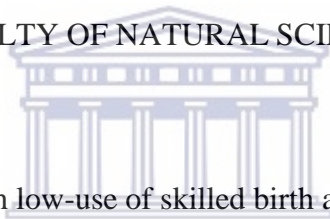


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Factors associated with low-use of skilled birth attendants in Zimbabwe

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A thesis submitted in fulfilment of the requirements for the degree of Master of Philosophy (MPhil) in the Department of Statistics & Population Studies, University of the Western Cape.

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November 2018

## DECLARATION

I declare that *Factors associated with low-use of skilled birth attendants in Zimbabwe* is my own work, that it has not been submitted for any degree or examination in any other institution, and that all the sources I have used or quoted have been indicated and acknowledged by complete references.



Signed:

A handwritten signature in black ink, appearing to be "N. V. ...".

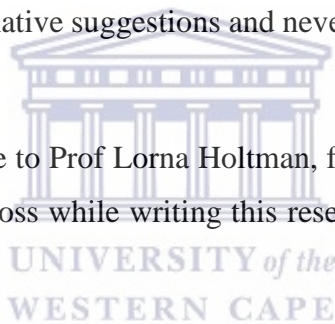
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## ABSTRACT

Skilled birth attendance at childbirth is vital for decreasing maternal and child mortality in Zimbabwe. Infant mortality and maternal mortality in Zimbabwe are quite high due to low- use of skilled birth attendance. Based on different study sources, home delivery with complications are high, with many socio-economic and demographic associated factors including lack or no use of skilled birth attendance at childbirth in Zimbabwe. Therefore, the study looked at "preventive" which refers to an action taken to reduce or eliminate the probability of specific undesirable events or dangers from happening in the future and the present time in Zimbabwe. The objective of the study was to highlight the significance of the crucial function within the health systems of saving both the lives of a mother and the child. Furthermore to determine the frequent use of maternal health care services (skilled birth attendant) and identify factors affecting them. The data that was used was nationally represented large scale secondary data ZDHS of Zimbabwe with sample population  $n = 9,171$ . It was a secondary data that included all the provinces of Zimbabwe, simple random sampling was used that had questionnaires of both man, women and household questionnaires, these questionnaires helped in examining the socio-economic factors and determinants that leads to low-use of skilled birth attendants at childbirth. The prosed statistics analysis that were used were univariate, bivariate and multivariate techniques. The statistical analysis showed that demographic variables such age, place of delivery and socio-economic factors such as level of education of a mother and wealth index (occupation of a parent) and region has a significant effect on the use of skilled birth attendant during birth. Women with higher level of education were found to have high use rate of maternal health care services (Skilled birth attendants), while women with primary and secondary education were found to have high use rate of less ( traditional birth attendant) or no use of skilled birth attendant. Therefore, the female age at birth, place of delivery, level of education and wealth index played a major role in decision making about the importance of having a skilled birth attendant when giving birth. The access to skilled birth attendance was found to be a significant factor in reducing maternal and child mortality in Zimbabwe. Furthermore women need to be educated about the importance of maternal

health care services use and postnatal care and the department of health in Zimbabwe can implement mobile clinics for those who are residing far from health facilities..

**Keys words:** Skilled Birth Attendant, Maternal Health, Delivery processes (Antenatal care), Socio-economic factors, Low-use of Skilled Birth, Zimbabwe, Demographic factors, maternal and child mortality.



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## List of Abbreviations

**ANC:** Antenatal Care

**CSFP:** Children's Supplementary feeding Programme

**CSFPC:** Child Spacing and Family planning

**DHS:** Demographic Health Survey

**EAs:** Enumerated Areas

**HIV/AIDS:** Human Immunodeficiency Virus/ Acquire Immunodeficiency Syndrome

**MDG:** Millennium Development Goals

**MMR:** Maternal Mortality Ratio

**MOHFW:** Ministry of Health & Family Welfare

**PDA:** Personal Digital Assistants **p-value:**

Probability-Value

**SBA:** Skilled Birth Attendant

**SPSS:** Statistical Package for the Social Sciences

**TBA:** Traditional Birth Attendant

**TNDP:** Transitional national Development Plan

**UNICEF:** United Nations Children Emergency Fund

**UNPD:** United Nations Population Development Programme

**WHO:** World Health Organization

**ZDHS:** Zimbabwe Demographic Health Survey



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# CHAPTER 1

## INTRODUCTION

### 1.1 Background

Zimbabwe is a landlocked Southern African country between Zambezi and Limpopo rivers. It has borders with Botswana to the West (along 813 km), Mozambique to the East (1,231 km), and Zambia to the North (797 km), Zimbabwe has a population of about 12, 5 million people (ZIMSTAT, 2010). Zimbabwe's life expectancy is 54 years for man and 53 years for women (Agency, 2012).

The thesis looks at factors affecting low-use of skilled birth attendant at childbirth under the umbrella (maternal and child health care services use), in the rural and urban areas of Zimbabwe. It will focus on socio-economic and demographic factors that play a role in the utilization of skilled birth attendant at birth. These factors include education, wealth index (economic status), place of residence, place of delivery and age. According Babolola and Fatusi (2009), socio-economic along with demographic factors are the main factors influencing the utilization of maternal health care services (use of skilled birth attendant at birth).

### 1.2. Maternal and child health care (Skilled Birth Attendants)

Access to proper maternal health care service plays an important role in reducing child mortality and improving reproductive health systems of a woman (Navaneetham & Dharmalingam, 2002). Moreover, (WHO, 2004) agrees with Navaneetham & Dharmalingam by saying the presence of a skilled birth attendant when a woman is giving birth is a vital stage in identifying the survival of both the mother and the unborn child, and also to reduce risk factors that might lead to death of a mother and a child at birth. Skilled birth attendants are health professionals with basic midwifery and obstetric skills, and comprise nurses, midwives and physician (Gibbons *et al.*, 2010). The low-use of skilled birth attendants at child birth can be determined across socio-economic status of a women and her cultural context. In many cases, it is found that the higher the birth order of the women (number of children the women has), the less chances for mothers to make use of adequate antenatal care (WHO, 2004). Due to such decisions, seven out of ten babies born under these circumstances have small chances of staying alive until they reach their 5<sup>th</sup> birthday (Zimbabwe Demographic and Health Survey, 2010-2011).

(Gerein *et al.*, 2006) supports the above statement made by (ZDHS, 2010-11) by saying some of the healthcare facilities are not fully equipped to handle the health care needs of the whole population, especially the rural area population. In some cases the available health equipment does not provide the health services needed by the pregnant mother at that moment. Most of these challenges are attributed by shortage of midwives, doctors and unequal access to maternal healthcare services (Gerein *et al.*, 2006). Pregnancy and childbirth are two eventful processes, which most women desire to go through at some point in their lives; however, pregnancy and childbirth are potentially risky and fatal experiences according to (Asres & Davey, 2015). Moreover these risk complications affect both the unborn child and the pregnant women, as a result, women in the reproductive age between the ages (15-49) years old die every year because of pregnancy and childbirth related complications. Three hundred million women between this age categories suffer from unbearable injuries from pregnancy and childbirth that did not go well (Asres & Davey, 2015). Studies such as that of Mekonnen *et al.*, (2018) support Asres & Davey argument by showing the rise of level of maternal and child mortality in developing countries. This rise is caused by a lack of antenatal care, and limited to no access to maternal health care such as the presence of skilled birth attendant at childbirth and Socio-economic and demographic factors (Mekonnen *et al.*, 2018).

### **1.3 Global perspectives on skilled birth attendants**

According to the WHO (2009), approximately 287 women die while giving birth or while pregnant, and 3.1 million new babies die during the neonatal period. Neonatal period is considered the greatest risk period for both the mother and the unborn child (WHO, 2009). Furthermore approximately 65% of all deaths that occur in the first year of life happen during 4-week period. As a result the first 24 hours of life are the most vulnerable time for the infant because major physiologic adjustments are needed for extra uterine life (WHO, 2009). Nakhambala *et al.*, (2004) highlighted that the highest incident of maternal and perinatal mortality occurs around the time of birth with the majority of deaths occurring within the first 24 hours after birth, these deaths occur mostly in the absence of skilled birth attendant.

According to Crowe *et al.*, (2012) in the Biomedical Medical Centre (BMC) report of 2009, most obstetric complications that occur around the time of delivery are not easily predicted in the absence of skilled birth attendant at birth. This is because the skilled birth attendant has midwifery

skills and is able to manage normal delivery, recognizing obstetric complications and is quick to refer a pregnant mother to someone with more experience in time if needed.

Despite the two decades of maternal health initiatives in the developing countries especially in the rural areas, a high proportion of births continue to occur at home in unhygienic conditions without any skilled birth care assistant and without the essential infrastructure needed to refer in the case of complications (Johnson, Padmadas, & Matthews, 2013). This in most cases is due to cultural believes of a husband (no using western medicine) where a women has no say in the household at all. Socio-economic status of women is one of the fundamental factors that explain the high rates of home births in developing countries like Zimbabwe (Johnson *et al.*, 2013). Furthermore women from poor households and marginalized communities lack access to proper maternity care because they cannot afford proper healthcare services. In urban settings, available health service tend to be controlled by high socio-economic costs such as education of the mother, transportation, place of residence and wealth index (Johnson *et al.*, 2013).

Due to the lack of reliable trend data for developing countries, recent studies (Ogollah, 2009) believe that progress to achieve and improve maternal health has been very slow. Despite proven interventions that could prevent disability or death during pregnancy and childbirth, maternal mortality remains a major burden in many developing countries (Mengesha, Biks, Ayele, Tessema, & Koye, 2013). According to (Mengesha *et al.*, 2013), there was an estimation of 358,000 maternal deaths worldwide in 2008 of which developing countries accounted for 99%. Nearly three fifths of the maternal deaths (i.e. 204,000) occurred in the SSA region alone, followed by South Asia with 109,000 deaths. These two regions together accounted for 87% of maternal deaths globally (Mengesha *et al.*, 2013).

Pathak *et al.*, (2010) describe the gap in the risk of maternal deaths between developed and developing countries as a greatest health divide in the world. As a result well-intended efforts to reduce maternal and new-born mortality and morbidity have been on the search for more than a decade (Pathak *et al.*, 2010). The results of these efforts showed success in a few countries, but progress in most countries has been unacceptably slow (Pathak *et al.*, 2010). Furthermore information from past projects and ongoing research are pointing to the importance of access to the functioning health care system that is seen as a key factor in reducing maternal mortality (Pathak *et al.*, 2010).

#### **1.4 Health Care: Zimbabwe**

Like many developing countries health care system in Zimbabwe is made up of two pillars, which are the public sector and private sector. The private sector is used by those who can afford, because it includes things like medical aids that require one to have money in order to pay for top class services they are given. Public sector on the other hand gets financial support from the government, and the health care is free of charge to those who cannot afford other healthcare this type of health care is also known as primary health care. These two pillars of health they show the level of inequality in the access maternal health care facilities in Zimbabwe, therefore this chapter will briefly introduce factors contributing to that inequality.

According to Peltzer, et al, (2005) notes that the health facilities are not distributed equally between rural and urban areas of Zimbabwe, therefore because of this act arise health care problems which some of these facilities play a role as some of the determinants of health especially in the rural areas of Zimbabwe. This perspective is carried further by Pathak *et al.*, (2010) by narrowing down the focus to community level, where the skilled birth attendant will often be the only qualified healthcare worker of the whole village. In most cases, the skilled birth attendants are found to be the only care workers with exclusive responsibility for the care of women during pregnancy, childbirth and the immediate postnatal period. Other healthcare workers range from traditional birth attendants (person who assists the mother at child birth and their delivery skills are acquired through delivering babies alone) through nurses to specialist physicians who also contribute to the care of women and new-borns (WHO, 2011). None of these (traditional birth attendants, midwives etc.) will have either the wide-ranging competence for all the tasks the skilled birth attendant is required to perform (Pathak *et al.*, 2010). However in spite of overwhelming evidence from developed countries on the value of skilled birth attendants, sufficient numbers of skilled attendants remain unavailable in many developing countries (WHO, 2004).

Provinces within countries often vary considerably, and it is unlikely that a strategy that works in one province, might not work in another region (Pathak *et al.*, 2010). In populated rural areas, for instance, there is no access to technological devices like smart phones, or online calendars as to remind them of their check-ups or any health related information. Moreover it is clear that health care services have always been a major problem in Zimbabwe, whereby people have to travel long

distances to get to the facilities, sometimes they get there only to go back home un-attendant because of shortage of staff, and waiting time due to shortage of staff. These are some of the factors that plays a role in decision making of use of skilled birth attendant buy the mother or not (Pathak *et al.*, 2010). However in a very-hard-to-reach population the only way of ensuring that pregnant women have access to a skilled attendant may be to encourage them to move near a health care facility, especially as the time for birth approaches and stay there until the child is born. According to Pathak *et al.*, (2010), geographical factors have important implications for the provision of the field of care, especially with regard to effective referral where infrastructure such as roads, transport and other things is poor or absent. Hence, in the context of geographical diversity infrastructural issues will be a top priority in how care is organized (Pathak *et al.*, 2010).

Maternal mortality is one of the major public health problems in many SSA countries (WHO, 2010). There is a life time risk of dying during pregnancy, childbirth and in the early postnatal period which is very high during these periods (Adetoro *et al.*, 2014). Over half-a-million women around the world die due to childbirth and pregnancy-related issue every year, and 250,000 of these maternal deaths occur in sub-Saharan Africa (Nour, 2008; Alvarez *et al.*, 2009; Silal *et al.*, 2012). Improving maternal health is one of the Millennium Development Goals (MDG5), which was made available in 2015.

### **1.5 Country profile: Zimbabwe health policies**

Zimbabwe has achieved equality in healthcare policy over the years, by adopting its independency in 1980 where provision of care was granted according to needy (Faruque, 2006). According to Faruque, (2006) there were many challenges regarding the implementation of equal health policies. These include an increase in health consultation fee, reduced allocation of local health authorities and poor effective functioning of referral system. According to Mengesha *et al.*, (2013) some of the leading factors include representatives on decision making bodies which are often more powerful. Structures for patients to influence policy, such as ward committees; mass organizations and co-operative and trade union movements have played a role in the organization of health care (Mengesha *et al.*, 2013).

Zimbabwe designed post-Independence policies so as to ensure greater equity in access to health services and also to strengthen preventive services. This policy came with its challenges such as expansion in primary care facilities leading to a rise in health care expenditure (Brunt & Jensen,



2013). These challenges include significant predictors of population health such as level of education, income and gender equity (Brunt & Jensen, 2013).

According to (Elujoba, Odeleye and Ogunyemi, 2004) another strategy adopted is the primary health care (PHC) approach demanded direction of new resources towards previously deprived areas in the improvement of nutrition and the control of preventable diseases. In line with the new PHC approach, the management and delivery of service has been slowly transformed Elujoba *et al.*, (2004). The health-giving and protective structures have been included in provincial and district health team structures, that makes the health team structures to be accountable not only to higher levels of the health structure but to the local government structures. Hence, the doctors in the rural district hospital are no longer health-giving professionals only, but are also responsible for mobilizing, through the health team and range of health promoting.

National Nutrition Programme, and Department of National Nutrition was established the main responsibility for the Department of National Nutrition is to focus on nutrition and health education, with particular interest to breast feeding and weaning practices, growth monitors and nutrition surveillance using child health cards, and supervision of the Children's Supplementary Feeding Programme (CSFP) Elujoba *et al.*, (2004). Lastly is the Traditional Midwives Programme introduced what is known as Child Spacing: The Child Spacing and Family Planning Council (CSFPC), is a parastatal institution established in 1981, and it superseded the voluntary, government-assisted family planning association Elujoba *et al.*, (2004).

## **1.6 Problem statement**

In both rural and urban parts of Zimbabwe there is not much research done regarding relationship between maternal education and utilization of skilled birth attendant at childbirth, this is the gap that was discovered in many research papers. This therefore leads to lack or inaccessibility of health care services especially in the rural area of the country. According to Olayinka et al, (2014) use of maternal health care services helps in reducing the risks and complications that lead to maternal deaths. Therefore it is important to study and comprehend factors that contribute to maternal and child mortality. The lacking driving force for this knowledge to reach everyone is education on maternal health care, especially in the rural areas of Zimbabwe, this has a negative effect on the use of health care services. Moreover distance is a barrier between pregnant woman and healthcare facilities, as many need to travel long distances to get the help they need (travelling

includes taxi fee that some of these women cannot afford). More recently, the ZDHS (2010-2011) revealed that maternal and child mortality was caused by the fact that several women faced challenges to access healthcare facilities due to various socio-cultural, socio-economic and geographical factors as well as the limited number of well-equipped and functioning facilities. Furthermore, the lack of sufficient skilled birth attendants at childbirth played a role in maternal and child mortality since 1 out of 4 women gives birth alone or in the presence of a relative, without skilled birth supervision (ZDHS, 2010-2011). Therefore, it is very important to study and to educate women and man about factors associated with the use of maternal and child healthcare services (use of skilled birth attendant when giving birth) in both rural and urban areas of Zimbabwe. This will help and inform policy makers and health organizations about the situation Zimbabwe is facing regarding low- use of skilled birth attendant at child birth.

### **1.7 Objectives of the study**

The objectives of the study are to:

1. Highlight the significance of the crucial function within the health system of saving the lives of both the mother and that of the new-born.
2. Identify the determinants of skilled and unskilled birth attendance.
3. Determine the frequent use of maternal health care services and identify factors affecting them.

### **1.8 Research questions aims to answer the following questions:**

1. What are the main contributing factors that lead pregnant women not to utilize health care professionals when giving birth?
2. What is the frequent use of maternal health care service of Zimbabwe?
3. What are the main contributing socio-economic and demographic determinants of maternal and child health care use in the study?

### **1.9 Significance of the study**

The study will enhance ones understanding of the socio-economic and demographic factors involvement in the low-use of skilled birth attendant in developing countries (such as Zimbabwe). It will also help to identify how these factors differ across social determinants of residents and their cultural context. Moreover, it will give an insight of the current status of these factors in developing countries with emphasis on Zimbabwe to be specific. There is also a deep factor that

need attention and that is understanding why some women between age (15-49) decide not to make use of maternal health care services available to them. Last but not least, the results of this study will be used by policy makers to improve issues related to maternal and child mortality.



## CHAPTER 2

### REVIEW OF LITERATURE

#### **2.1 Introduction**

In this chapter, the impacts of maternal ill health will be discussed using various studies. This chapter will focus on the background context of the Zimbabwe healthcare system, with emphasis on access to maternal healthcare services. The international and African context will also be used to emphasize the general factors that affect maternal healthcare services and factors influencing the accessibility of maternal healthcare at large specifically the factors associated with low – use of skilled birth attendant at child birth.

#### **2.1.1 Maternal Ill- Health**

Maternal health refers to the health of both the pregnant women and the child (WHO, 2004). Many developing countries are constantly fighting pregnancy and childbirth related complications, according to WHO (2008) estimation of maternal mortality was 358,000 women with reproductive age of (15-45). Greatest burdened regions of maternal ill health are found in Sub-Saharan African countries such as Zimbabwe (Gerein, Green, & Pearson, 2006). Factors that influence maternal mortality include low use of skilled birth attendant when a woman is giving birth (Green *et al.*, 2006). The causes of maternal mortality and morbidity, which are well known, are the result of the inability of the health system to deal effectively with complications that can be prevented (Green *et al.*, 2006). The shortage of health professionals is also a dominant factor that affects negatively maternal healthcare system through two interrelated processes; which are the existing work force and the effects of workforce (Gerein *et al.*, 2006).

Some of these complications include HIV & AIDS, economic circumstances which cause “brain drain” and economic forces which affect negatively the human resources on health. The brain drain in the Sub-Saharan African context refers to the movement of health-skilled individuals from less-developed to more-developed countries (Docquier *et al.*, 2009). Historical and present experiences have shown that there is a definite but complex relationship between economic growth and health status in each developing country (Makate, 2017). Makate (2017) explained that sustained economic growth over a long period can lead to an improved health and nutritional status and sustained decline in mortality. In addition to some of the issues related to maternal health is

shortage of health particularly for those in rural poor areas who lack access to good quality maternal health care.

### **2.1.2 Maternal Illness Globally**

Childbirth and pregnancy related complications account for up to 1,000 maternal deaths in the world (Abul Bashar, 2012). Furthermore nearly 99% of these deaths take place in developing countries, such as South Asia that amounts to more than one third of maternal deaths. As a result maternal mortality ratio (MMR) of South Asia and sub-Saharan Africa accounts for 85% of maternal death. Ethiopia is one of ten countries that cover about 60% of global maternal deaths, it accounted for 9000 maternal death in 2010 alone (Asres & Davey, 2015). Furthermore 30 % of these deaths were women with reproductive ages of (15-49 years) in the country. According to Demographic Health Survey of Ethiopia there had a MMR of 676 deaths per 100,000 live births, with less to no difference in estimations made during the preceding surveys (Asres & Davey, 2015).

Globally, efforts have been made to deal with preventable maternal and new-born mortality, and focus on addressing both the known and unknown risks associated with pregnancy and birth (Shaw et al., 2016). Access to postnatal care which includes home visit midwives, healthcare visitors and antenatal care, is almost available to women from high income communities. According to Shaw *et al.*, (2016), the National Institute of Health Care Excellence (NICE) recommends that all birth settings should be available to low income communities and in areas where there is high-birth associated complications. One of the biggest commitments of Millennium Development Goals (MDG) report from long ago is to fight against poverty on a global scale of ill-health (Kusnanto, Schoders & Wall, 2015). Then it is when the MDG 5 was initiated to focus specifically on decreasing child mortality for about two-thirds by the year 2015. This act made mortality in particular and the health of under-five children a major priority for every developing country including Zimbabwe (Kusnanto, *et al.*, 2015).

Studies such as those conducted by (WHO & UNICEF, 2012) and Houweling (2012) have indicated that child mortality has decreased over the last few decades in both the developing and developed countries. As a result it is unlikely that the fourth MDG goal could be achieved in many Sub-Saharan African countries. In as much as there is a constant dropping of child mortality at a regional and global scale, death is still the most alarming factor in many poor regions of the world (WHO & UNICEF, 2012). According to the WHO (2013) report by the Inter-Agency Group (IAG)

on mortality estimation, one child out of nine dies before reaching their fifth birthday. Enough evidence suggests that low socio-economic status is highly correlated with poorer healthcare or services (WHO, 2013). In many cases, child mortality is also caused by factors such as social and health inequalities in different groups. Moreover, it has also been found that child mortality is considerably higher among low socio-economic groups within developing countries (Bhattacharya & Chikhama, 2012).

## **2.2 Maternal health care use in Zimbabwe**

Maternal deaths have decreased significantly over the last five years due to the improvement in the Zimbabwean health care system (Patel, 2015). However, the decrease of maternal mortality is not always the case argued Chingwe (2016) because Zimbabwe's maternal rate is still one of the highest in Sub-Saharan Africa countries and is heavily dependent on the three indicators (Socio-economic determinants, rural and urban residence, and transportation and delays).

### **A. Socio-economic Determinants**

According to Chingwe (2016), the lack of sound maternal health facilities at satellite clinics around rural places such as Nyadire, Matambara and old Mutare mission hospitals in Zimbabwe is hindering the fight against maternal deaths. The study by Chingwe (2016) gave a geographical area of Zimbabwe episcopal area which has a maximum of 12 clinics, three hospitals and two dental clinics, and all these facilities handle maternal and child health issues. Poor maternal facilities and their unavailability at most of these clinics make it difficult to accommodate all expecting mothers at once. The lack of health professionals in Zimbabwe remains one of the major problems in healthcare services as they leave the country to seek for better opportunities elsewhere (BMC report, 2009). As a result, the standard of basic healthcare services is inconsistent. Some of the reasons for this are the fact that the medical facilities have particularly suffered from a shortage of drugs and professional health staffs (BMC report, 2009). Furthermore, this inconsistency was caused by the inability of the Zimbabwean government to allocate sufficient budget to run its public health institutions, which is always crowded by the people from far away distances and have no means to visit private health sectors (BMC report, 2009).

Furthermore, the health institution in Zimbabwe has failed in many cases to provide adequate services to its people, especially for those who do not have medical insurance, who lives far from

healthcare centres. About 90% of Zimbabweans (>11 million people) have no access to medical aid considering the fact that the country has no national health insurance (BMC report, 2009). The results from the Zimbabwe's Demographic Survey released in 2015 show that 84 children out of 1000 are likely to die before reaching the age of five years old

The World Health Organisation, (2010) argued that in 1980 Zimbabwe had a low material mortality rate of just 90 per 100 000 live births, however in 1994 the gains in health sector increased to 253 per 100 000 live births. Due to poor funding of the health sector, 98% of drugs in public health centres are funded by donors, and the community equipped number of rural health centres to be of good assistance utilization and access to maternal healthcare services (WHO, 2010).

### **B. Rural and Urban Residence**

Although the hospitals have qualified staff the referrals are delayed due to poor networking between the clinics in the surrounding areas; the referrals received from the local clinics do not always arrive on time due to distance between homes and health facilities Chingwe (2016). In many cases the mother or child has died from complications due to the delays made during referrals. Peltzer *et al.*, (2005) noted that Zimbabwe is made up of population groups with different socio-economic statuses and from different geographic locations (urban and rural areas). These factors will therefore result in different access to healthcare services. They (Peltzer *et al.*, 2005) further noted that high quality healthcare, in many cases, tends to be in favour of the urban residents (high socio-economic status) as compared to rural residents (low socio-economic status). This indicates the challenges that rural residents face to access maternal healthcare.

### **C. Transportation and Delays**

The study that was done by World Health Organisation (2014) regarding the maternal health care use in Zimbabwe, explained the maternal healthcare use by focusing on the referral and transport delays. The delay in seeking healthcare from the healthcare facility, in reaching the health facility in time, and lastly the delay in receiving quick and effective care due to the shortage of staff which was referred to as a brain drain earlier in the study. These delays in the health sectors are common in many other developing countries, but Zimbabwe has more concerns to be addressed (such as religious and traditional objectors to modern medicine). For instance, the refusal to seek care at health facilities or blood transfusion because of culture and beliefs when it is urgently needed by



the ill is matter of serious concern. Social determinants of health system which include poor public transport system where by residents will have to walk long distances to reach the health facility. They also raised the fact that all these conditions are avoidable, however if not prevented, recognized and managed in time they can lead to maternal death of a mother or the child (WHO, 2014).

### **2.3 Access to Maternal Health Care Services**

Recent global view suggests that levels of maternal mortality in developing regions have decreased since 1990, and health care for women requires significant improvements (Crowe *et al.*, 2012). The increasing availability of skilled professionals to supervise deliveries has been identified as a key strategy for reducing maternal deaths- According to Crowe *et al.* (2012), global objective is for at least 90% of births to be supervised by a skilled birth attendant. The same study also found out that the same global objective is different in South Asia and Sub-Saharan Africa as the figure remained less than 50%, it is also of note that the proportion of skilled birth attended births in these regions is significantly lower in rural areas than in urban areas.

Although it has been difficult to prove a connecting link exists between skilled birth attendant and maternal mortality rates, estimations suggest the presence skilled birth attendant at delivery could prevent around 16% to 33% of maternal and child deaths (Crowe *et al.*, 2012). The presence of a skilled birth attendant at birth may decrease the rate of stillbirths and neonatal mortality. Local and international effort focuses on improving access to skilled birth attendant at birth throughout the developing world. This development includes activities such as training health professionals, increasing access to health facilities and allocating health resources more equitably especially to the rural areas (Crowe *et al.*, 2012). Authors such as Tann *et al*, 2007; Ahmed *et al*, 2010; Regassa, 2011; Arthur, 2012; Ergano *et al*, 2012, supports Crowe's point by saying education is one of the greatest determinants of the use of skilled birth attendant at childbirth. Despite concentrated effort to increase the presence of skilled birth attendants, many women in the developing world will continue to give birth without health supervision due to religious and mostly traditional reasons especially from the pregnant women of rural settlements (Crowe *et al.*, 2012).

One of the effective interventions used is the African traditional healthcare which was grounded thousands of years ago and has been able to sustain life on its own with just a little performance



of Western medicine is traditional birth attendant (Aderoto *et al.*, 2014). Traditional birth attendant is defined by Aderoto *et al.*, (2014) as a person who assists the pregnant mother during deliverance and that person initially acquired her skills by delivering babies on her own. The knowledge is also gained through the knowledge of other traditional birth attendants that have been in the process for a long time. Approximately 50% of all births in developing countries, Zimbabwe included, are attended by traditional birth attendants (Kruske & Barclay, 2013). Kruske & Barclay (2013) further explains that this leaning towards home birth supervised by TBA is connected to cultural norms and religious beliefs as well as rate and accessibility of the service. In many cases, this practice is due to often shortage of trained medical professionals and usual maternal health provided by TBA's.

#### **2.4 Determinants of maternal healthcare use**

Pregnancy and childbirth are a significant periods in the lives of women and their relatives. However, pregnancy and childbirth are potentially risky and fatal experience for millions of women in developing countries (Olopade & Lawoyin 2010). Annually, more than 200 million women become pregnant in the world and about 358,000 of these women die as a result of pregnancy-related complications (WHO, 2010). 355,000 of these deaths occur in developing countries where it is estimated that the lifetime risk of women dying due to pregnancy-related complications is 250-fold higher than that in developed countries (Lawn *et al.*, 2005; Yanagisawa *et al.*, 2006; & WHO, 2010). Over 30 million more women suffer long-lasting injury and illness from pregnancy-related causes and complications (De Bernis *et al.*, 2003). Furthermore some women suffer from related mental morbidity in developing countries (Hogan *et al.*, 2010). Eighty percent of these maternal deaths are due to direct obstetric conditions, haemorrhage, puerperal sepsis, preeclampsia and eclampsia, obstructed labour and complication of unsafe abortions (WHO, 2011).

Studies such as that of Khanna & Subha (2011) have shown that determinants of maternal health use are increasingly being recognized, such that the health outcomes are not only a result of biological and individual risk factors. These factors include social determinants such as wealth, ethnic background, gender, education and social status. Inequalities in people's access to levels of well-being political choices and social organization that distribute power and resources unequally across populations reproduce unequal health as an outcome (Khanna & Subha, 2012).

According to Serufilira (2005), apart from the social factors there are also issues and challenges such as growing poverty, particularly among women, unforeseen circumstances like manmade and natural disasters such as civil conflicts, epidemics and floods. All these leads to toil down gains made in health, destroy infrastructure, descript services, divert resources and hinder access to care. Other social determinants that were identified as relevant to maternal health, include education, occupation and income, gender and cultural and religion. These dimensions were reported as ones that have an impact on maternal health by means of influencing health services (Gerlach, 2012). According to WHO (2010) the above mentioned dimensions also determine if a women may prefer not to seek proper care because of the inadequacy of available health facilities and some cultural norms. An example is given by Ighobor, (2013) in countries such as Mali, Burkina Faso and Nigeria many women do not make decisions over their maternal health decisions. This kind of responsibility is therefore left to the spouse or relatives thus causing more delay on the mother that is in labour.

Socio-economic divisions within countries mean unequal access to health facilities (Van Lerberghe, 2005). Delivery care is strongly associated with a person's income, whether they live in a rural or urban area and with their education (Van Lerberghe, 2005). The delays in accessing health facilities causes postpartum haemorrhage that accounts for 27% of maternal deaths, while obstructed labours create 8% of obstruction complications. This is most likely to be found in developing regions where there is a shortage of staff, insufficient training, little to no antibiotic available and more means health facilities are not well-equipped to respond to women's needs after birth and during pregnancy (Van Lerberghe, 2005).

The chance of dying during childbirth is closely connected to a mother's social and economic status in this way, her norms, her culture and geographic diffidence at her home (UNFPA, 2012).

These norms might be traditional where by a pregnant women are expected to give birth at home than going to healthcare facility. The economic status might be the unavailability of financial means for regular health check –ups of both the mother and the unborn child by qualified health specialist. According to Mhere (2013), a healthy nation is a key to the survival and wellbeing of a nation's economy. Skilled birth attendants' and antenatal care are two crucial events to look at in addressing the delay in deciding to seek health care services and also delay to access care at the health facilities which accounts 67% of maternal deaths in Zimbabwe (Mhere , 2013).

## **2.5 Determinants of the use of skilled birth attendants**

Characteristics of health delivery system play a role in influencing the use of health care services (Bashar, Dulhunty, Mullany, and Fraser, 2012). Many are times where available good supply services are not properly used, leading to inequality such that some women will be more likely to use services compared to others. According to Bashar *et al.*, (2012), health delivery system is not the only factor that determines the use of health care services; other contributing factors include social characteristics and structural influence the use of health care services. Other studies focus on cultural beliefs, economic-conditions, socio-demographic characteristics and physical and financial accessibility as important determinants of use of maternal health (Bashar *et al.*, 2012).

Education and the age of the mother are the two other factors that play an important role in the use of skilled birth attendant at delivery (Bashar *et al.*, 2012). People with better understanding on current health practices are from educated families since they have access to resources than the less or uneducated families. The study by Bashar *et al.*, (2012) states that a women's education in Tanzania is an independent factor in determining the choice of delivery under skilled supervision. According Gabrysch & Campbell, (2009) in the BMC Pregnancy and Childbirth report, there is a reason why maternal education is constantly associated with almost all types of health behaviour. This is because education plays a role in helping a women to make better choices concerning their maternal health issues. They further explain that education of the women reflects women's childhood background and her familiarity with health services, certain beliefs and norms.

Younger women make use of modern health care facilities than older women because they have greater exposure to knowledge of modern health care. This is why age is an important factor that is able to influence the use of maternal healthcare services (Bashar, 2012). In the BMC pregnancy and childbirth report, age is highly correlated with parity, educational level, marital status, socioeconomic status and decision-making power (Gabrysch & Campbell, 2009). They further explain that many studies on determinants of delivery services consider the age of a mother either influence of age of higher use of skilled birth attendance among old mothers compared to young mothers.

Bashar *et al.*, (2012) suggests women acquire experience and skills with age, as a result women's age act as an alternative for the women's gathered knowledge of health care services. He made mention of the 1993 analysis of Turkish Demographic Health Survey that shows that women who are having their first childbirth are more likely to use professional delivery assistance from skilled personnel than women with higher birth order. An explanation regarding the above mentioned act may be the perceived risk associated with first pregnancy, which may have influenced the mother to seek for skilled birth personnel at her delivery for the first birth compared to higher birth order mothers.

### **2.5.1 Determinants of facility deliveries**

In studies that were conducted in the past there is indication of factors that determine health facility delivery, these include the mother's age at birth and her level of education and that of the partner or husband (Lydia, 2013). According to Lydia (2013), one of the significant determinant for health facility delivery was economic accessibility and what is well known as physical accessibility, which is more concerned about place of residence that plays a role in a mother's decision to deliver at a health facility. There is a huge difference in the use of these facilities when it comes to urban and rural settlements.



The observed benefits of health facility delivery often affect how the mother decides to deliver at health facility. Lydia, (2013) gives an example of a mother who went through bad experience at the health facility is seen as less likely to demand health facility when they are giving birth again.

Wanting to be pregnant for the first time makes it necessary to deliver at a health facility compared to unwanted pregnancy Lydia (2013). As a result, mothers who utilize antenatal care during pregnancy are likely to deliver at a health facility care compared to those who did not go to antenatal care (Afsana, 2001 & Navaneethm *et al.*, 2002).

### **2.5.2 Determinants of Antenatal Care (ANC) use**

There is a high risk of maternal death in developing countries compared to the developed countries (WHO, 2004). The leading cause of death and so called disability include the complications during pregnancy and at childbirth, this takes place among women of reproductive age in developing countries (WHO, 2004). An estimated number of maternal deaths each year is 529,000 of which about 99% of this death occurs in developing countries (WHO, 2005). Factors contributing to this

huge amount of death were observed to be a lot of women in these countries have no access to sufficient care during the period of pregnancy (antenatal care use) (WHO, 2005). Undergoing complete antenatal check-ups promotes child survival and decreases the risk of maternal mortality among pregnant women (Sathiya Susuman, 2012). Furthermore major reasons for poor health in developing countries include the under-use of modern health services and inadequate access. As a result a growing concern in both the developing and developed countries is the inequality in the health and wellbeing of a woman.

An important determinant of safe delivery is what is known as ANC, like any other thing, Antenatal care has its own disadvantages or rather limits of its use, these include obstetric emergencies that cannot be predicted through antenatal screening (Lydia, 2013). It is for this reason that women need to be educated so that they can be able to detect and act on symptoms that could possibly lead to serious conditions (Nuraini & Parker, 2005). According to Nuraini & Parker (2005), Antenatal care strategy acts in a way to decrease maternal mortality. But even though these services might be made available their use is not always guaranteed. A study done in rural Vietnam, found that economic constraints, lack of time, and not feeling sick during pregnancy were playing a role in decision of antenatal care use (Graner *et al.*, 2010).

Furthermore, during pregnancy ANC plays a positive impact on the use of postnatal healthcare services (Chakraborty *et al.*, 2002). WHO (2003) study gives the realistic evidence that four visits are enough to ensure results of any of complicated pregnancies and more visits are necessary only in cases of complications (Villar *et al.* 2001). This is the reason why the World Health Organization currently recommends at least four ANC visits during pregnancy. Factors affecting ANC use were investigated in several studies, in Zimbabwe such as that of (Magadi, Madise & Rodrigues, 2000) while they were not thoroughly investigated in developing countries one of the factors includes C-section.

### **2.5.3 Determinants of C-section (CS) use**

One of the essential maternal health care services is known as caesarean section, which is a very complex procedure in labour and delivery care in developing countries BioMed Central report by (Hobbs, Mannion, McDonald, Brockway and Tough *et al.*, 2016) In low-resource countries like Zimbabwe, caesarean section is one of the least-used delivery procedure for by those who need it the most and the most-used procedure for those less in need (Hobbs, 2016).

Caesarean section was first introduced in clinical practice as one of the methods of saving both the life of the mother and that of the baby (Hobbs, 2016). Out of many procedures used for childbirth it is considered as less complex compared to the others (Hobbs, 2016). This is because it is used in a way to follow the health care inequity pattern of the world such as underuse in low income settings and its sufficient use in middle and high income settings (Gibbons, Belizán, Lauer, Betrán, Merialdi & Althabe, 2010). As a result CS above certain limits (such as only the families with good health index can use) have not shown much improvement for both the mother and the babies survival, and some studies have shown that CS rates could be linked to negative consequences in maternal and child healthcare (Gibbons *et al.*, 2010).

Caesarean section delivery is one of the most common procedures performed by obstetricians (Maruta, 2015). The recovery of women after caesarean section can be stressful especially for women coming from low income areas who might just develop a Surgical Site Infection (SSI) after leaving hospital. These women often have a very little to no practical experience at all on how to look after the wound and have to take care of themselves at their homes alone (Maruta, 2015). According to (Maruta, 2015) the SSI is associated with substantial morbidity and mortality and prolonged hospital stay. This infectious morbidity after caesarean section can have a remarkable effect on the women's return from normal function and her ability to take care of herself and the baby says Itllan in the study of Muruta (2015). Observation as essential system used to measure SSI and also to improve the patient's safety, and that it is most common in high income countries for a wide-range of surgical procedures said Aiken in the study of Muruta (2015).

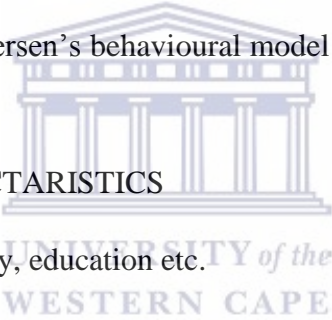
## **2.6 Conceptual framework**

Andersen's Behavioural model of health service is the conceptual framework that was sufficient to meet the objectives of the study of this study. The use of any health facility is an individual decision and experience with the knowledge one has (Addai, 2000). This model has been used in many different studies to understand factors that determine one's decision of using health care services; it also describes the use of health care services as influenced by three sets of individual characteristics (Bhashar, 2012). According to this model maternal health care utilization are predisposing characteristics enabling resources and need and perceived (Bhashar, 2012).



The need is the driving factor for an individual to make use of the available services, the reason for this is that predisposing factors are usually demographic, and they cannot be changed by social circumstances (Young *et al*, 2005). Knowledge about health and health care system is in connection with health beliefs an example of these beliefs include the attitude towards disease and medical care. The enabling factors are assisting the individual to be able to obtain health care services, things such as income, health insurance, travelling allowance, waiting time on doctor's appointments and lastly the availability of the health care providers. Lastly is the Need factors which are considered to be the most immediate cause of health service use, need factors are the perception of an individual own health status and the expectation of benefit from the treatment. As a result in this study the chosen independent variables are falling under the categories of predisposing and enabling factors these factors were all explained and discussed by Bhashar, (2012).

The following drawing that is Andersen's behavioural model of use in health services which was adopted from Andersen.

- 
- PREDISPOSING CHARECTARISTICS
    - Demographic: age, parity, education etc.
  - ENABLING RESOURCES
    - Personal or Family: health care facilities and their availability, income
  - NEED
    - Perceived morbidity and health status

The is a link between predisposing factors and need factors, because these are factors that influence the use maternal health care services (skilled birth attendant at childbirth). While the enabling factors are community based factors like norms, culture and values, which also play a huge role in influencing maternal health use. Lastly all these factors affect the use of maternal healthcare use (skilled birth attendant at birth).

## **CHAPTER 3**

### **DATA AND METHODS**

#### **3.1 Introduction**

The 2010-2011 Zimbabwe's Demographic Health Survey (ZDHS) was designed to give information on changes that took place in Zimbabwe's population and health status. ZDHS 2010-2011 was the fifth demographic health survey to be conducted in Zimbabwe. Its main objectives are to provide information on fertility, family planning, child mortality, nutrition, maternal mortality and behaviour regarding HIV/Aids prevalence among women of ages between 15-49 years old (Demographic Health Survey of Zimbabwe report, 2010-2011). The data used in this study is a secondary raw data, subjected to quality control processes to ensure reliable and valid information.

#### **3.2 Study Type**

This study used a retrospective approach to analyse secondary data collected during the Demographic Health Survey of Zimbabwe. A retrospective approach focuses on past events or situations in order to highlight what is taking place in the present (ZDHS report, 2010-2011). This approach was used as a tool to measure the reliability and validity of the study as well as to examine the quality of the results generated from it. Therefore, in order to understand the present use of skilled birth attendants by pregnant women, the information should be obtained from the trends and patterns observed from the data.

#### **3.3 Data source**

The data for this study was collected from the ZDHS report (2010-2011). The demographic Health Survey (DHS) was used as a major tool for measuring health indicators which, in turn, were also used to measure the outcome and positive aspects of health. In many cases, these indicators are used to assess the progress in health-related matters, such as, the presence of the skilled birth attendants during birth and their survival. Demographic Health Surveys are an essential data source for studies which focus on health of individuals, especially in developing countries where such information is inadequate. The ZDHS report (2010-2011) contains questionnaires that determine tools and research instruments that were used in the data collection process.



### **3.4 Zimbabwe Demographic and Health Survey**

The ZDHS was conducted in 2010-2011 followed by the recent ZDHS of 2015, they both targeted female ages between 15 and 49 years old, and this age population group represents about 89% of women who represents reproductive age.

#### **3.4.1 Sampling and Methods**

Both the ZDHS of 2010-2011 have female participants aged between 15 and 49 years old which represent about 89% of women who give birth. The data was gathered using two techniques: a direct technique and an indirect technique. In the direct technique the data were collected by Electronic personal digital assistance (EPDA) which made use of a hand-held or pocket computer. The data collection includes parameters such as educational level of the pregnant woman and of a husband, wealth index (economic status of a house hold), religion and etc. This survey was carried out under the guidance of Ministry of Health (MOH) in Zimbabwe.

In the indirect technique the data were collected by personnel of the Zimbabwe National Statistic Agency (ZIMSTAT) using paper questionnaires. The data collection was conducted from late September 2010 through March 2011. It was a follow-up data of 2005-2006 survey. The survey provides information on estimates of basic demographics health indicators, and parameters such as transportation, presence of a skilled birth attendant during birth, place of residence and geographical landscape of the pregnant women. These indicators were used to estimate the use of skilled birth attendant during delivery and the under-five mortality (death of a child before they reach 5 years old) in the past 50 years with emphasis on the 2010-2011 interval period. Secondary data are easier to use when than primary data carrying out further research as they are cost-effective and not time consuming. The survey provides information on estimates of basic demographics health indicator.

The 2010-2011 survey approved the use of Personal Digital Assistants (PDA's) rather than paper questionnaires for recording responses during the interviews. On the hand, Asus tablets were used that are only operating on Windows 8.1 software were used during data collection. These software offer more features than that of PDA's.

## 3.5 Data Collection Process

### 3.5.1 Enumerators

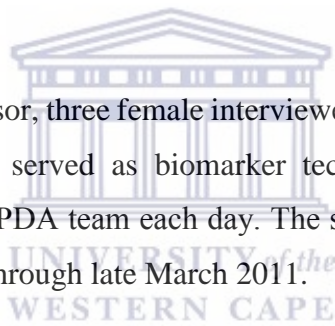
Fifteen interviewing teams carried out data collection, 2010-2011 ZDHS sample was selected using a stratified, two-stage cluster design and enumeration areas EAs were the sampling units for the first stage were as follow:

- The passed their matric, and knew how to read and write and also translate from Shona language to English.
- They belonged to areas from where they were to do enumeration.
- They were females and males interviewers.
- Overall, the sample included 406 (EAs), 169 in urban areas and 237(EAs) in rural areas.

The enumerators were trained through administering the questionnaire among each other, so to be able to understand what is needed to be done.

### 3.5.2 Supervisors

Each team consisted of one supervisor, three female interviewers, three male interviewers, and one driver. Three of the interviewers served as biomarker technicians. The supervisor received electronic files from interviewer's PDA team each day. The survey took place of a period of Six months, from 29 September 2010 through late March 2011.



### 3.5.3 Questionnaires

Three different questionnaires were used for the 2010-2011 ZDHS; namely, the household, women and men questionnaires. These questionnaires were adapted from what is known as the Model Survey instruments which was used to measure DHS project that will reflect the population and health issues that are relevant to Zimbabwe (Demographic health survey of Zimbabwe ,2010-2011). Below are the relevant issues that were identified by the questionnaires, which were used for basic information such as age, gender, education, wealth index, etc.

- Women's questionnaire as was from all women from ages 15-49 had the following topic:
  - Birth history and Child mortality
  - Marriage
  - Antenatal
  - Delivery
  - Post-natal care

- Knowledge of use of Family plan □ Fertility references
  - Women's work and Husband's background characteristics
  - Background characteristics (age, sex, media exposure, etc.)
  - Religion
  - Region
  - Skilled birth
  - Number of antenatal visits
  - Place of delivery □ Family planning
- Men's questionnaire was answered by those with ages between 15 and 54 years olds in each of the household of the ZDHS sample. It collected much of the same information found in the women's questionnaire, but it was shorter because it did not entail the reproductive history or any questions on maternal and child health as that of women's questionnaire.
- Biomarker questionnaire had results of anthropometry measurements, haemoglobin testing and HIV sample collection to be tested in laboratories. Its interviews used what is known as tablet computers that recorded all questionnaires responses during the interview (ZDHS, 2015). The 2015 ZDHS incorporated three biomarkers which included anaemia testing, anthropometry and HIV testing.
- Household Questionnaire was aimed to identify household members from visitors (2010/2011 & 2015). Information such as age, gender, education level and parent – child relationship were also collected during the survey. In addition, information related to the above was extended to children in the household under the age of 18 years old, and also focused on the survival status of parents. In particular, the data obtained from age and gender will be used as parameters to categorize women and men who would qualify for individual interview. Furthermore, the household questionnaire collected information on characteristics of household's dwellings unit, such as the source of water, ownership of different durable goods and use of mosquito nets (to access the coverage of malaria prevention programmes). The household questionnaire characteristics include household composition, housing condition, and ownership of goods and education of survey respondents.

### **3.6 Data analysis**

The univariate, bivariate and multivariate were used to analyse the data, by making use of Statistical Package for the Social Science (SPSS) software version 25. The bivariate analysis was used to see the relationship between Socio-economic and demographic factors and low – use of skilled birth attendant at childbirth. Chi-square, also known as  $\chi^2$  test, was used by the bivariate to determine if there is a significant relationship between two nominal (categorical) variables, which are the dependent and the independent variables. The frequency of each category for one nominal variable is compared across the categories of secondary nominal variable. Binary logistic regression model which falls under multivariate analysis used to study the probabilities of use of skilled birth attendants at childbirth, this was done by selecting socio-economic and demographic factors. Lastly the P-value of  $< 0, 05$  in cross-tabulation that determines the significance of the results. These testing methods were chosen because they gave the best estimation for the number of skilled birth attendant use that is congruent to the survey conducted in 2010-2011.

#### **3.6.1 Study sample size**

#### **3.6.2 Study Population**

Interviewed households were from a national representative sample of about 9,171 women ranging from ages between 15 and 49 years old, and about 7,480 men with ages between 15 and 54 years old in all selected household. Ninety three percent rate is the representation of response for women and 86% was for man. This sample gave information on estimates at national, provincial, urban and rural levels (ZDHS, 2010-2011). A representative sample for 2010-2011 ZDHS was a sample of 10,828.

### **3.7 Inclusion criteria**

#### **3.7.1 Inclusion criteria**

- All the women who were ever pregnant and gave birth, with or without the surviving of the baby after birth or before birth.

#### **3.7.2 Exclusion criteria**

- Women who are not residing in any province around Zimbabwe.
- Women aged less or more than reproductive age, that is women aged less than 15 years and women more than 49 years old.

### 3.8 Maps

#### 3.8.1 Map of Zimbabwe

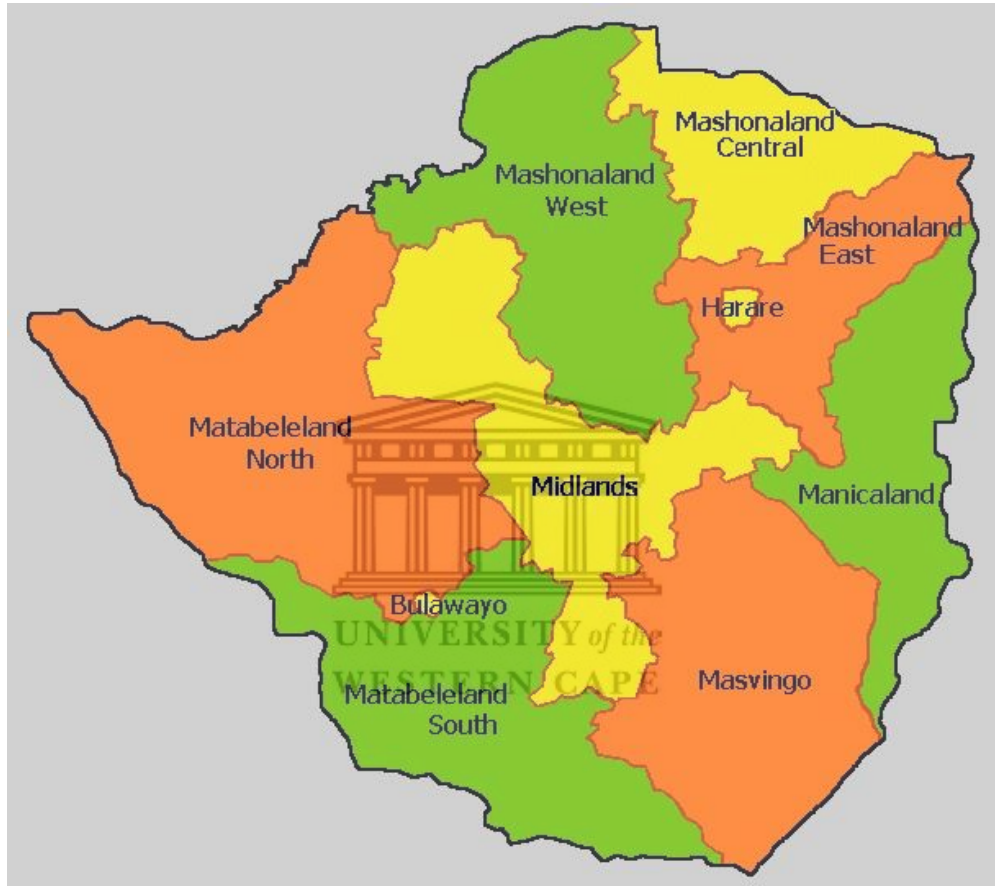


Figure 1: Map of Zimbabwe showing the regions and main town  
(Source:www.onlineschoolsdirectory.co.za)

### 3.9 Data processing and cleaning

The variables that were left after filtering the two data sets include highest level of education, place of delivery, wealth index, religion, and skilled birth, delivery by caesarean, type and place of birth, region and lastly number of antenatal visits. The subsample size of each variable after filtering the data was 9171 for 2010-2011 ZDHS. These variables were selected because they are closely related to the use and access of maternal healthcare services by pregnant women, moreover these variables will help identify factors that play a role in low-use of skilled birth attendant during childbirth.

Table 1: Shows the nine variables selected for this study

1. Age – group (15-49)	2. Delivery by caesarean	3. Highest level of education
4. New religion	5. Number of antenatal visits	6. Place of delivery
7. Region	8. Skilled birth attendants	9. Wealth Index

Source: DHS 2010, ( ) parenthesis shows number of cases

### 3.10 Dependent variable and independent variables

#### 3.10.1 Dependent variable: Skilled birth attendant

Pregnancy and childbirth are a two natural occurrence in many times an eventful process that most women aspire to have at some point in their lives. Like any other natural event pregnancy and childbirth have its own risks and complications for both the mother and the unborn. Globally, it was found that over a half a million reproductive age between the ages (15-49) die every year as a result of pregnancy and childbirth complications about 300 million suffer from debilitating injuries (WHO,2015).

WHO studies of 2015 had argued that some of these maternal deaths could be easily prevented and treatable, about 77% of these deaths take place during or immediately after childbirth and that is within 24 hours to be exact. As a result about 88% of these problems are estimated to be preventable, although over 99% of these maternal deaths in Sub-Saharan Africa could not be prevented.

Means and efforts were made by the MDG through the safe motherhood initiative to try and decrease maternal mortality globally. Studies such as those of WHO (2015) from both the perspective of developing and developed countries has shown that maternal mortality has been generally low and under control when higher proportion of deliveries are attended by skilled birth attendants.

Despite of this positive outcome there are factors that play a huge role in maternal mortality and skilled birth attendants. These factors, include socioeconomic status, availability of facilities, education, short labour duration, staff attitude, lack of privacy, reproductive behaviour, cultural tradition and religion lastly the decision making power within the household of each pregnant women.

### **3.10.2 Independent variable**

Table 2 below shows the various independent variables selected for this study and a description of each variable to make them more simple and understandable. There were many variables in the survey, the variables below were very significant for the study of maternal health care services (Low-use of skilled birth attendant at birth)

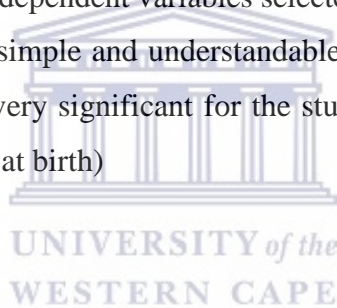


Table 2: Independent variables and their description

Independent variable	Description
Highest level of education	No education Primary education Secondary education Higher education
Region	Manicaland Mashonaland Mashonaland East Mashonaland West Mashonaland North Matabelaland South Midlands Masvingo Harare Bulawayo
Number of antenatal visits	No visit Don't know
Type and place of delivery	Urban Rural
Wealth index	Poorer Middle Richer
Place of delivery	Home Public sector Private sector
Delivery by caesarean	No Yes
New religion	Traditional Roman catholic Protestant Muslim None other
Age in 5-year group	1= "15-19" 2= "20-24" 3= "25-29" 4= "30-34" 5= "35-39" 6= "40-44" 7= "45-49"

Source: DHS 2010, ( ) parenthesis shows number of cases



### **3.10.3 Limitations of the study**

There was a lot of missing data in the ZDHS 2010-11 that made it impossible to pick up some of the needful information, lastly there is a new ZDHS released in 2015 but it could not be used for this study because this research commenced when there was only the 2010-11 ZDHS.



## CHAPTER 4 RESULTS

### 4.1 Introduction

This chapter presents analytical results regarding frequent use of skilled birth attendant during child birth, and factors that play a role in the survival of both the mother and the child, when the mother is giving birth in the absence of skilled birth attendant. Discussions in the analyses are used to answer the research questions.

### 4.2 Characteristics of women

The total number of women participants from national representative sample of ZDHS of 2010-11 was 9,171. These women ranged from a reproductive age of 15-49 years of which 93% rates the representation response for women. The following characteristics give information on estimates of national, provincial, urban and rural levels of the utilization of skilled birth attendants during delivery.

#### 4.2.1 Socio-economic and demographic characteristics

Table 3 represents the socio-economic and demographic characteristics of women. Only 41.9% of the total respondents (women) utilized skilled birth attendant when they were giving birth, while 6.0% did not use skilled birth attendant at all. Participants who did not provide information accounted for 52.1% these are the causes of a missing data. More than 64% of these women had a secondary level of education while 28.9% had primary level of education, and out of those women 2.4% had no education at all. With the median of 3.0% women 2.3% of these delivered by caesarean operation while over 40% gave birth naturally. Approximately more than 80% of women were from the protestant religion while 8.3% were from Roman Catholic Church. Only 62.5% of women were from the rural areas while the remaining 37.5% were from the urban area. More than 40% of women were from rich household according to wealth index, while 35.9% were poor households. More than 25% of women who came from poorer households.

Table 3: Analysis of selected Socio-economic and demographic characteristics 2010-2011

Characteristics	No. Cases	Per cent
<b>Delivery by Caesarean</b>		
Yes	214	2.3
No	4183	45.6
Missing	4774	52.1
<b>Highest level of education</b>		
No Education	224	2.4
Primary	2650	28.9
Secondary	5904	64.4
Higher education	393	4.3
<b>Skilled Birth</b>		
No	3841	41.9
Yes	554	6
Missing	4776	52.1
<b>Wealth Index</b>		
Poorer	3292	35.9
Middle	1589	17.3
Richer	4289	46.8
<b>Place of Delivery</b>		
Home	1411	15.4
Public sector	2524	27.5
Privet sector	460	5
Missing	4776	52.1
<b>Number of antenatal visits</b>		
No antenatal visits	398	4.3
Don't know	61	0.7
<b>Religion</b>		
Traditional	67	0.7
Roman Catholic	764	8.3
Protestant	7710	84.1
Muslim	40	0.4
None	587	6.4
Other	5	0.1
<b>Age in 5 years groups</b>		
15-19	1980	21.6
20-24	1815	19.8
25-29	1696	18.5
30-34	1287	14
35-39	1034	11.3
40-44	727	7.9
45-49	632	6.9

Source: DHS 2010, ( ) parenthesis shows number of cases

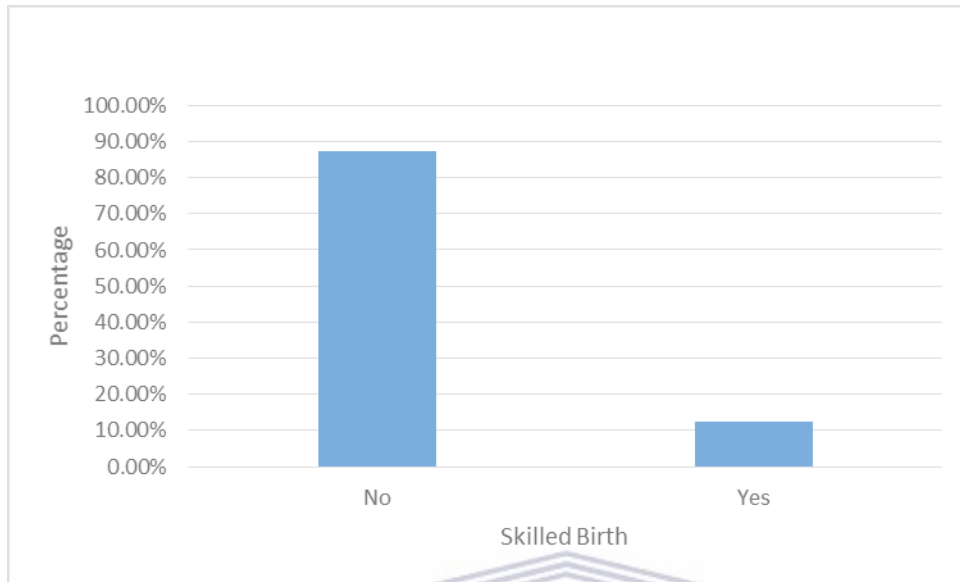


Figure 2: Number of use of skilled birth attendant

Patterns of skilled birth attendant use	Number of Cases	Percentage
No	3841	87.39%
Yes	554	12.61%
Total	4395	100.00

Source: DHS 2010, ( ) parenthesis shows number of cases

Table 4: Number of use of skilled birth attendant

#### 4.2.2 Health care utilization characteristics

Figure 2 and Table 4 shows that with a total number of 4,395 births only 13% were attended by skilled birth attendants either at home or at the health facility. Only 87% were conducted in the absence of skilled birth attendant but with the help Traditional birth attendants or family relatives of the pregnant woman.

### 4.3 Determinants of skilled and unskilled birth attendance

Chi-square test of association was performed on the following determinants of health: place of delivery, Age group, highest level of education and wealth index. The level of significance was set at 0.05 or lower. Table 5 showed that there was a significant association between skilled birth attendant and the place of delivery  $\chi^2 = 1231.09$  and  $P < 0.001$ . This was shown by the significance of P-value in the Chi-square test done.

Table 5: Association between skilled birth attendants and place of delivery

		Place of Delivery		
		Home	Private	Public
<b>Skilled Birth Attendant</b>	<b>No</b>	22.70% (873)	65.60% (2520)	11.70% (448)
	<b>Yes</b>	97.70% (538)	0.70% (04)	2.20% (12)

Source: DHS 2010, ( ) parenthesis shows number of cases.

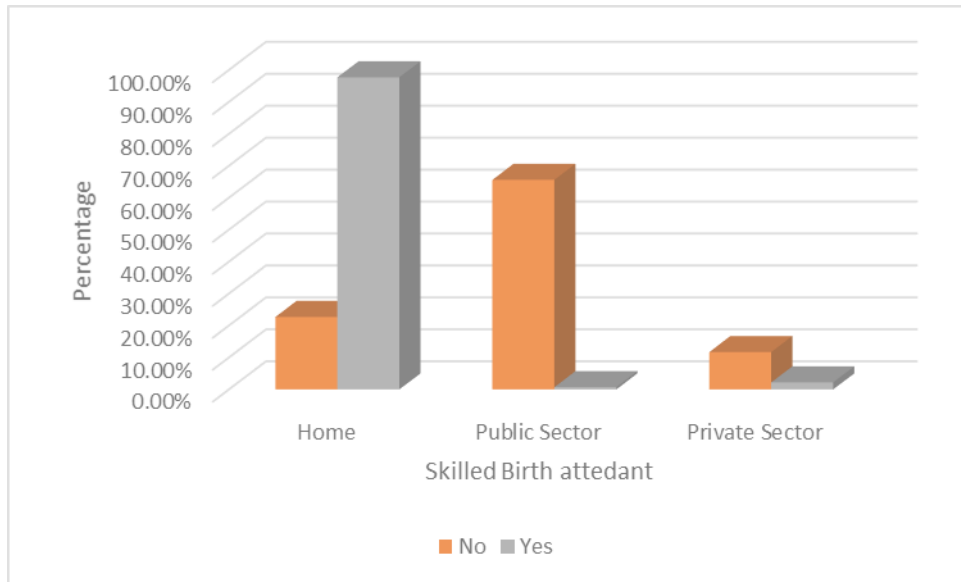


Figure 3: Association between skilled birth attendants and place of delivery



#### 4.3.1 Significance of skilled birth attendants and place of delivery

The results in Figure 3 show that 0.7 % of women chose to give birth in a public sector with the help of skilled birth attendant and were assisted by skilled birth attendants than giving birth in a private sector. Only 2.2% women chose to go to a private sector. While the remaining 97.1% gave birth at home. On the other side 22.7 % pregnant women chose to give birth at home with the presence of traditional birth attendants, while 65.6 % gave birth in public sector with the assistance of skilled birth attendant while the remaining 11.7% gave birth in the private hospital. The results show that many pregnant women chose to give birth in a public sector or home than at any other sector.

Table 6: Association between skilled birth attendants and wealth index

		Wealth Index		
		Poor	Middle	Rich
Skilled birth attendant	Yes	61.9% (343)	21.8% (121)	16.2% (90)
	No	40.6% (1558)	17.4% (668)	42.0% (1615)

Source: DHS 2010, ( ) parenthesis shows number of cases

Table 6 showed that there was a significant association between skilled birth attendant and wealth index with  $\chi^2 = 139.449$  and  $P < 0.001$ . This is shown by the significance of P-value in the Chi-square test done.

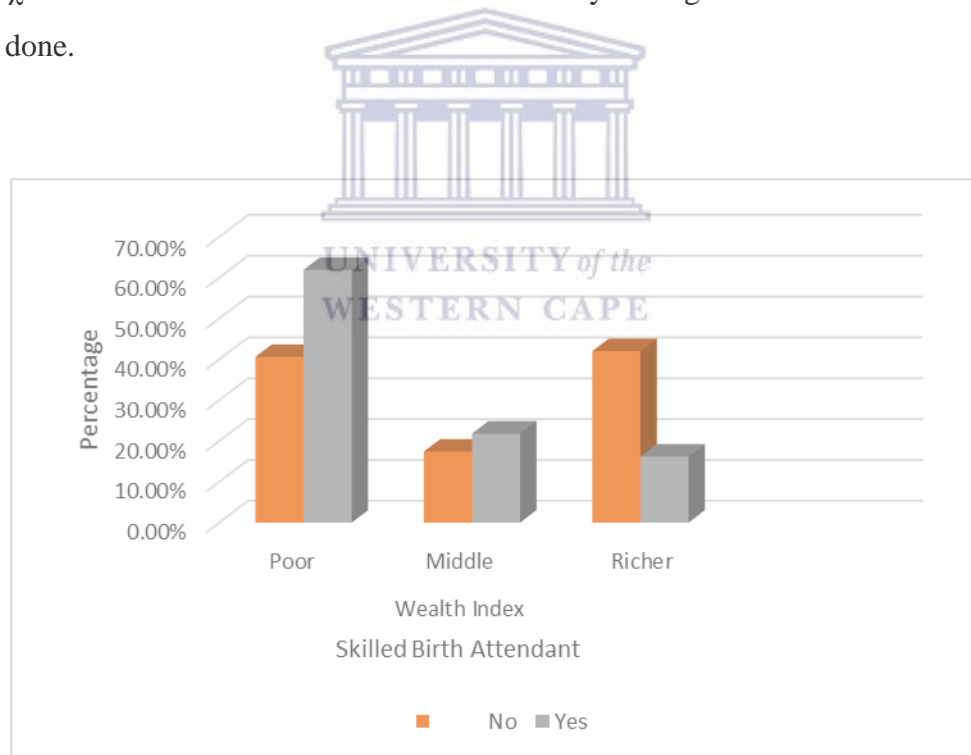


Figure 4: Association between skilled birth attendants and Wealth index



### 4.3.2 Significance of skilled birth attendants and wealth index

Figure 4 shows that 40.6 % women who were classified as belonging to the poorer background were assisted by unskilled birth attendants. A similar trend was seen with women from richer background, where by about 42. 6% also did not make use of skilled birth attendant. The 40% similar trend that is in the poorer and richer background dropped about 17.4 % in the middle background for woman who gave birth without the help of skilled birth attendants. On the other hand 61.9% of women from power background made use of skilled birth attendant, and 21.8 % is from middle background with low percentage of 16.2% from richer background.

Table 7: Association between skilled birth attendants and Age group

		Age group (years)						
		15-19	20-24	25-29	30-34	35-39	40-44	45-49
<b>Skilled Birth Attendant</b>	No	7.9% (302)	28.2% (1084)	29.7% (1139)	18.0% (693)	11.4% (438)	3.8% (145)	1.0% (40)
	Yes	9.2% (51)	28.0% (155)	26.2% (145)	17.1% (95)	12.8% (71)	5.1% (28)	1.6% (09)

Source: DHS 2010, ( ) parenthesis shows number of cases

Table 7 shows the type of assistance used at delivery by women from different age groups. The table also shows that there was no significant association between skilled birth attendant and Age group. The P-value is 0.265 this means that skilled birth attendants are independent of age group.

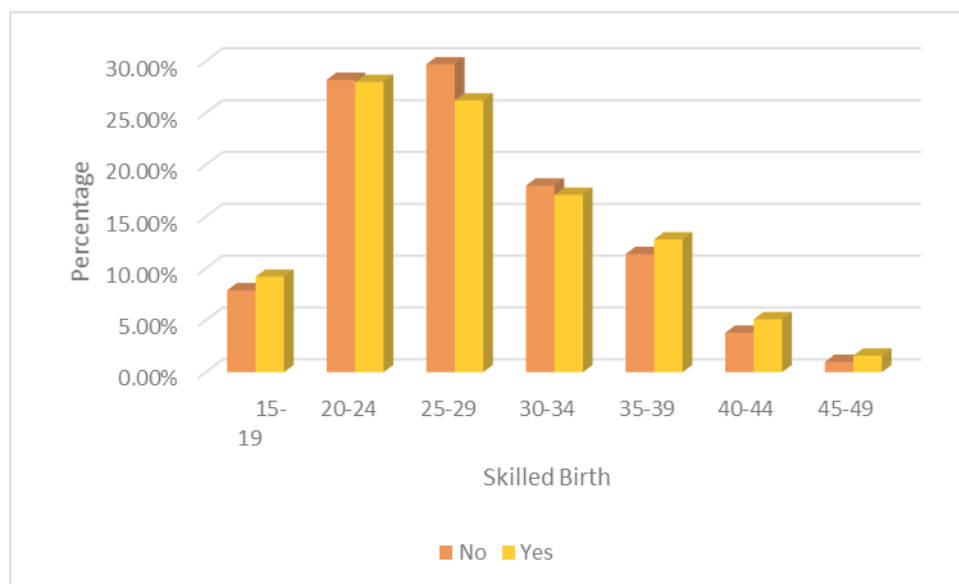


Figure 5: association between skilled birth attendants and Age groups

#### 4.3.3 Significance of skilled birth attendants and Age group

Women using skilled birth attendants increased from ages 15-19 up until the median age of 2529 by a percentage of about 9.3%, it gradually decreased by 1.62% whereas 28.2% of women between the ages 20-24 and age 25-29 did not make use of skilled birth attendant, along with 11.4% of women within the ages 35-39. The remaining lowest percent of women who did not use skilled birth attendant was 1.0% in ages 40-49, in this age it is more likely for a woman to have reached menopause. On the other side 28.5% women between the ages 20-24 and 25-29 made use of skilled birth attendant while they were giving birth. However, all these changes were not statistically significant.

Table 8: Association between skilled birth attendant and highest level of education

		Highest Level of Education			
		No education	Primary	Secondary	Higher
Skilled Birth Attendant	No	1.6% (61)	29.8% (1146)	65.3% (2507)	3.3% (127)
	Yes	3.6% (20)	45.5% (252)	50.5% (280)	0.4% (02)

Source: DHS 2010, ( ) parenthesis shows number of cases

Table 8 showed that there was a significant association between skilled birth attendant and level of education with  $\chi^2 = 78.899$  and  $P < 0.001$  this is shown by the significance of P-value in the Chi-square test done. This means skilled birth attendant is not independent of level of education a woman has instead it is dependent on level of education of a woman.

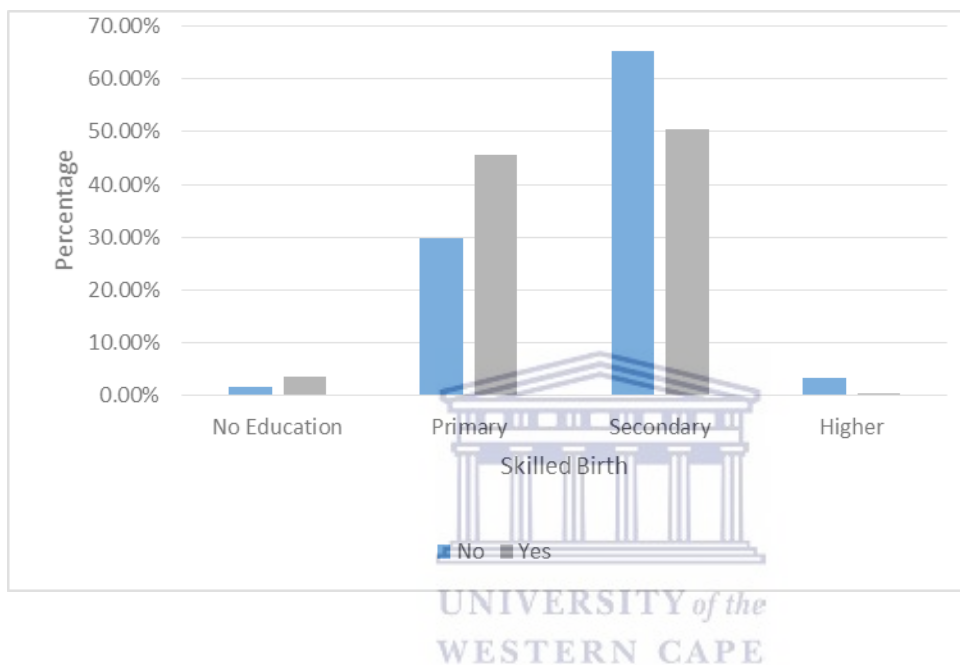


Figure 6: Association between skilled birth attendants by highest level of Education.

#### 4.3.4 Significance of skilled birth attendants and highest level of education

Women from background of no education were assisted by unskilled birth attendants or no attendant at all was 1.6%. While a huge amount of about 65.3% were from secondary education, and with a low 3.3% were from high level of education. On the other hand, 3.6% of women with no education background utilized skilled birth attendant when giving birth. 45.5% was from primary education and 50.5% from secondary education with 0.4% from high level of education background. This mean about 12.6% from all level of education utilized skilled birth attendant when giving birth, while the remaining 87.4% did not utilize skilled birth attendant when giving birth.

#### **4.4 Determinants of skilled birth attendant: Logistic regression analysis**

Logistic regression analysis was carried out by taking each independent variable and measured it with the identified dependent variable to estimate the effect of the independent variables to the dependent variable. Table 9 shows the results derived from the logistic regression analyses for access to maternal healthcare. The table also shows the odds (likelihood) of access to maternal healthcare in the study area and some of the predictor variables are not significant and that is shown by the P-value of (.000) in the Table 9.



Table 9: Determining the use of skilled birth attendant in Zimbabwe, 2010

<i>Characteristics</i>	<i>Odds</i>	<i>P-value</i>
<b>Age</b>		
15-19	.970	.808
20-24	.894	.950
25-29	.781	.807
30-34	.724	.590
35-39	.776	.487
40-44	.727	.591
<b>Place of deliverance</b>		
Home	22.699	.000
Public	.061	.000
<b>Wealth Index</b>		
Poorer	1.061	.755
Middle	1.233	.294
<b>New religion</b>		
Traditional	.087	.345
Roman catholic	.045	.227
Protestant	.047	.231
Muslim	.042	.242
None	.030	.171
<b>Number of antenatal visits</b>		
No visit	.000	1.000
Don't know	.000	1.000
<b>Region</b>		
Manicaland	1.868	.234
Mashonaland	3.112	.029
Mashonaland East	3.185	.028
Mashonaland West	1.297	.614
Mashonaland North	2.752	.057
Mashonaland South	.749	.602
Midlands	1.124	.824
Masvingo	.970	.956
Harare	.2443	.070

Source: DHS 2010, ( ) parenthesis shows number of cases

In logistic regression the Odds represents the number of times, where something is more likely or less likely to occur. Odds of  $<1$  is interpreted as less likely and Odds =1 shows that there is equal chance, meaning whatever is being compared has the same chances as the other. The Odds of  $>1$  is interpreted as more likely.

#### **4.5 The frequency of maternal health care use services and factors affecting them**

In table 9 women who delivered from home were 22 times more likely to use skilled birth attendant, while 0.061 women are less likely to use skilled birth attendant delivered from public sector. The significant observations shows that more women preferred to give birth at home than delivering from the public sector. Region is one the significant variable with only two provinces which are Mashonaland and Mashonaland East; women who reside from both the Mashonaland (3.112) and Mashonaland East (3.185) regions have the equal chance of probability of preferring skilled birth attendant, while there was no any association in the rest of the regions.

#### **4.6 Determinants of Number of Antenatal visits: Linear Regression**

Linear regression helps in predicting an outcome dependent variable, and to identify the variables in particular that are significant predictors of the dependent variable. These predictions are indicated by magnitude and the sign of (B) beta estimations. The regression estimations are used to identify the relationship between dependent variable and independent variables also known as predictor. Significant prediction of a variable is shown by a coefficient, if a coefficient is negative (-) less or decrease of whatever is being compared with and when the coefficient is positive (+) it means more or increase of what is being compared with.

Table 10: Linier regression results for factors determining the number of antenatal visits

<i>Characteristics</i>	<i>B</i>	<i>P-value</i>
Wealth index = Poorer	-.293	.001
Wealth index = Middle	-.214	.029
Age group = 15-19	-.558	.068
Age group = 20-24	-.357	.247
Age group = 25-29	-.382	.214
Age group = 30- 39	-.195	.531
Age group = 35-39	-.202	.523
Age group = 40-44	-.290	.396
Place of delivery = Home	-.658	.000
Place of delivery = Public sector	-.295	.004
Region = Macinaland	.350	.031
Region= Mashonaland Central	.141	.389
Region= Mashonaland East	.306	.066
Region= Mashonaland West	-.142	.374
Region= Matebeland North	-.365	.035
Region= Matebeland South	-.088	.601
Region= Midlands	-.234	.152
Region= Masvigo	.162	.327
Region= Harare	-.002	.988
New religion= Traditional	-1.193	.256
New religion= Roman catholic	-.350	.726
New religion= Protestant	-.560	.572
New religion= Muslim	-.976	.375
New religion= None	-.703	.481

**Adjusted R<sup>2</sup> = (3.2%)** **References,** Wealth Index= Richer, Age group= 45-49, Place of deliverance= Public sector, Region= Bulawayo, Religion= Other.



According to table 10, wealth index is a significant predictor of number of antenatal visits, from the P-value Colum which means that, being poor is associated with low number of antenatal visits compared to being richer. Number of antenatal visits for a women who belong to a poor background is decreased by (-0.293) days. Therefore being poor is associated with a low number of antenatal visits compared to being rich. Also with women who belong to middle wealth index are associated with low number of antenatal visits compared to rich women, with a decrease of (.214) days. However in the age in table 10 age was not significant, which means age was not a significant predictor of number of antenatal visits, the age of women had no link with number of antenatal visits.

In table 10 both deliveries taking place at home and public sector were found to be significant predictors for number of antenatal visits. Delivering at home is negatively associated with decrease in number of antenatal visits by (-0.658) days compared to delivering in private sector. Delivering in a public sector is negatively associated with decrease in number of antenatal visits by (-0.295) days compared to delivering in private sector. Regions that were significant predictors of number of antenatal visits were Macinaland, and Matebeland North. Staying in Manicaland is associated with increase of number of antenatal visits by (0.350) days compared to Bulawayo, and staying in Matebeland North is associated with decrease in number of antenatal visits compared to Bulawayo. While in the rest of the regions were not significant predicting the number of antenatal visits. Lastly the rest of the religions were not significantly predicting the number of antenatal visits. The dependent variable is the number of antenatal visits with the independent variables as predictors, which account for 3.2% of number of antenatal visits. The model stated that 3.2% of the variation in the number of antenatal visits was accounted by the place of delivery, wealth index, religion, and region. (This means 97.5% is not known what it is accounted for, this means more research needs to be done for 97.5% that is not known can account for anything.

#### **4.7 Conclusion**

This chapter outlines the variables that influenced the skilled birth attendant. It also focused on the maternal health facility or service, as well as to see which factors are associated with the utilization of maternal healthcare services and access of this kind of care. As shown by the results of the binary logistic regression that focuses on the likelihood of something to take place. The results shows that place of delivery or the residence of the women due for birth influences the choice of skilled birth attendant use when the women is giving birth.

## CHAPTER 5 DISCUSSION

### 5.1 Introduction

The aim of the study was to determine the factors that played a role in the low use of skilled birth attendants at delivery in Zimbabwe. Another aim of this chapter was to understand and further explain these factors broadly. This chapter consists of different subsections that are derived from objectives of this study, as mentioned in chapter one. This study was based on the 2010-11 Zimbabwe's Demographic Health Survey (ZDHS) data which includes a national representative sampling. A total number of 9,171 women took part in this study the women experiences on skilled birth attendants were used to identify the trends and patterns of the low- use of skilled birth attendants at delivery. The study was also conducted to determine factors that influence the low use of skilled birth attendants during pregnancy and child delivery.

### **5.2 Highlight the significance of the crucial function within the health system of saving the lives of both the mother and that of the new-born.**

#### **5.2.1 Place of residence and place of delivery**

Out of the 9,171 women that took part in the interview in the studied areas in Zimbabwe, the percentage of women using skilled birth attendant at delivery was only 13%, while more than 80 % of women preferred not to use skilled birth attendant when giving birth. The result shows that the use of skilled birth attendant at delivery among women was very low. Indeed the utilization of skilled birth assistant at delivery among the women in Zimbabwe was very low compared to other developing countries on the African continent. The low use of skilled birth attendant in Zimbabwe is caused by several factors such as the place of delivery. The place of delivery includes home, public sector and private sector and according to the result shows about 22.7% of women decided to give birth at home than anywhere else.

The reason for this choice is because some women prefer to give birth at home in the presence of a traditional birth attendant, a relative or neighbour because they are locally available. A second reason might be the unavailability of maternal health care services in the surrounding areas,

especially to those living in the rural areas. The distance to health facility is also an important barrier in using SBAs at delivery. This is because most of the facilities are situated in the urban areas. Additionally, all specialized hospitals and medical centres are located only in the urban areas where out of 406 Enumeration areas (EAs) in overall, 237 are located in rural areas. The lack of access to quality healthcare services and inattentiveness of health providers are also major reason why women chose not to have skilled assistance at delivery.

The study also found out that women have to travel long distances to seek maternal health, this is a double burden for pregnant women, who also do not have much financial means to pay for an available means of transport. Therefore place of delivery has a serious implication of the use of skilled birth attendant, Studies like that of Tsoka *et al*, 2003; Silal *et al*, 2012 found that distance is a barrier to use of skilled birth attendant at birth. Lastly, local culture and religious believes affect the use of skilled birth attendance at delivery. Religious leaders are known to be very influential in people in many part of Africa, they can be used as a medium of communication that will lease with department of health in Zimbabwe. This can be done in order to educate the uneducated women and the ones living in the rural areas about the importance of maternal healthcare.

Pregnancy and childbirth are significant periods in the lives of both the women and unborn child. However, pregnancy and childbirth are potentially risky and fatal experience for millions of women in countries such as Zimbabwe. Annually, more than 200 million women become pregnant in the world and about 358,000 of these women die as a result of pregnancy-related complications. The lack of sound maternal health facilities at satellite clinics around rural places and hospitals in Zimbabwe is hindering the fight against maternal deaths. This therefore results in the pregnancy-related complications which lead to death of the women and the child. About 90 % (> 11 million people) of Zimbabweans do not have access to medical aid because Zimbabwe does not have any medical insurance. The factors that highlight the significance of crucial function within health system of saving the life of a mother and that of a new-born are age-group, highest level of education, place of deliverance, region and religion.

### **5.2.2 Age-group**

According to table 7, women's age is not a significant factor influencing the use of skilled birth attendance at delivery. This means there is a negative relationship between age and the use of

SBAAs at delivery. On the other hand, table 7 indicates that older women are less likely to use SBAAs at delivery than younger ones. This could be explained by the fact that with age, women gain more experience regarding child birth which influences them not to use skilled birth assistance when giving birth. The predisposing factors are demographic factors which drive the use of maternal health care services (Young *et al*, 2005). Among the demographic factors, maternal age and maternal education are among the essential factors that are often linked to maternal health care utilization (Ibnouf et al, 2007; Simkhada et al, 2008; Regassa, 2011).

### **5.2.3 Highest level of education**

Table 8 showed that there is a significant relationship between skilled birth attendant and level of education (i.e.  $\chi^2 = 78.899$  and  $P < 0.001$ ). The study showed that there was a significant positive association between education of the women and use of skilled birth assistance at birth for both urban and rural women. Education is vital for information and knowledge of available health service. It is also an indicator for a women's higher socio-economic status that improves the ability of educated women to afford costs of health care services rendered to them. Also to have a positive perception regarding western medicine incorporated with socio-cultural behaviours.

Table 8 and Figure 6 shows that 50.5 % of women with secondary education and 45.5 % with primary have the highest percentage in choosing to give birth in the presence of skilled birth attendant. This could be explained by the fact that it is likely that education enhances the level of independence in female decision-making power, which results in improved freedom to make decisions about maternal healthcare services and use. This statement is supported by (Babalola and Fatusi, 2009; Saxena *et al*, 2013) higher levels of maternal education are directly linked to use of maternal health care services. Moreover, educated women are considered to be well equipped with knowledge and information on maternal health care services and use.

Figure 6 shows that 1.6 % of women from background of no education were assisted by unskilled birth attendants or no attendant at all. While about 65.3 % were from secondary education, and with a low 3.3 % were from high level of education and 29.8 % with primary education choose to give birth without the presence of skilled birth attendant at delivery. This can be explained by the fact that the mother prefers to be assisted by traditional birth attendant, because they have less or no knowledge about maternal healthcare facilities available. Women with higher levels of education are often more likely to implement modern health care services and are more likely to be concerned

about their health compared with women who have lower levels of education who often tend to stick to traditional methods of health (Chimankar & Sahoo, 2011). It can also be socio-economic barriers such as long distance, lack of transport and religion. In addition socio-cultural norms are also contributing factors, so much that women from rural areas in Zimbabwe have local beliefs about witchcraft during pregnancy period, resulting in avoidance of western healthcare or any other health alternatives presented to them. Lastly traditional birth attendants are seen as skilled, friendly and affordable by many women in Zimbabwe.

### **5.3 Determine the frequent use of maternal health care services and identifying factors affecting them.**

#### **5.3.1 Age group**

The age of women at first birth has an influence on health and survival of both the mother and the child (Syamala, 2004). The study of Syamala has shown that women of ages between 15 and 19 years old tend to be at a high risk of child mortality at birth compared to older women, and at this age they need to be monitored as they have little to no knowledge about pregnancy and antenatal care. This is shown in Figure 5 shows that 28.2 % of women between the ages of 20 and 24 years old, and those between the ages of 25 and 29 years old did not make use of skilled birth attendant, along with 11.4% of women within the ages of 35 and 39 years old. This could be because older women tend to believe that they are well equipped with the necessary skills needed during any complication around pregnancy period of a mother and childbirth.

#### **5.3.2 Highest level of education and Wealth index**

In studies conducted by Mosley & Chen (1989), education of a mother is an important determination of survival of the child. This is because educated mothers are well aware of the risks and benefits of modern health facilities, and can afford the cost compared to the rural and/or poor women with primary or no education at all. In Figure 6, women from background of no education that had no skilled birth attendant when they were giving birth or no attendant at all were 1.6 %, and 45.5 % were from primary education and 50.5 % from secondary education with 0.4% from high level of education background. This mean about 12.6 % from all level of education utilized skilled birth attendant when giving birth, while the remaining 87.4 % did not utilize skilled birth attendant when giving birth. From the 87.4 % of women who did not use skilled birth attendant at birth, many of them had secondary education and belong to age between 20 and 45 years old,

which indicates that they are experienced with delivery and some of them were not able to attend health facilities because of socio-economic issues.

In addition, Table 9 shows women who delivered from home were 22.70% times were less likely to use skilled birth attendant, while 0.061% women more likely to use skilled birth attendant delivered from public sector. The significant observations shows that more women preferred to give birth at home than delivering from the public sector. Region is one of the significant variables with only two provinces which are Mashonaland and Mashonaland East. Women who reside from both the Mashonaland (3.112) and Mashonaland East (3.185) regions have the equal chance of probability of preferring skilled birth attendant, while there was no association in the rest of the regions.

#### **5.3.4 Determine the frequent use of maternal health care services and identify factors affecting them.**

In this study, place of delivery (home) was associated with increased odds of delivery with skilled birth assistance, reason for this might be availability of traditional birth attendants, because home delivery is more accessible with no transport need to travel long distances for giving birth at public or expensive private sector. Also the Mashonaland and Mashonaland East were significantly associated with increased odds of delivering with skilled assistance; this is because there is a higher use of skilled birth assistance at delivery by urban women compared to rural women in Zimbabwe.

Lastly table 10 shows that wealth index, place of deliverance and region were found to be significant predictor of antenatal number of visits of a pregnant mother to a health facility. It was also found that women who belong to a poor and middle class background were associated with low number of antenatal visits compared to women who belong to a richer background. This can be explained by the fact that the richer are well educated and can afford medical aids, where they can easily access to quality healthcare compared to the poor and middle class. Regions such as Manicaland and Matebeland North were found to be significant predictors of number of antenatal visits. Macinaland showed an increase of (0.350) and Matebeland showed a decrease (0.365) in the number of antenatal visits, this can be explained by the fact that Macinaland is the county's second most populated area with lot of rural areas and there are lot of traditional birth attendants who visit pregnant women. While Matebeland is the second least populated area with districts and with educated women that have full access to medical health facilities. Age was not significant



predictor of antenatal visits, this can be because women get maternal experience and knowledge as they get older, and after they give birth to two or more children they prefer not to go for antenatal visits for they know what is expected.

A good source of income means a better access to maternal health care services, woman with high socio-economic status (wealth index or source of income) make use of skilled birth attendant at childbirth compared to woman from low or middle wealth index homes (Chimankar and Sahoo, 2011).

#### **5.4 Limitations of the study**

There are several limitations, especially in the interpretation of this study. Firstly the study was based on the analysis of the 2010-11 ZDHS secondary data set, and a recent 2015 ZDHS primary report has been published. Therefore this study does not include the analysis of 2015 ZDHS data set because the study started before the recent survey. The analysis of the cross-sectional nature of the data can only give evidence of association between independent variables, and the use of skilled birth attendants at delivery and not the case-effect relationship between them. There are also other factors like psycho-social, cultural, and attitude of healthcare givers that the 2010-11 ZDHS did not cover. These factors play a enormous role in decision making of a pregnant mother regarding skilled birth attendant use at delivery. Therefore there is no additional information concerning these factors. Nevertheless the information on the studied variables in the ZDHS is important and valid.

#### **5.5 Conclusion**

This chapter was to discuss finding from the analysis done in chapter 4 of the study, to further explain and outline the factors that affect the low-use of skilled birth attendant in Zimbabwe. It also showed how these effect vary according to Socio-economic and demographic factors within the use maternal health care services. The following chapter will deeply go on conclusions of this study through the objectives of the study.



## CHAPTER 6

### CONCLUSION

According to the results in chapter 4, shows that the number of women in the studied area of Zimbabwe showed a very low use of skilled birth attendant during pregnancy and at delivery. In these areas of Zimbabwe not all pregnant women seek antenatal care, as a result only less than half of many deliveries had skilled birth attendant's assistant. The results in this study showed that the determinants of skilled birth attendants during delivery are greatly determined by sociodemographic, socio-economic, cultural context and service related issues. The major factors that are identified in the study are place of residence and deliverance, wealth index, highest level of education and frequency of antenatal care services.

The importance of skilled birth attendant at childbirth cannot be stressed enough, therefore it is important to study and understand factors that contribute to maternal and child deaths so as to reduce the maternal mortality ratio in developing countries, particularly in rural areas. There are a lot of various factors to consider that are negatively influencing the use of skilled birth attendants at delivery by both the pregnant women and the unborn child in Zimbabwe. Awareness needs to be raised concerning skilled birth attendants at birth for both men and women who are expecting a child; this can be done using local human resources such as political leaders, schools, village chiefs and the mass media at large. This can later be accompanied by improving access to maternal healthcare facilities, a long term strategy can be access to family planning. Women from rural areas were found to be at a greater disadvantage in using SBAs due to low wealth index, where distance becomes a major factor. This can be improve by having mobile maternal clinics and educate the Traditional skilled birth attendants (TBA) of these villages more about maternal health issues. These health issues include advice by a health worker on place of delivery, they can also be taught on danger signs of pregnancy and delivery.

Mass awareness program must be offered by Zimbabwe Department of Health, on how to use these services offered to them. The role played by TBAs in child deliveries that is rooted on their societies, cultural beliefs, values has been neglected since the introduction of Western medicine in many developing countries. TBA is an integral resource to many rural areas of Zimbabwe; the government needs to pay attention to an everyday increase of maternal mortality rates of Zimbabwe. In giving attention many lives would be saved by training TBAs on sociocultural

practices that are related to pregnancy, child birth and taking care of the child and the mother after birth in villages.

Location is one of the main predictors of use of skilled birth attendant at birth. In Zimbabwe, high maternal mortality is due to lack of poor transportation, poor acceptance of Western health care services and insufficient equipment and drugs, with a major concern of poverty in the country. Women who live far away from the health facility will tend to use facilities less often than those whose place of residence is located closer to the facility. This is identified by the decline of skilled attendance at delivery, where the rural health facilities are managed by assisting nurses or general staff, who are not well trained on provision of maternal health care. It is for this reason that TBAs should be trained on safe delivery methods, trustworthiness, respect, transparency, willingness to learn, and sharing of knowledge throughout the whole village. Factors such as cultural is significant barrier in reducing maternal mortality rates in the community, because a lack of understanding of cultural beliefs and practices results in a lack of support for the health system, thus leads to delayed attendance of antenatal clinics as well as home birth by TBAs.



## 6.1 Policy implication

Efforts of creating an enabling policy environment for implementation of different maternal, neonatal and child health programmes have to be made by the government of Zimbabwe. Reproductive Health Policy and Guidelines must be developed over time so as to come up with strategies of bringing maternal health awareness. Therefore it is recommended that traditional birth attendants be trained properly about child delivery, for the benefit of the pregnant women. They should be taught about family planning, birth order and maternal healthcare issues, this will help raise an awareness on maternal mortality and the importance of having a skilled birth attendant present when giving birth.

The local culture and religious beliefs play a big role in a decision making of a pregnant women concerning use of skilled birth attendant at birth. This two platforms are very influential in African communities, they can help in bringing across awareness of maternal health issues. Many traditional birth attendants need equipment, drugs and supplies from health department, therefore political parties involvement can come in handy on this regard. Several initiatives to alleviate the human resource issues facing the health sector have been made, “brain drain” of health professionals has been introduced some of the major factors for low use of skilled birth attendant at delivery by both rural and urban residents. Therefore there will be a need of training midwives for the country for primary health care, so as to fill in the nursing posts that are always vacant in the rural health facilities due to brain drain.

Having a male figure as the head of a household becomes a barrier in deciding the use of skilled birth attendant at birth by pregnant women. Therefore such household must be educated and made aware of delivery complications, if there are delays when the mother is about to give birth. Lastly variables such as age and sex of the head of household survey would have had a great impact on this study and other future studies as the heads of the household are always decision makers especially on health related matters. Traditional birth attendant needs to activate and improve their skills like those of skilled birth attendant at delivery, this can be done by having mobile clinic that visits every two weeks until they master he skills.

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