care options that WHO recommends on condition that quality assured medicine, accurate information, and support of a trained health worker. In view of this, there is a need for HCW to be updated with such information and skill to provide effective service.

In conclusion, this study suggests that healthcare workers are improving their practices in treating incomplete abortion in several key areas. They are becoming more supportive of providing family planning services and are shifting towards using medical treatment with misoprostol, which is less invasive, and more patient centred. This improvement is due to the training of healthcare workers, which highlights the importance of continued support and development in this field. Overall, these findings are encouraging for the quality of care provided to patients seeking treatment for incomplete abortion.

CHAPTER 5

CONCLUSION, LIMITATIONS AND FUTURE RESEARCH

5.1 Conclusion

This study enabled the HCW in the selected study settings receive on the job training to improve upon their knowledge, skills, and abilities in the medical treatment of incomplete abortion in the first trimester. The level of knowledge, attitude, and practice of HCW in the treatment of incomplete abortion in the first trimester were well assessed. The results of this study underscore the importance of on-the-job training in upgrading the knowledge and skills of HCW. The health field strongly thrives on acquiring the right knowledge and putting it into good use. The formal training given to HCW during the study on the treatment of incomplete abortion is not sufficient, which limits their ability to manage incomplete abortion in the first trimester with a more effective and feasible method. Keeping focus on continuing education for HCW on the job and organizing awareness programs would help improve the knowledge of HCW on the medical management of incomplete abortion and other maternal issues. With this they will become abreast with recommended, and new methods of medical procedures.

Moreover, this research disclosed that the HCW have positive attitudes toward the medical treatment of incomplete abortion which would help facilitate the implementation of this method. As the HCW gains more confidence in the effectiveness of this method, they would be in a better position to communicate about it well to patients who need more education in the medical treatment incomplete abortion. The positive attitude portrayed towards the treatment of incomplete abortion will also advance a patient-oriented approach in the delivering of the services which will focus on the needs, values, and preference of the patients. The openness of the HCW to evidence-based practices will encourage the leadership of the health sector to provide avenues for them to enrich and enlarge their scope of knowledge. In line with this the HCW can embrace new and contemporary health practices that are benefitting and feasible to better the health of patients who patronize their services.

Finally, the HCW are improving upon their practices in different fields and one of them is the provision of family planning and counselling services. As this area is considered and the proper skills in delivering these services are developed among the HCW; the aim of WHO to equip HCW with communication, decision making and partnership skills in providing family planning and abortion services will be achievable. This study was not without limitations.

5.2 Strengths and Limitations

Strengths: A strength to this study is that the KAP survey gave us insight on the participants knowledge and attitudes about incomplete abortion and the methods employed to treat it in the hospitals and communities. Another strength of this study is that, both referral and district hospitals were represented in the settings. This reflects the locations and size of hospitals elsewhere in Malawi.

The training intervention was short, but the team managed to increase the use of misoprostol to treat incomplete abortion and upgrade the participants' level of knowledge and build positive attitudes in this method. The endline data was gathered a year after the training intervention on misoprostol to ensure the sustainability of the training effect and obviate a Hawthorne(placebo) effect (87)

Limitations: There is a potential for selection bias, the healthcare workers who opted to partake in this study may have much interest or motivation in the topic of study. This may have impacted the level of knowledge and attitudes of the participants in the medical management of incomplete abortion, thus overestimating their level of knowledge. There could also be that participants were not sharing their actual perceptions but what they thought the researchers wanted to hear.

Considering the validity of the hospital-based study, the health facilities included in this research were just three and situated only in the central region of Malawi. This would make generalization a challenge. Although efforts were made to enrol diverse health care workers from the multiple facilities, the findings may not be representative of the region and other settings. There could also be a potential issue of validity of self-reported data, as health care workers may have provided socially desirable responses rather than reporting their true knowledge, attitude, and practices.

The participants who were included in the endline data but were not present for the training intervention is another limitation to this study. Their absence in the training would make it difficult in assessing the effectiveness of the intervention and might have a potential impact on the observed efficacy of the training and interpretation of results. In addition, the perspectives of women who received treatment of incomplete abortion were not assessed. This would have

enabled the gathering of useful/valuable insights on the feasibility and acceptance of the medical(misoprostol) treatment of incomplete abortion.

Confounding is the situation whereby an outcome variable is influenced by an extraneous variable or there is a missing of true association between an exposure variable and an outcome variable (88) as a result of another factor(s). In this research factors such as the acuteness\gravity of the incomplete abortion being treated, the level of experience of healthcare workers and the availability of resources in the health facilities may have influenced the results.

To address these limitations, further studies can employ different study designs such as randomized controlled trials and use objective measures to assess knowledge, attitude, and practice. Efforts could be made to control confounding variables and careful consideration should be taken to limit potential sources of biases to ensure validity and generalizability of findings.

5.3 Future Research

The results of this study emphasize that medical treatment of incomplete abortion is an effective and feasible method of managing incomplete abortion in the first trimester. HCW are gaining confidence in this method and have positive attitudes towards the utilization of the medical treatment of incomplete abortion which will facilitate a patient-oriented system of care delivery. In view of this, future studies should consider ways of improving and sustaining these attitudes to ensure that long lasting and effective services are provided to patients.

The present study reveals certain gaps in the level of knowledge among the HCW in the treatment of incomplete abortion because of the inadequate information provided for the HCW during their formal education; hence future studies can consider organizing more of in-service training on the job to enable the HCW upgrade their level of knowledge consistently to meet the needs and demands of their services. Also, as this study was conducted in just the central region of Malawi, future research should consider conducting such studies in other regions or middle-income countries to examine the impact it would yield. The barriers that were encountered in the current study could be examined in high income settings to observe if the differences in the law

guiding abortion, the level of education\experiences of the HCW, and resources available would affect the KAP of HCW in the treatment of incomplete abortion.

Improving post abortion care and access to other maternal health care services are means of reducing maternal deaths. Hence, future studies should consider the goal of WHO to provide HCW with knowledge, right skills, and attitude in delivering post abortion care and counselling services. From this point of view further studies could be organized to equip the HCW with the requisite skill to deliver quality post-abortion care and counselling services.

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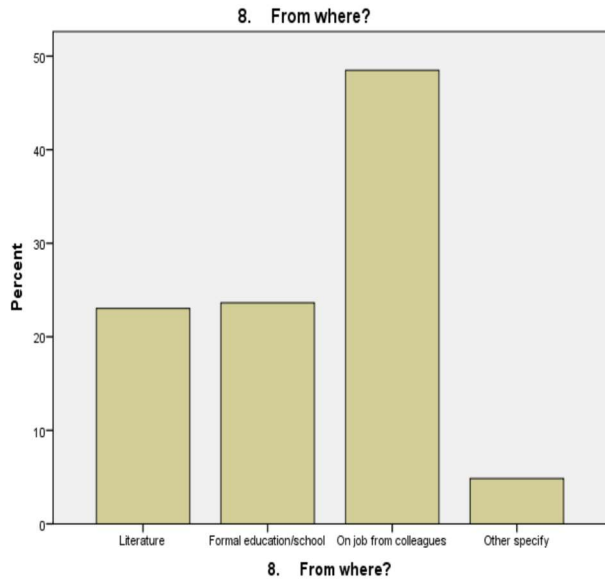
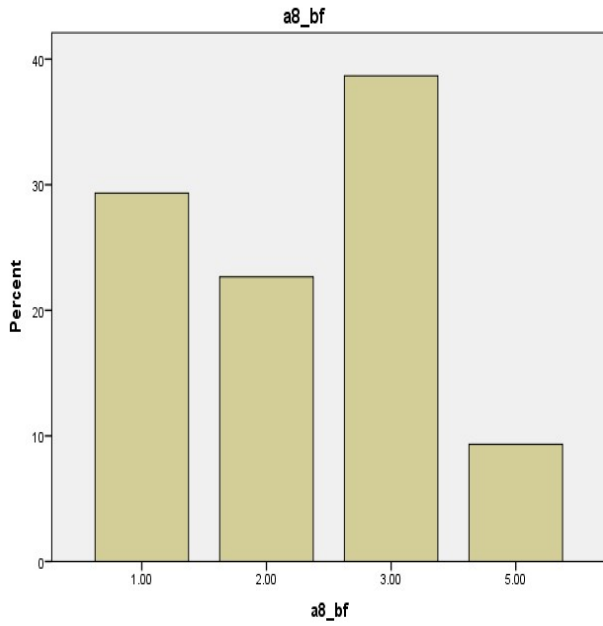
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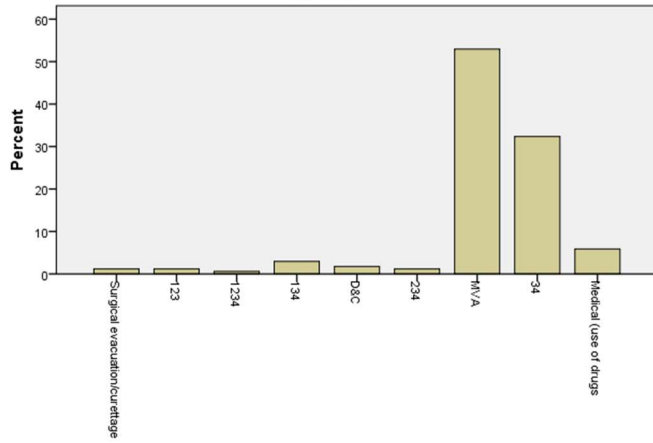
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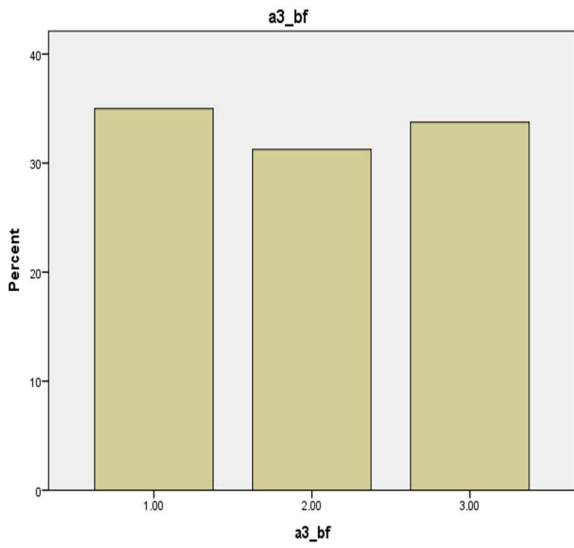
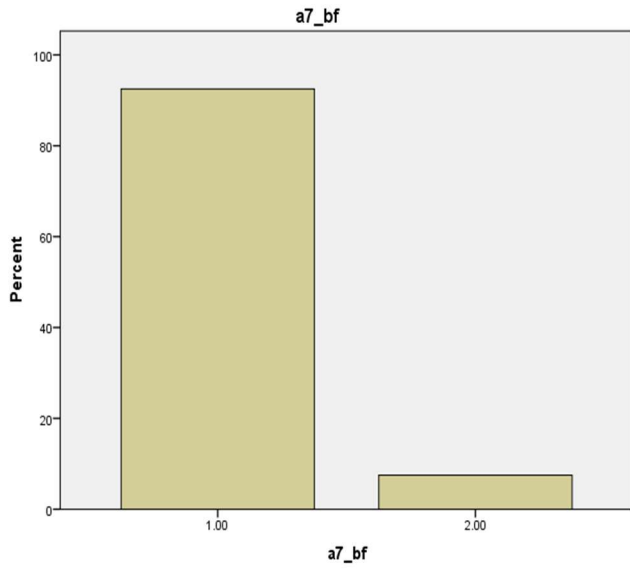
APPENDICES: SUPPLEMENTARY MATERIALS

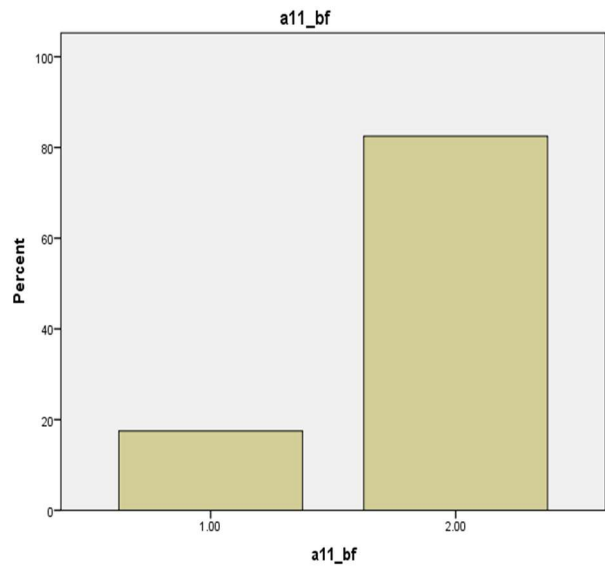


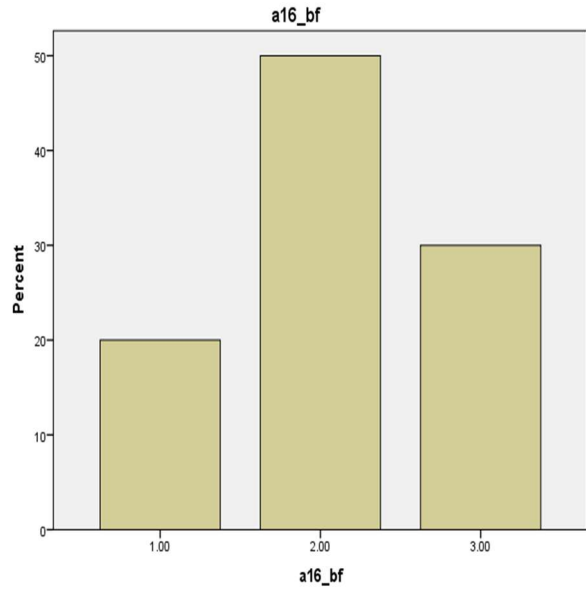
4. What is the recommended management of incomplete abortion in the first trimester



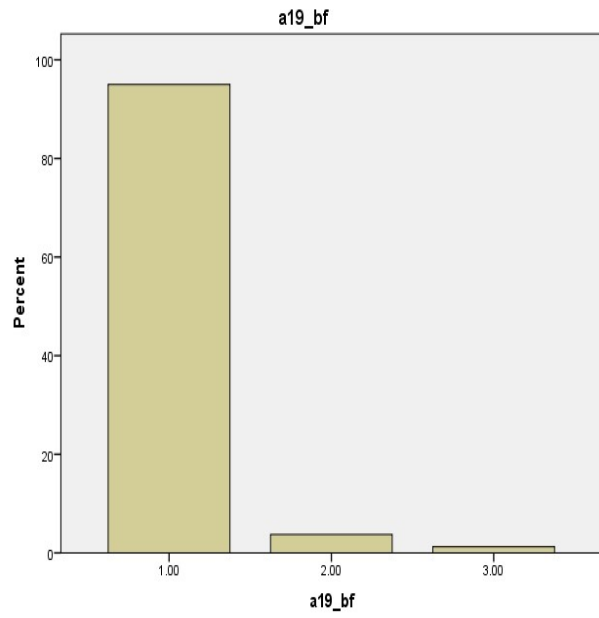
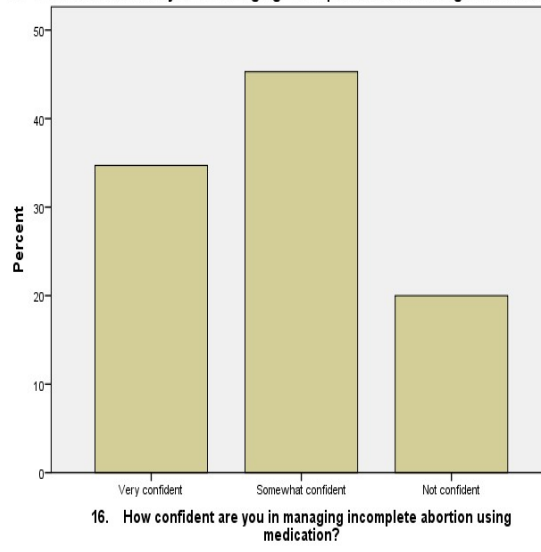
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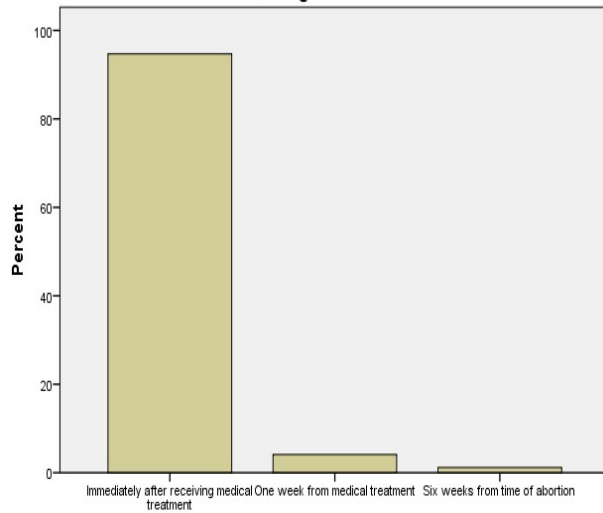




16. How confident are you in managing incomplete abortion using medication?



19. When should a woman be given contraceptives following medical management



19. When should a woman be given contraceptives following medical management

Study title: ‘Knowledge, attitude, and practice among healthcare workers on the use of misoprostol in the treatment of incomplete abortion in Malawi.’

Data extraction tool: Pre and post training

No.	Question	Responses	Code
1.	Study site	Bwaila Salima Mchinji Dedza Ntcheu	1 2 3 4 5
2.	Case identification code	_____	
3.	Address: Client’s residence. Village/Township Traditional Authority District	_____ _____ _____ _____	

4.	Distance from residence to hospital	_____	
		Kilometres	
5.	Referral case?	Yes	1
		No	2
6.	If yes, from where?	_____ _____	
7.	Period of hospital stay for the client	_____/_____/_____ to _____/_____/_____	
Demographic data			
8.	Age	15-19	1
		20-24	2
		25-29	3
		30-34	4
		35 and above	5
9.	Tribe	Chewa	1
		Tumbuka	2
		Lomwe	3
		Yao	4
		Ngoni	5
		Mang'anja	6
		Sena	7
		Other (specify)_____	8
10.	Marital status	Single	1
		Married	2
		Divorced	3
		Widow	4
		Separated	5
		Other (Specify)_____	6
11.	Level of education	None	1
		Primary	2

		Secondary	3
		Tertiary	4
12.	Religion	Roman Catholic	1
		Anglican	2
		C.C.A.P	3
		Pentecostal	4
		Seventh Day Adventist	5
		Islam	6
		Other (Specify)_____	7
13.	Occupation	None	1
		Accountant	2
		Policewoman	3
		Nurse	4
		Business lady	5
		Teacher	6
		Student	7
		Farmer	8
		Others (Specify)_____	9
	Obstetric/Gynaecologic history		
14.	Gravidity	_____	
15.	Parity	_____	
16.	Weeks of amenorrhoea at time of abortion	_____	
17.	Presenting symptoms	_____ _____ _____ _____	

18.	Previous treatment on miscarriages, if the woman had miscarriages before and information is available	_____ _____ _____	
19.	Number of children alive to client	_____	
	Post abortion care (PAC)		
20.	Type of PAC provided	Surgical evacuation/curettage Dilatation and curettage Manual vacuum aspiration Medical	1 2 3 4
21.	Provider of PAC	Obstetrician Doctor Intern doctor Clinical Officer Intern clinical officer Nurse/midwife	1 2 3 4 5 6
22.	Patient outcomes	Discharged without any complications. Discharged after managing complications. Died	1 2 3
23.	Complications developed	_____ _____	

Name and signature of data collector _____ / _____

Name and signature of data collection supervisor _____ / _____

Date data collected _____ / _____ / _____

Questionnaire for service providers pre and post training (Circle the appropriate response{s})

Facility _____

Date _____

Code _____

1. Designation
 - a. Obstetrician
 - b. Doctor
 - c. Intern Dr
 - d. Clinical officer
 - e. Intern clinical officer
 - f. Nurse midwife
 - g. Other specify _____
2. For how long you have been managing women with incomplete abortions
 - a. Less than a year
 - b. One to five years
 - c. Over five years
3. What is the recommended management of incomplete abortion in the first trimester?
(circle all that applies)
 - a. Surgical evacuation/curettage
 - b. D&C
 - c. MVA
 - d. Medical (use of drugs)
4. How many times have you performed MVA before?
 - a. Never
 - b. 1 to 5 times
 - c. 5 to 10 times
 - d. more than 10 times
5. What are the most common complications of incomplete abortion?
 - a. Sepsis, haemorrhage, shock
 - b. Anaemia, Malaria, haemorrhage
 - c. Fever, sepsis, injury

6. Have you ever heard of medical management of incomplete abortion?
 - a. Yes
 - b. No
7. From where?
 - a. Literature
 - b. Formal education/school
 - c. On job from colleagues
 - d. From the media
 - e. Other specify _____
8. Have you ever managed incomplete abortion in the first trimester with medication?
 - a. Never
 - b. 1 to 5 times
 - c. 5 to 10 times
 - d. More than 10 times
9. What medication(s) did you use?

10. Have you been formally trained on the use of medication in the management of first trimester incomplete abortion?
 - a. Yes
 - b. No
11. What medication, dosage and route of administration is used for the management of incomplete abortion within the first trimester?
 - a. Single dose misoprostol 600 mcg orally or single dose misoprostol 400 mcg sublingually
 - b. Single dose mifepristone 200 mg orally or cytotec 800 mcg per-vaginal every 4 hours
 - c. Single dose cytotec 800 mcg orally or 600 mcg misoprostol buccal every 6 hours

12. Who can manage incomplete abortion using medical management? **(circle all that applies)**

- a. Nurse/midwife
- b. Obstetrician
- c. Intern doctor
- d. Clinical officer
- e. Intern clinical officer
- f. Doctor

13. What is necessary to do before providing PAC? **(circle the most appropriate)**

- a. Routine laboratory tests
- b. Ultrasound scanning
- c. Bimanual pelvic and abdominal examination

14. Cytotec is

- a. A prostaglandin E1 analogue
- b. An anti-progestin drug
- c. A uterotonic drug

15. How confident are you in managing incomplete abortion using medication?

- a. Very confident
- b. Somewhat confident
- c. Not confident

16. Are drugs used for medical treatment of incomplete abortion available at your facility?

- a. Yes (always)
- b. No
- c. Sometimes (Not always)
- d. Don't know

17. Following medical management of first trimester incomplete abortion, a woman must stay in the hospital for observation for a period of:

- a. 4 -6hours
- b. 8-12 hours

- c. 12-24 hours
- d. 24-48 hours

18. When should a woman be given contraceptives following medical management of incomplete abortion?

- a. Immediately after receiving medical treatment
- b. One week from medical treatment
- c. Six weeks from time of abortion

19. If you had a chance of managing a woman using drugs, would you do it?

- a. Yes
- b. No

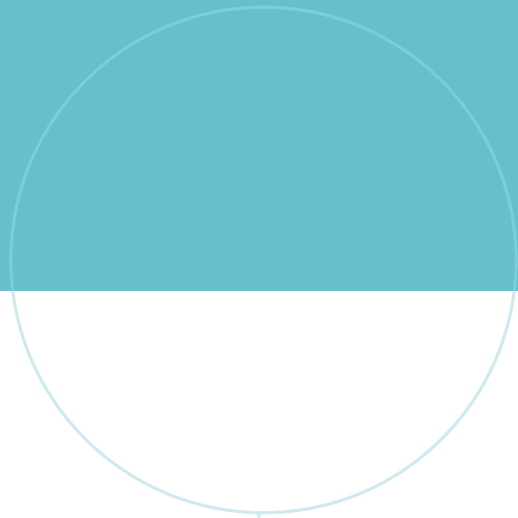
20. Why?

21. In a nut shell what can you say about medical management of incomplete abortion in the 1st trimester?

Interview guide for service providers after one year of intervention

1. In the past year how many women with incomplete abortion did you treat?
2. What type of treatment did you use and why?
3. How confident are you in treating women with incomplete abortion in the first trimester with misoprostol?

- a. Why is that so?
4. Can you please share your experience in the use of misoprostol as management of first trimester incomplete abortion?
5. What can you say about the effectiveness of misoprostol in the management of incomplete abortion in the first trimester?
6. What can you say about efficiency of misoprostol in the management of incomplete abortion in the first trimester?
7. If you are to choose type of management of incomplete abortion, what would you use: MVA, misoprostol or surgical curettage?
 - a. Why would you choose that management?
8. What are the challenges that you have been facing in the past year as service providers in the use of misoprostol as management of incomplete abortion?
9. Is there supportive supervision in the use of misoprostol as medical management of abortion at your facility?
10. Approximately how many patients developed complications, what type of complications and how were they managed?
11. What can you say about the availability of misoprostol at your facility in the past year?
12. What are the cadres of service providers that manage women using misoprostol at your facility and why?
13. In your opinion, what is better between medical and surgical management of incomplete abortion in the first trimester?



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