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**Accessibility and use of prenatal facilities in the developing world by young
mothers aged from fifteen to nineteen years old**

**A thesis submitted in fulfillment of the requirements for the degree of the MPhil in
Population Studies, Department of Statistics, Faculty of Natural Sciences, University of
the Western Cape.**



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2013

KEYWORDS

- Developing countries
- Young mother
- Accessibility
- Prenatal care
- Health facilities
- Professional health providers
- Safe motherhood
- Millennium Development Goals
- Socio-economic factors
- Demographic factors



ABSTRACT

Background: Professional health assistance is a significant indicator in monitoring progress towards Millennium Development Goal five to reduce the maternal mortality ratio by three quarters and child mortality by two-thirds between 1990 and 2015. It is also significant that mothers deliver their babies in an appropriate setting, where life saving equipment and hygiene can also help reduce the risk of complications that may cause death or illness to mother and child. But in developing countries access to health services is still an issue.

Objective: From a fundamental research view point, this study aims to investigate the determinants of place of delivery and professional health providers by analysing the factors that are likely to influence young mothers' accessibility and use of prenatal facilities in the developing world. Specifically in Kenya, Ethiopia, Nepal, Bangladesh, Guyana and Haiti.

Methodology: Univariate and bivariate analysis were performed to determine a relation or association between dependent and independent variables. Using secondary data from Demographic and Health Survey secondary data requested from the DHS selected between 2005 and 2010, the analysis was performed by means of SPSS software. Bringing together the demographic variables and access and the use of health services related variables, the study captures the differences and similarities across these countries.

Results: The study has identified the main factors influencing the use of professional health providers and health facilities according to the variables examined from the DHS. The finding showed the use health facilities for delivery, professional health providers were influenced by economic status of young mothers, level of education, place of residence, religion, marital status, in all six countries. Access to health facilities was much influence availability of transport, the presence of health providers at facilities and availability of drugs at facilities. Family members' knowledge about the importance of delivering a baby at health facilities was found to be the strongest predictors of use of health facilities for delivery in all six countries. These findings suggest that these factors cited are associated with access and use of professional health providers and health facilities, and should be the target of interventions aimed to increase the use of prenatal facilities and professional health providers among young women in these countries in order to improve maternal and child health in accordance with Millennium Development Goals four and five.

DECLARATION

I declare thereby that this thesis “ accessibility and use of prenatal facilities in the developing world by young mothers aged from fifteen to nineteen years old” unless specific indicated to the contrary in the text, is my own original work and it has not been previously submitted for any degree or examination at any other university. All the source/ authors I have used or quoted have been indicated and acknowledged as complete reference.

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ACKNOWLEDGEMENTS

I would like to thank the Almighty Jehovah God of universe for giving me the strength that I needed in order to achieve the present work; for being alongside of me for all the achievements, which I have been able to attain in my entire life.

Sincere recognition and thrilled belong to my supervisor Dr Nancy Stiegler, who despite other many responsibilities she had, she putted her time and energies for the fulfilling of this work. She inspired me with diligence, to performer and deliver work to her expectation at all times. Under her supervision I grew and developed academically.

I would like to extend my deepest thanks to my dearly loved husband Desirhee Tshiamala K., for his love, resilience, dedication, inspiration and encouragement during this period.

To my father Kabongo Felix Mendes. who never ceased to play a good role model for his children even though he was far away.

To my mother Jacqueline Nsanga K. for her good guidance that makes me a great woman in my household and my society, you will not be forgotten.

To all my children, niece and nephew, brothers and sisters; to all my family and related please find your parts in this work.

Finally I wish to extend my deepest appreciation to everyone who made the present work achievable and who helped turn my ideas and objectives into realities. You will never be forgotten.

E. Muika Kabongo

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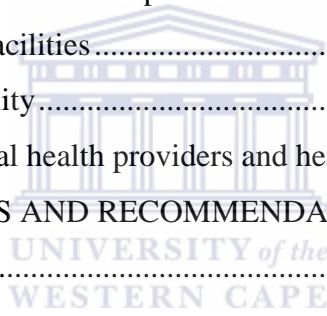


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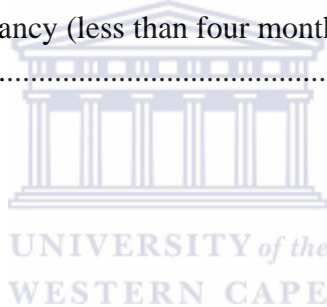
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ACRONYMS AND ABBREVIATIONS

PNC: Prenatal care

BDHS: Bangladesh Demographic and Health survey

DHS: Demographic and Health Survey

EAs: Enumeration Areas

EDs: Enumerations districts

EDHS: Ethiopia Demographic and Health survey

GDHS: Guyana Demographic and Health survey

HDHS: Haiti Demographic and Health survey

ICPD: International Conference on Population and Development

IRIN: Integrated Regional Information Networks

KDHS: Kenya Demographic and Health survey

NDHS: Nepal Demographic and Health survey

NGO: Non-Governmental Organization

PHO: Professional Health Providers

PNC: Prenatal care

UN: United Nations

UNICEF: United Nations Children's Fund

UNFPA: United Nations Population Fund

UNDP: United Nations Population Development

USAID: United States Agency for International Development

SMS: Safe Motherhood Strategies

SPSS: Statistic Package for Social Science

TBA: Traditional Birth Attendant

WHO: World Health Organization



CHAPTER ONE: INTRODUCTION

1.1 Background of study

Young women experience many health issues related to pregnancy and delivery (Singh, Rai, Alagarajan, and Singh, 2012). Fertility rates and teenage pregnancies are higher in developing countries (Reynolds, Wong, and Tucker, 2006; World Bank, 2013), early marriage is common, with girls marrying shortly after puberty and sometimes even before (Mahfouz, 1995). The World Health Organization (WHO) affirmed that about six million young women aged between fifteen and nineteen years and two million girls under the age of fifteen years give birth every year. The world health organization reported that worldwide, one in five girls has given birth by the age of eighteen, and in the poorest regions of the world, this figure rises to over one in three girls. Of all adolescent births, ninety five percent occur in low and middle income countries, and these births are more likely to occur among poor, less educated and rural populations (WHO, 2012). Parenthood is a positive and life enhancing experiences for many young girls, about ninety percent of adolescent births occur within marriage in developing countries (WHO, 2008).

One relevant issue is that teenage pregnancy has been regarded as a high risk pregnancy (Lao and Ho, 1997), since it has been associated with increased levels of difficulty in pregnancy outcomes (Swann, Bowe, Kosmin, and McCormick, 2003), such as foetal growth retardation or low birth weight (Lao and Ho, 1997; Phipps, Sowers and Demonner, 2002), and infant mortality (Phipps, Sowers, and Demonner, 2002; Thompson, 2008). Also babies born to teenage face a significantly higher risk of death compared to babies born to older women (Finlay, Zaltin, and Canning, 2011). Similarly McCormick, Shapiro, and Starfield (1984) demonstrated that infants born to young mothers' aged under nineteen years experienced considerably higher mortality than infants born to other mothers. Likewise, reduction in infant and child mortality indirectly helps in reducing fertility by decreasing the desired number of children to be born due to increased probability of survival of the child (Uddin, Hossain, and Ullah, 2009).

Furthermore, young mothers have a much higher risk of dying from maternal causes compared to women in their twenties and thirties (McCauley, and Salter, 1995; who, 2008). More importantly, Singh, Rai, Alagarajan, and Singh (2012) have claimed that early sexual activity, and childbearing accelerates the risk of maternal, and child morbidity. Mayor claims

that young mothers die because they have children before they are physically ready for parenthood (Mayor, 2004). Complications during pregnancy or delivery are recognized as leading causes of death and disability, more than any other reproductive health problems among young mothers aged fifteen to nineteen years in developing countries (Conde-Agudelo, Belizan, and Lammers, 2004; Patton, Coffey, Sawyer, Viner, Haller, Bose, Vos, Ferguson, and Mathers, 2009). Indeed maternal deaths are due to direct obstetrical complications, including haemorrhage, infection, eclampsia, obstructed labour, and unsafe abortion; that can be prevented with the presence of skilled health providers and health facilities (Medhanyie, Spigt, Dinant, and Blanco, 2012). Reynolds, Wong and Tucker (2006) point out that delivery care services, and access to emergency obstetric care, are critical in cases of complication.

With regard to the above, safe delivery is crucial to addressing maternal and newborn mortality and morbidity to promoting women's and children's health (United States Agency for International Development (USAID), 2011; WHO, 2013). As Tulchinsky and Varavikovo (2009), Graner, Mogren, Duong, Krantz, and Klingberg-Allvin (2010) and Horton (2010) argue that accessibility to health facilities as well as professional health attendance at delivery and access to emergency care are assumed to reduce maternal and child mortality and therefore promote maternal and child health. In light of these arguments, many studies have investigated this issue by focusing on women during their childbearing years aged fifteen to forty nine years. However, fewer studies were found on adolescent use of health facilities and professional providers. The present study targets young mothers aged fifteen to nineteen.

This issue is highly relevant because if we are to improve the maternal experience of young mothers, we must better understand the socio-economic and socio-demographic factors underlying this population group. On the basis of this argument, this study focuses on young mothers aged fifteen to nineteen years old in developing countries. It will highlight young mothers behaviours associated with accessibility and use of prenatal facilities. In this respect, the study uses secondary data collected from the Demographic and Health Survey (DHS) between 2005 and 2010 for the six targeted countries such as: Kenya and Ethiopia from /Sub-Saharan Africa, Nepal and Bangladesh /South Asia, and Haiti and Guyana /Latin America Caribbean. The present study aims at filling the gap on young mothers' accessibility and use of prenatal facilities.

1.2 General overview of health policy and organization

Health policy refers to decisions, plans, and actions that are undertaken to achieve specific health care goals within a society (WHO, 2013). The fifty eight World Health assembly called for health systems to move toward universal coverage, where all individuals have access to preventive, curative and rehabilitative health interventions for all at an affordable cost, by achieving equity in access (World Health Organization, 2005). In addition the 1994 Summit of the Americas, which was held in the city of Miami, Florida, United States, concluded that health reforms must comprehensively address the various culture, geographic, and financial barriers that determine inequity in access to health care among marginalized populations (Summit of the America, 2005). Moreover Hongoro, and McPake (2004) argue that the way the health system is funded, organized, managed, and regulated affects health workers' supply, retention, and performance. Similarly Gilbert, Herzig, Thakar, Vilorio, Bogetz, Danley, Jackson, and Gerbert (2007) argue that health providers are strongly influenced by their practice setting, including their own perceptions of the practice setting.

1.2.1 Safe motherhood and child survival

The Safe Motherhood International Conference held in Nairobi in 1987 had as a main goal to raise global awareness of the impact of maternal mortality and morbidity (Maine, and Rosenfield, 1999). And draw attention to the consequences of poor maternal health in developing countries and mobilize action to address the high rates of deaths and disability in order to find solutions (United Nation Population Fund (UNFPA), 2013). Other conferences have had the same aim. This is the case of the World Summit for Children in 1990, the International Conference on Population and Development in 1994 held in Cairo, the Fourth World Conference on Women in 1995 (Obaid, 2009; Hogan, Foreman, Naghavi, Ahn, Wang, Makela, Lopez, Lozano, and Murray, 2010; UNFPA 2013), the 1997 Safe Motherhood Initiative Technical Consultation, and the 1999 International Conference on Population and Development+5 (Stanton, Blanc, Croft, and Choi, 2007).

Safe Motherhood Strategies were developed based on pregnancy, antenatal care, delivery care and the postpartum periods (WHO, 1994); and the specific activities and pillar of safe motherhood included the provision of antenatal care, clean and safe delivery that is skilled assistance in health facilities for normal deliveries, appropriate referral for obstetric complications, postnatal care, family planning and other reproductive health services (WHO, 1994; Barker, Bird, Pradhan, and Shakya, 2007; Haque, 2009). However, the most

influential of the recent agreements was the United Nations (UN) Millennium declaration, signed by all 189 heads of state at the United Nations General Assembly in 2001. In generation of the “health for all” they specified eight aims and measurable targets among them improving maternal and child health (UN, 2001). Under Millennium Development Goal five and four, countries are devoted to reducing maternal mortality by three quarters and the rate of under five mortality rate by two-thirds between 1990 and 2015 (WHO, 2013).

However, in the Millennium Declaration universal targets for skilled attendance at birth were not specified. Yet, such targets were established by the 1999 United Nations International Conference on Population and Development+ five. This agreement, which was signed by 179 countries representatives, set a goal of forty percent of all births to be assisted by a skilled attendant by 2005, with fifty percent coverage by 2010 and sixty percent by 2015 among countries with very high maternal mortality. Internationally the goal was to have eighty percent of all births assisted by skilled attendants by 2005, eighty five percent by 2010 and ninety percent by 2015 (Stanton, Blanc, Croft, and Choi, 2007). Moreover, development of policy of skilled birth attendants embodies commitment to skilled attendance at every birth, whether at home or in a health facility (Campbell and Graham, 2006). The proportion of births assisted by trained birth attendants became an important indicator to measure the progress of improving maternal and child health (Sach and McArthur, 2005; Stanton, Blanc, Croft, and Choi, 2007).

1.2.2 Health system and human resources

Health systems can be defined as “all the activities whose primary purpose is to promote, restore, or maintain health” (Kruk and Freedman, 2008). The World Health Organization defines the health system goals to be the delivery of effective preventive and curative health services to all populations, equitably and efficiently, at the same time as protecting this population from catastrophic health care costs (Kruk and Freedman, 2008). Likewise, Walley, Lawn, Tinker, De Francisco, Chopra, Rudan, Bhutta, and Black (2008) argue that strengthening of the health care system by accepting the goals and reiterating firm political and social commitment to achieve the Primary Health Care (PHC), is a strategy declared in Alma-Ata in 1978. Primary health care is an approach to achieve both Millennium Development Goals and goals of universal access to health through acceptable, accessible, appropriate, and affordable health care (Walley, Lawn, Tinker, De Francisco, Chopra, Rudan, Bhutta, and Black, 2008). Thus primary health care, if implemented, would advance health

equity in all countries rich and poor, and as a result, promote human and nation development. However, the overall situation of the health system is poor in developing countries (Rhaman, Islam, Islam, Sadhya, and Latif, 2011), and these countries have been overwhelmed by poor health service delivery and inadequate access to modern health services for many years (Kiwauka, Ekirapa, Peterson, Okui, Rahman, Peters, and Pariyo, 2008).

Human resources have been described as “the heart of the health system in any country; it can be considered as a centre of all aspects of health care systems and a critical component in health policies (Hongoro and McPake, 2004). Human resources have been a neglected component of the health-system development in developing countries (Hongoro and McPake, 2004), and it has been pointed out as a main issue worldwide. For instance the shortage of skilled birth attendants has been widely documented for several years, but the problem persists: In 2010, the Global Strategy for Women’s and Children’s Health noted that a supplementary 3.5 million health workers were required to improve the health of women and children considerably in the forty nine lowest-income countries (UN, 2010).

Human resources for health is therefore a critical limiting factor determining the health of the population besides socio-economic, behavioural and environmental factors (Ahmed, Hossain, RajaChowdhury, and Bhuiya, 2011).

In line with the above, the World Health Statistics report (2008) demonstrates that there is big urban-rural gap in skilled professional use, and it is evident in so many developing countries due to a shortage of human resources. Likewise Black (2011) argued that shortages in skilled birth attendants are the cause of several factors, including lack of institutional and practical training, and varying standards in midwifery education, poor working conditions, remuneration, support and supervision, and lack of vocational paths. All these, make it difficult to retain midwives, especially in rural areas. Added to this, the state of the world midwifery 2011 launched at the triennial congress of the International Conference of Midwife (ICM) in Durban/South Africa, which demonstrated a significant gap between the number of midwives practicing and those needed to save lives (UNFPA, 2011).

1.3 Brief overview on the context of study

Kenya is a country situated in the eastern part of the African continent with a current estimated population of 41.61 billion, and per capita income of \$ 820 in 2011 (World Bank, 2013). Furthermore, the country is among the poorest countries in the world, and ranks low 146th out of 186 countries, on the Human Development Index in 2012 (United Nation

Development Fund (UNDP), 2013). Kenya has a maternal mortality ratio of 530 per 100,000 live births (United Nation Children's Fund (UNICEF), 2012). The under five mortality rates (defined as death of infant aged from zero to five years per thousand women of child bearing) shifted from one hundred and five in 1999 to one hundred and twenty eight in 2008 and eighty five per thousand live births in 2010. Accordingly UNICEF (2012) Kenya is not on track of reaching its target of thirty five per thousand live births by 2015. Kenya's Demographic and Health Survey 2008-9 reveals that 88.5% of young women less than twenty received antenatal care from professional health providers but only 16.6% received antenatal care in the first trimester of pregnancy while 46.6% delivered in health facilities and 47.7% were assisted by a professional health providers at delivery. The overall rate for women of childbearing age delivering with professional health assistance context is at 43.8% which is lower than the international goal of eighty percent of all births assisted by skilled attendants by 2005, eighty five percent by 2010 and ninety percent by 2015 (Stanton, Blanc, Croft, and Choi, 2007) as recommended by International Conference of Population Development (ICPD), despite the abolition of use of fees for health care services in 2004 (Carrin, James, Adelhardt, Doetinchem, Eriki, denHomborgh, Kirigia, Koemm, Korte et al., 2007). Kenya has a strategy called the Kenya Essential Package for Health which is assumed to reduce fragmentation and improve continuity of care. This strategy emphasizes the inter-connection of the various phases in human development, including attention during pregnancy to improves the chances of safe delivery (Kenya Health system 2005-2010).

Ethiopia is a country located in eastern Africa, and is one of the world's poorest countries with the lowest per capita income of US\$370. With an estimated actual population of 83, 73 million in 2011(World Bank, 2013), Ethiopia ranks low on the Human Development Index 173 out of 186 countries in 2012 (UNDP, 2013). According to UNFPA report under five mortality rates went down from 210 per thousand live births in 1999 to 109 in 2008 and 106 in 2010. Accordingly Ethiopia, is on track of reaching its target of seventy per 1000 live births by 2015 (UNICEF, 2012), but the current maternal mortality ratio is higher 470 per 100,000 live births. Ethiopia's demographic and health survey conducted in 2005 reveals that the prevalence of institutional delivery was very low with only 6.3% of young mothers delivering their babies in a health facility and only 38.7% were assisted by professional health providers. Maternal mortality in Ethiopia is linked to an awfully low utilization of professional health providers and health facility delivery and even lower use of emergency obstetric care (Kruk, Paczkowski, Tegn, Tessema, Hadley, Asefa, and Galea, 2010). There

is also a low utilization of available modern health services (Fikre, Addis, and Demissie, 2012). Similarly Mengesh, Bikis, Ayele, Tessema, and Koye (2013) argue that the use of professional health care in Ethiopia is very low. Health care systems, infrastructure and reproductive health, is generally poor, with significant regional disparities in access to services and in health outcomes (Chaya, 2007). Since 2004, the government of Ethiopia has made a bold decision to strengthen and expand its primary health care system by launching the Health Extension Program to achieve the aim of universal access to primary health care (Sebastian and Lemma, 2010).

Nepal is a country located in Southern Asia with an actual total population of 30.49 million, with per capita income of \$540 in 2011 (World Bank, 2013). Nepal ranks low on the Human Development Index currently 157 out of 186 in 2012 (UNDP, 2013). Nepal has a high maternal mortality ratio of 380 per 100,000 live births (UNICEF, 2012). Nepal is on track in reaching its fixed target of forty seven per 100,000 live births by 2015. The under five mortality rate went down from 142 in 1999 to fifty one in 2008 and fifty in 2010. Fifty is close to fifty seven that is the target of reducing under five mortality by 2015 in Nepal.

According to the demographic health survey 2006 the rate of use of professional providers during pregnancy was 50.8% among young mother age less than twenty, 29.4% among them receive an adequate number of antenatal care visits and 27.7% started antenatal care in the first trimester. The same survey demonstrated that only 22.7% delivered in health facilities and 22.1% were assisted by professional health providers at delivery. The shortage of skilled health providers, limited access to basic maternal health care, poverty, illiteracy, women's low social status, a poorly developed transportation system, and political conflict are diverse factors contributing to the high rate of maternal mortality in Nepal (Bidya, 2008). Bhattarai (2008) claimed that in Nepal, in rural areas there are a limited number of maternal care facilities and a lack of trained health care professionals in local health offices and local hospitals. The shortage of medical personnel in Nepal is due to a broad immigration of health care workers (Barker, Bird, Pradhan, and Shakya, 2007).

Nepal has implemented a strategy called the support to safe motherhood programme initiated in 2005. This programme aimed to support Maternity Incentives Schemes to address the financial barrier to women accessing maternal services (Bidya, 2008). In addition, health services are still under-utilized due to cultural barriers, poor access, perceptions of poor

quality, higher cost, and a preference for care within the community (Thatte, Mullany, Khatri, Katz, Tielsch, and Darmstadt, 2009).

Bangladesh is a country located in the north-eastern Part of South Asia with an actual total populations of 150 million and per capita income of \$ 780 in 2011 (World Bank, 2013). Bangladesh is among the poorest countries in the world, and ranks low at 146 out of 186 countries on the Human Development Index in 2012 (UNDP, 2013). Bangladesh has a maternal mortality ratio of 340 per 100,000 live births. Under five mortality went down from 159 in 1999 to fifty four in 2008 and forty eight in 2010 thus Bangladesh is on track of reaching its target of fifty per thousand live births by 2015 (UNICEF, 2012). The Demographic and Health Survey 2007 reveals that 55.8% of young women less than twenty received antenatal care from skilled providers, and only 14.3% had institutional deliveries and 17.8% had skilled assistance at delivery compared to 18% of overall women of childbearing age. Bangladesh is still far from the international rate of skilled birth assistance recommended by ICDP five.

Bangladesh has also suffered from a civil war (Rhaman, 2006), which jeopardized the success of all sectors, including the health system (Banik, 2011). The overall situation of the health system is still poor in Bangladesh due to inadequate access to modern health services and poor utilization of health services (Rhaman, Islam, Islam, Sadhya, and Latif, 2011). Haque (2009) claimed that health services utilization is far under any acceptable standard in Bangladesh and women are experiencing life threatening complications during pregnancy, childbirth, and during the postpartum period due to low utilization of health services. Another relevant issue is the shortage of health providers in Bangladesh. Chwodhury, Hossain, and Halim (2009) accomplished their studies on fifty eight district Hospital, 403 Upazila health complexes, and 1445 Union health and family welfare Centres. They discovered that a large proportion of posts were vacant at all levels in Bangladesh.

Haiti is the poorest country in the western Hemisphere with per capita income of \$700, and a total population of 10.12 million in 2011(World Bank, 2013). Haiti ranks low on the Human Development Index currently 161 out of 186 countries in 2012 (UNDP, 2013). Haiti has a maternal mortality ratio of 630 per 100,000 births (UNICEF, 2012) (Pan American Health Organization, 2010). Under five mortality went down from 151 in 1999 to seventy two in 2008 and seventy in 2010, accordingly Haiti is on track of reaching its objective of fifty per thousand live births by 2015(UNICEF, 2012). Haiti is one of the world's poorest countries,

and suffers from economic, social, political, and health challenges (Estupinan-Day, Lafontant and Acuna, 2011). The economic decline and deterioration of the road system since the early 1990 has led to sharp reductions in maternal health services throughout the country (Estupinan-Day, Lafontant, and Acuna, 2011). The Health care system and information is deeply fragmented and poorly developed. There are problems with the quantity, distribution and regulation of equipment, medical supplies, and essential drugs, and insufficient human resources, who lacked skills and were poorly distributed. The physical accessibility of maternal health services in Haiti is an important predictor of use (Gage and Calixte, 2006). The Demographic and health survey 2005-6 showed that 85.6% of young women aged less than twenty were assisted by a professional health provider during pregnancy and 27.4% delivered in health facilities while 29.6% delivered under supervision of professional health providers. The total for all women of childbearing age group was 26.1% this show that many women in Haiti deliver unassisted by a skilled providers.

Guyana is considered a highly indebted poorer country. The country ranks medium on the Human Development Index presently 118 out of 186 countries in 2012 (UNDP, 2013). Guyana has a total population of 756,000 and a per capita income of \$ 2,900 in 2011(World Bank, 2013). The maternal mortality ratio is 270 per 100,000 live births (UNCEF, 2012). The under five mortality went down from 159 in 1999 to fifty four in 2008 and forty eight in 2010 thus Guyana is on track of reaching its target by 2015 (UNCEF, 2012). According to the Demographic and Health Survey 2009 (GDHS, 2009), 92.3% received antenatal care from professional health providers, 89.8% had an institutional delivery and 93.6% had assistance of professional health providers at delivery. The country has some key national frameworks such as the national Health Sector Strategy 2008-2012 which provides strategic direction to the ways in which the nation's health systems and services are organized and delivered (Pan America Health, 2009). Moreover, the health care system is highly decentralized, with the Ministry of local Government and Regional Development undertaking responsibility for managing, financing and providing health services at the regional level through the Regional Democratic councils and Regional health Authorities (Pan America Health, 2009; WHO, 2011).

However, although the use of skilled health providers rate has increased since 1990, in developing countries a majority of young women still deliver without the assistance of professional health providers and access to health facilities is still an issue (WHO, 2010; WHO, 2013). For instance the Guyana Demographic and Health Survey showed the overall

rate of skilled assistance during pregnancy at 92%, delivery assistance at 91.9% and health facility delivery at 91.9% compared with KDHS 2008-9 with the overall rate of receipt of antenatal care from professional health providers at 91.7%. The use of professional assistance for delivery was 44.3% and 42.63% delivered at health facilities. Ethiopia EDHS 2005 had a rate of receipt of antenatal care from skilled providers at 28.8%, the level of skilled birth attendants was 5.3% and the use of health faculties for delivery at 5.3%.

1.4 Problem statement

It is clear the use of skilled health providers and health facilities is a issue in some developing countries. This can be explained by lack of education, lack of awareness, lack of transport, high cost of services, poor understanding of the changes in the body, availability of services and location of facilities, cultural belief, concern over lack of privacy and confidentiality. All these issue limit access to health facilities generally in developing countries (Sendderowitz, Hainsworth, and Solte, 2003; Nwaru, Wu, and Hemminki, 2010). From the background of this study, the lower utilization of professional health providers and institutional health facilities for delivery has been linked to maternal and child mortality and morbidity. There is need to focus on the factors that determine or impact accessibility to health facilities for delivery and the use of professional providers.

This has led to investigating this issue of access and use of prenatal facilities and skilled birth attendants at delivery by identifying the factors that impact the use of prenatal facilities and professional health providers in Kenya, Ethiopia, Bangladesh, Haiti and Guyana. This investigation will target the similarities and divergences across countries in their use of these services as well as the achievement of Millennium Development Goal (MDG) four and five, so as to promote maternal and child health.

1.5 Research questions

This study attempts to answer the following question: “what are socio-economic and demographic factors that influence young mothers’ access to health facilities and use of skilled health providers? To answer this question, the following specific questions are addressed:

- To what extent is adequate antenatal care received by young mothers
- To what extent are health facilities and professional health providers used by young mothers for delivery and prenatal care?

- What are the socio-economic and demographic characteristic of young mothers who are likely to use facilities and professional health providers?
- What are the challenges that limit young mothers' accessibility and use of health facilities for delivery?
- What are the similarities and divergences in accessing and use of prenatal facilities for the countries selected?

1.6 Assumption

The studies assume that the use of professional health providers and health facilities will be influenced by young mothers' age, level of education, wealthy quintile, place of residence and marital status. Also the study assumes that early entries to prenatal care visit will influence the use of professional health providers and the use of health facilities for delivery. And place of delivery and the assistance of professional health providers' impact on child survival.

1.7 Objectives of the study

The studies main objective is to analyze the factors that are likely to influence young mothers' use of professional health providers and health facilities for delivery care in the developing world so as to achieve the Millennium Development Goals.

This studies specific objective seeks:

- To determine the prevalence of the use of professional health providers and health facilities for birth delivery.
- To identified demographic, and socio economic factors that affect young mother's use of professional health providers and health facilities for delivery care.
- To examine young mothers' main reason of not utilizing health facilities for delivery.
- To examine the impact of timing of prenatal care on use of professional health providers and health facilities among young mothers;
- To examine the impact of number of prenatal facilities on the use of professional and health facilities.
- To determine how planned pregnancy affect young mothers' use of professional health providers and health facilities.
- To analyze at least six countries selected from different continents, to highlight the main factors associated with access and use of professional health providers and determinants

of usage of professional health providers and health facilities for delivery care by young mothers;

- To compare those factors across countries, and provide recommendations on what can be done in addressing the issues in hand.

1.8 Definition of Keywords

- **Prenatal care** is a term used to describe the procedures and care that are provided to women before and during pregnancy.
- **Prenatal facilities** refer to medical private settings, general hospitals and dispensaries for prenatal and birth delivery care.
- **Young mothers** are referred in this study to women aged fifteen to nineteen years.
- **Accessibility** to health facilities is a multifaceted concept which involves awareness that one's condition needs medicals intervention, availability of services, time and distance acceptability, trust and willingness to use such services and affordability as well as incomes.
- **Professional health providers** also known as skilled birth attendants is a term defined as “exclusively referring to people with midwifery skills (for instance midwives, doctors and nurses) who have been trained to proficiency in the skilled necessary to manage normal deliveries and diagnose or refer obstetric complication (Adegoke and Broek, 2009).
- **Non-professional providers** in this study is defined as the opposite of professional health providers (such as traditional birth attendants, untrained birth attendants, health personnel, and others).
- **Developing country** is a term generally used to describe a nation with a low level of material well-being (World Bank, 2010).
- **Safe motherhood** defined as an international strategy to improve maternal and child health

1.9 Theoretical framework

The conceptual model which has dominated the study of accessibility to health facilities is the behavioural model proposed by Andersen (Aday and Andersen, 1974). In this model,

Andersen organizes factors related to facility care services utilization in three categories of individual characteristics:

- **Predisposing factors** these are factors which shape attitudes toward services use. They include the demographic variables (such as age, marital status, and wealth index, type of place of residence) and social structural variables (such as education, religion).
- **Enabling factors** are family supports as well as community resources such as availability of health care providers, availability of health facilities, characteristics of the health system and access. These enabling factors can certainly promote or inhibit the usage of services.
- **Need factors** these are factors that encompass the individual's illness or impairment that necessitates health care usage. Individuals perceived need is a basic stimulus to use of services.

1.10 Ethical considerations

The data for the study was obtained from Macro International, using the Demographic and Health Survey. This data is open to the public for research and no ethical clearance is needed.

1.11 Significance of the study

The interest of this study lies in highlighting young mothers' factors that are more likely to influence access and use of health professional assistance delivery, and institutional delivery in the developing countries. The significance of the study can be summarized in several ways. First, it contributes to improving maternal and child health that are the fourth and fifth objectives of the Millennium Development Goals. It promotes access to health facilities and the usage of professional health for delivery and prenatal care. Finally the present study also contributes to the important interventions for safe motherhood.

Health facilities utilization and use of skilled health providers are important issues to consider for each and every country as it is believed that adequate prenatal care, professional health providers at birth and institutional delivery improve the survival chance of mother and child. From a public health perspective, it is important to analyze the contextual factors affecting the use of health facilities for delivery and professional health providers at the community level, institutional and policy levels. Under the factors that influence utilization it is helpful to

identify reasons for differences in access and use of health services and formulate recommendations to encourage appropriate utilization, discourage inappropriate utilization, and promote cost effective care. This study does hope and assume that the analysis and the results on these countries will reflect and give some valuable ideas to improve the usage of professional health providers and institutional birth delivery in the countries and the developing world as a whole.

1.12 Structural breakdown of the thesis

The first chapter of this study has introduced the topic of accessibility and use of prenatal facilities by providing the background of the study, a general overview of health policy and organization, safe motherhood initiation and child survived movement, health system issues and human resources, and a brief overview on the context of the study. Also this first chapter describing the main problem that affects the use of skilled health providers and health facilities for delivery care, and then highlight the main objective of the study. The second chapter will provide the literature of previous studies, standard of prenatal care, impact of prenatal care, the role of professional health providers and health facilities then will highlight some factors that influencing accessibility and use of prenatal facilities and health providers. The third chapter will describe the research approach which will be taken to examine accessibility and use of prenatal facilities. The methodology used will be explained in term of research design and procedure techniques. Then chapter fourth will consist of the data analysis. Secondary data from Demographic and Health Survey (DHS) will be analyzed to highlights the factors associated with access and use of prenatal care and determinants of usage of health facilities for young mothers and result. Thereafter, chapter five will discuss the result of the analysis. This will take in to account all the information that shows that the objectives are achieved. Finally chapter six will provide conclusion and recommendation.

CHAPTER TWO: LITERATURE REVIEW

This chapter reviews previous studies that have investigated the issue of accessibility and use of prenatal facilities in the developing world. This review is built around the issue of health facilities used for delivery and professional health providers' assistance at delivery and antenatal care in order to promote maternal and child health. The issues of access to medical settings are reviewed in this chapter as well. The first section of this chapter presents literature on the issue of prenatal care services.

2.1 Standard of prenatal care services

prenatal care coverage can be described according to the type of provider, number of prenatal care visit visits, and stages of pregnancy at the time of the first visit as well as content of services and information provided during antenatal care (Zanconato, Msolomba, Guarenti, and Franchi, 2006). Antenatal care has also long been viewed as a screening tool to identify women at risk of developing severe complications and reduces negative outcomes such as maternal death rates, miscarriages, birth defects, low birth weight and other preventable infant problems (Bernis, Sherratt, AbouZahr, and Lerberghe, 2003). Furthermore, studies have explained the suggestion of American College of Obstetrics (Garrido, 2009; Milligan, Wingrove, Richards, Rodan, Monroe-Lord, Jackson, Hatcher, Harris, Henderson, and Johnson, 2002) that prenatal care should be built around three principles: Early and continuous risk assessment, health care promotion and referral intervention as needed.

Under normal circumstances, pregnant women should visit their prenatal provider every four weeks until the twenty eighth weeks, and then every two weeks of pregnancy until thirty six weeks and then once a week until delivery in order to have the four visits recommended (Garrido, 2009). In the developing country context, the World Health Organization recommendations four antenatal care visits with compulsory measurement of blood pressure, urine and blood tests and optimal weight and height measurement at each visit (WHO, 2003). Studies found that teenagers usually go to see their doctors much later in pregnancy than older women (Woldemicael, 2005). They are missing out on adequate antenatal care in the first trimester of pregnancy (Golddani and Bettiol, 2004).

A number of studies have shown the relevancy of antenatal care that women received during pregnancy such as advice on a range of issues including place of delivery and referral of women with complications (Zanconato, Msolomba, Guarenti, and Franchi, 2006;

Tulchinsky, and Varavikovo, 2009). Viewed from this perspective, the antenatal care visits provide an opportunity to reach pregnant women with the message about safe delivery, postnatal care and postpartum care (Ouma, van Eijk, Hamel, Sikuku, Odhiambo, Munguti, Ayisi, Crawford, Kager, and Slutsker, 2010). Attending prenatal care visits four or more times provides the opportunity for pregnant women to receive a package of services (Okoli, Abdullahi, Pate, Abubakar, Aniebue, and West, 2012). Likewise Ram and Singh (2006) showed that the level of antenatal care use was associated with assisted delivery. Further, the initiative of early and frequent antenatal care during pregnancy is important to identify and mitigate risk factors in pregnancy and encourage women to have skilled attendants at child birth (Gavin, Adams, Manning, Raskind-Hood, and Urato, 2007). An analysis of the use of maternal health services in sub-Saharan Africa showed that adolescent mothers were initiated in to antenatal care attendant even later and had poorer maternal health care than adult mothers (Gross, Alba, Glass, Schellenberg, and Obrist, 2012).

2.1.1 Impact of prenatal care

Several studies done in developing countries have widely acknowledged the benefits of prenatal care, including the reduction of neonatal tetanus (Garrido, 2009) and the reduction of perinatal mortality (Mathews and Dorman, 2006; Hollowel, Oakley, Kurinczuk, Brocklehurst, and Gray, 2011). Additionally, a study done in Brazil by Wehby, Murray, Castilla, Lopez-Camelo, and Ohsfeldt, (2009) showed that women who received good prenatal care are less likely to deliver low birth weight babies. Herbst, Mercer, Beazley, Meyer, and Carr (2003) demonstrated that mothers receiving inadequate prenatal care have been shown to have greater than one and one-half times the risk of delivering low birth weight babies compared to those receiving adequate prenatal care. Prenatal care initiation has a positive impact on birth outcomes (Dickstein, Ohel, Levy, Holcberg, and Sheiner, 2008). Another study emphasizes the impact of prenatal care on risk of giving birth to preterm or intrauterine growth retarded infants (Nwaru, Wu, and Hemminki, 2010).

A study done on the impact of prenatal care and infant survival in Bangladesh showed that babies born to mothers who received good prenatal care are less likely to be born small or premature, consequently were less likely to die during their first year (Hong and Beltran, 2007). The same study also showed that children of mothers who did not receive prenatal care were 2.47 times more likely to die in infancy than those of mothers who received prenatal care. Ouma, van Eijk, Hamel, Sikuku, Odhiambo, Munguti, Ayisi, Crawford, Kager,

and Slutsker (2010) argue that prenatal care improves maternal and newborn health which also impacts on survival and health of the infant. Women who received prenatal care were more likely to deliver safe babies than those who did not initiate prenatal care, because mothers who received prenatal care were aware of the immunization care of their children and the needs of their health. This argument is supported by a study headed by (Chakra borty et al.2002) [cited by Simkhada, van Teijlingen, Porter and Simkhada (2008)] when they reported that prenatal care during pregnancy appears to have a positive impact on the utilization of postnatal health care services.

More importantly, access to effective prenatal care leads to better use of institutional settings for delivery, postnatal care treatment and management of pregnancy, delivery and post-delivery complications (Bloom, Lippeveld, and Wypij, 1999; Ram, and Singh, 2006; Bernis, Sherratt, AbouZahr, and Lerberghe, 2003). Similarly Ochako, Fotso, Ikamari, and Khasakhala (2011) argue that early prenatal care is an important entry point for delivery care, by demonstrating the association between early timing of the first prenatal care visit and use of skilled professionals at delivery. This suggested that timing of first prenatal care is in fact a significant entry point for delivery care, as women who initiated antenatal care early were more likely to use skilled professional assistance at delivery than their counterparts who initiated prenatal care late. Early and attendee frequency were associated with the likelihood of using professional health providers during pregnancy compared to those who initiated prenatal care late and attended only a few visits (Bloom, Lippeveld, and Wypij, 1999; Mpembeni, Killewo, Leshabari, Massawe, Jahn, Mushi, and Mwakipa, 2007; Rockers, Wilson, Mbaruku, and Kruk, 2009). Similarly a study done by Akazili, Henry, Aboyi, Hodgson and Phillips (2004) in Ghana shows that women whose first prenatal care visit was during the second trimester were about 17% less likely to deliver their babies in non institutional settings whereas those who started their first prenatal care visit in third trimester were 46% less likely. Having no access to antenatal care increased the likelihood of delivery at home by 27 times, as the number of prenatal visits increases, the chances of delivering at home decreased in developing countries (Zanconata, Msolomba, Guarenti, and Franchi, 2006). Bloom and colleagues found that the use of care during pregnancy among lower to medium income women in Varanasi positively influences the likelihood of using skilled assistance at the birth. The same study also reported that women who obtained a higher level of prenatal care were more likely to use safe delivery care than those with lower prenatal care levels (Bloom, Lippeveld, and Wypij, 1999). A study done in Mali emphasized

the importance of antenatal care and counselling about pregnancy related complications for increasing the likelihood of appropriate delivery care (Gage, 2007). Therefore attendance at an prenatal service influences young mothers to select a trained birth attendant (Gulia, Sepehri, and Seriuex, 2012).

2.2 The role of professional health providers

The term professional health providers can be defined as “exclusively referring to people with midwife skills (such as doctors, nurses and midwives) who have been trained to proficiency in the skills necessary to manage normal deliveries and diagnose or refer obstetric complication (Adegoke and Broek, 2009). Also the term professional health providers has been defined as the process by which a women is provided with adequate care during labour, delivery and the early postpartum period (Graham, Bell, and Bullough, 2001). However, delivery in institutional settings attended to by a professional health provider is associated with lower rates of maternal and neonatal mortality and morbidity than home births (Stephenson, Baschieri, Clements, Hennink, and Madise, 2006). Paxton, Maine, Freedman, Fry, and Lobis (2005) argue that the main cause of maternal death is due to direct obstetric complication, haemorrhage, sepsis, complications of abortion, hypertension disorders of pregnancy, prolonged /obstructed labour, rupture uterus and ectopic pregnancy. This argument is supported by (Medhanyie, Spigt, Dinant, and Blanco, 2012; and Prata, Ndola, Passano, Rowen, Bell, Walsh, and Potts, 2011) who show that maternal mortality is a results of several complications. These complications could be prevented or managed if the woman had access to a professional health provider with the necessary back-up and support in health facilities (Bernis, Sherratt, AbouZahrs, and Lerberghe, 2003; Ronsmans, and Graham, 2006). Accordingly access to emergency obstetric care and professional health providers attendance at delivery are assumed to reduce maternal and child mortality (Huoweling, Ronsmans, Campbell, and Kunst, 2007).

Therefore women are strongly encouraged to deliver with assistance of professional health providers (Van Eijk, Bles, Odhiambo, Ayisi, Blokland, Rosen, Adazu, Slutsker, and Lindblade, 2006). Moreover, Ouma, van Eijk, Hamel, Sikuku, Odhiambo, Munguti, Ayisi, Crawford, Kager, and Slutsker, 2010) demonstrate the importance of professional health health care to provide antenatal and delivery care in order to improve some specific services such as a high rating of the quality of care offered in antenatal care and an increase in the number of deliveries with a professional health providers. The more women become familiar

with a health facility and health providers the higher the chances that they would optimally use professional health providers and facilities for delivery. This argument is supported by (Mills, Williams, Adjuik, and Hodgson, 2008) explains that going for prenatal care appears to have a positive effect on the use of delivery care.

2.3 Health facilities

Place of delivery has consistently been found to be associated with reduced maternal mortality (Stephenson, Baschieri, Clements, Hennink, and Madise (2006). However, in developing country settings there are a number of factors that can inhibit the positive effect of place of delivery. Delivery in health facilities are likely to be assisted by professional health providers who are able to recognize the sign of complications and act appropriately when a problem arises and enable to maintain of the hygienic environment during delivery (Adegoke, and Nynke Van Den Broek 2009). Referral health facilities should be available to deal with obstetrical emergency once they have been identified. Additionally institutional delivery is crucial for decreasing neonatal mortality, but many women in developing countries deliver outside of health facilities unassisted by professional health professional (Gabrysch and Campbell, 2009). For instance a study done in developing countries by Montagu, Yamey, Visconti, Harding, Young (2011) demonstrated that in Sub-Saharan Africa, South Asia, and South East Asia about eight to nine out of every ten women reported giving birth at home.

However, the decision for home delivery is not always motivated by a real preference but by numerous kinds of pressure which could be economic, social, physical, cultural or institutional (Montagu, Yamey, Visconti, Harding, and Yoong, 2011). In such a situation, women can also be assisted by an attendant who could be qualified or not. Moreover, when home deliveries occur, some go well and others lead to complications and death (Some, Sombie, and Meda, 2011). However, non-professional health providers will never replace the need for well-trained, experienced professional health providers to conduct a active management of the third stage of labour (Prata, Ndola, Passano, Rowen, Bell, Walsh, and Potts, 2011). Professional health providers and emergency obstetric care is widely acknowledged to be essential to combating high maternal mortality; their provision requires functioning of the health facilities and health systems that include trained and motivated workers, equipped facilities and rapid referral systems for complications (Kruk and Freedman, 2008). Kruk, Paczkowski, Mbaruku, Pinho, and Galea (2009) argue that the use of health facilities for delivery in developing countries is low. Since it is known that delivery

in health facilities is always accompanied by a professional health provider then the no use of health facilities for delivery or lack of any attendant make it difficult to seek assistance in the event of life-threatening complications.

2.4 Socio demographic factors determinants the use of professional health providers and health facilities for deliveries

2.4.1 Age

Young adults use of professional health providers and institutional birth is influenced by the same proximate determinants that affect the use of skilled health providers of older women of reproductive age (Singh, Rai, Alagarajan, and Singh, 2012). Studies on different developing countries showed that the age of the mother is a great predictor of services utilization. For instance a study by Nwaru, Wu, and Hemminki (2010) found that the young age of the pregnant woman was one of the most important factors that predicted and determined late start of prenatal care. Goldani and Bettiol (2004) found that adolescent aged ten to nineteen years showed a considerably greater risk of inadequate prenatal care use. Another study in Turkey by Ciceklioglu, Soyer, and Ocek (2005) showed that the use of prenatal care differs according the age of the mother. Mpembeni, Killewo, Leshabari, Massawe, Jahn, Mushi, and Mwakipa (2007) claim that younger women are just starting child bearing and are told that they are in high risk group and so they tend to fear home deliveries.

However, a study done in Kenya by Ochako, Fotso, Ikamari, and Khasakhala (2011) indicates that a large percentage of young pregnant women do not seek antenatal care during their first trimester as is recommended by the World Health Organization which may affect the type of assistance they receive during delivery.

2.4.2 Marital status

Marital status can possibly influence the preference of place of delivery and personnel assistance, via its influence on female autonomy and status or through financial resources; single or divorced women may be poorer but enjoy greater autonomy than those currently married (Ochako, Fotso, Ikamari, and Khasakhala, 2011; Gabrysch and Campbell, 2009). The same study found marital status has strong influences on timing of first ANC visit and the type of delivery assistance received. Some studies including marital status found no association with professional health providers (Mekonnen and Mekonnen, 2003; Gyimah,

Takyi and Addai, 2006) whereas some found less use of health facilities among married women (Onah, Ikeako, Iloabachie, 2006). A systematic study headed by Simkhada, van Teijlingen, Porter, and Simkhada (2008) argue that marital status is one of factors that influenced prenatal care in developing countries, among others cost, household income, women's employment, media exposures and having a history of obstetric complications were other factors that influenced antenatal care in developing countries. A study headed by Singh and colleagues investigated the factors affecting the use of maternity care services. The study findings showed a low utilization of prenatal care services among young married women in rural India (Singh, Rai, Alagarajan and Singh, 2012). Moreover, a study by Mekonnen and Mekonnen showed that single are less likely to use the services than were married women (Mekonnen and Mekonnen, 2003).

2.4.3 Place of residence

Several studies have found urban residence to be strongly associated with skilled birth attendance but not necessarily with the use of antenatal care (Celik, and Hotchkis, 2000; Navaneetham and Dharmalingam, 2002). The effect of urban residence may be due to a combination of higher income and higher availability of trained providers. Furthermore, urban areas are typically characterized by better use of maternal health services, given their infrastructural advantages compared to rural areas (Ochako, Fotso, Ikamari, and Khasakhala, 2011). A number of studies found urban - rural disparity in use of health services. For instance Alexandre, Saint-Jean, Crandall, and Fevrin (2005) demonstrate that urban residents in Haiti received an average of five prenatal visits, compared to rural residents who fell slightly below the recommended four visits. Stephenson, Baschieri, Clements, Hennink, and Madise (2006) demonstrated that urban residence augmented the likelihood of delivery of child in a health facility in Malawi, Tanzania, and Ghana. Navaneetham and Dharmalingam, (2002) argue that in Southern India women who reside in urban areas in these states were more likely to be assisted by health professionals during delivery than those who lived in rural areas. A similarly study headed by Tran, Nguyen, Nguyen, Erikson, Bondjers, Gottvall, Ascher, and Petzolt (2011) revealed that in rural areas women attended prenatal care later, had fewer visits and received fewer services than urban women. Private clinics and district hospitals were the most common choice for rural women whereas in urban areas central or provincial hospitals were the most commonly used for antenatal care. Similarly, a study on the impact of adequate prenatal care in developing countries headed by Garrido (2009)

showed that women in urban areas were more likely to use prenatal care than those women in rural areas to prevent low birth weight deliveries. The use of prenatal care varies between countries, with a great underutilization among pregnant women in developing countries (Zanconato, Msolomba, Guarenti, and Massimo Franchi, 2006; Tran, Nguyen, Nguyen, Erikson, Bondjers, Gottvall, Ascher, and Petzolt, 2011).

A study has investigated the factors affecting the use of maternity care services and found a low utilization of maternity care services among young married women living in rural India (Singh, Rai, Alagarajan, and Singh, 2012). Furthermore, a study by Schillaci, Waitzkin, Carson, and Romain (2010) compared prenatal care utilization between higher- and low-income areas of New Mexico and found that mothers from low-income areas had fewer prenatal care visits and initiated prenatal care later than mothers from higher income areas. Similarly, Celik and Hotchiss (2000) found that living in urban areas has a positive effect on the probability of using professional health providers for birth delivery in Turkey. The same study demonstrated that women living in a rural residence were three times more likely to have traditional home deliveries than were urban women. Studies done in Taiwan by (Chen, Chi-Liang Chen and Wei-Chih Yang, 2008) suggest that more effort is necessary to help reduce the disparities between women in rural areas and those in urban areas.

2.4.4 Planned of pregnancy

It is posited that women with planned pregnancies, are likely to be better prepared, emotionally and financially, for the demands of pregnancy and childbearing and more likely to take better care of themselves and the developing foetus during pregnancy than those with unintended pregnancies (Eggleston, 2000). A study done in Ethiopia by Mekonnen, and Mekonnen (2003) argue that when pregnancies are unplanned, many women may not react positively to the news that they are expecting. Fotso, Ezeh, Madise, Ziraba, and Ogollah (2009) found that women with unplanned pregnancies tend to be delivered outside of health facilities. Moreover, Eggleston (2000) demonstrates that women with unwanted pregnancies were also less likely to initiate care in the first trimester and receive an adequate number of visits recommend by the World Health Organization. However many women planned to deliver at health facility but once in labour, they lack the money to care delivery at a health facility. For instance Some, Sombie, and Meda (2011) claim that women with unplanned pregnancies were not able to afford the cost of delivery and in most cases there was no money, in such situations, so they delivered at home, expecting that all would go well.

Another study shows that many women are not accustomed to birth planning or make preparation well-ahead of time for the child birth (Tasnim, Rahman, Chowdhury, and Shahabuddin, 2009).

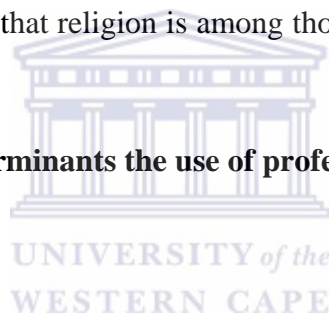
2.4.5 Religion

Religion is often considered as a marker of cultural background and is thought to influence beliefs, norms and values in relation to childbirth and services used as well as women's status. Furthermore, certain religious groups may be discriminated against by staff, making them less likely to use services. For instance, the beliefs that birth is a test of endurance, and care-seeking a sign of weakness may be another reason for delivering alone in some contexts (Kyomuhendo, 2003). Additionally, a belief that antenatal care is unnecessary, as well as an attitudinal barrier that remains separate from a woman's beliefs about prenatal care impact on the use antenatal care and delivery services. This statement is supported by Guliani, Sepehri, and Serieux (2012) which shows that religion is among those factors that deterrent the use of health services.

2.5 Socio economic factors determinants the use of professional health providers and health facilities for deliveries

2.5.1 Level of education

Mother's education is thought to influence the use of health services through multiple mechanisms: educated mothers may attach a higher value to their health, may be more willing to make themselves more aware of the benefits of preventive care, may have greater confidence in dealing with service providers, and may be more willing to travel outside their homes (Celik and Hotchkis, 2000; Navaneetham and Dharmalingam, 2002). However, many empirical research studies have revealed that educated women are aware of their well-being and that of their children Mpembeni, Killewo, Leshabari, Massawe, Jahn, Mushi and Mwakipa (2007), and education enhances female autonomy so that they develop greater confidence and capabilities to make decisions regarding their own lives, as well as those of their children. Guliani, Sepehri, and Serieux (2012) argue that the positive effect of education on health care utilization has been attributed to increased autonomy and decision making power, greater control over resources, and greater ability in accessing and processing new information. Thus education and the autonomy that comes with it influence women's decisions regarding issues such as the use of skilled health providers as well as prenatal



facilities. In addition education increases the knowledge of delivery care, thus increasing the demand for utilization of institutional delivery services (Ciceklioglu, Soyer, and Ocek, 2005).

Mothers' education has a positive effect on socio economic processes in the developing world. Some studies have shown that educated women are more aware of available modern medicine and the relevance of delivering at health facilities (Ciceklioglu, Soyer, and Ocek, 2005; Goldani and Bettiol, 2004; Celik and Hotchkiss, 2000). In a study done in Vietnam by (Trinh, Dibley, and Byles, 2007) less antenatal care utilization was found among the less educated, poor, and no insurance. Van Eijk, Bles, Odhiambo, Ayisi, Blokland, Rosen, Adazu, Slutsker, and Lindblade (2006) found that education is associated with women's antenatal care attendance. Other studies done in Bangladesh found that education level is the most significant determinant for increasing utilization of antenatal care, of place of delivery at health facilities, and of assistance at delivery (Haque, 2009). In a study conducted in Southern India, women's education was an important predictor of whether women will receive adequate antenatal care, that is four and more visits (Navaneetham and Dharmaligam, 2002), and the same study found that women with no education were more likely to deliver at home. A similar conclusion was reported in a study done in Haiti on prenatal care utilization by (Alexandre, Saint-Jean, Crandall, and Fevrin 2005) they found that the education level of both partners was found to be an important predictor of decision making seeking prenatal care from a professional provider. Another study done in Ecuador by Eggleston found that women's social and demographic characteristics such as secondary education were positively associated with prenatal care outcomes (Eggleston, 2000). Women could be educated to recognize and act on symptoms leading to potentially serious conditions and this is seen as one strategy for reducing maternal mortality. Indeed, education is linked with improved maternal and child health, and teenage pregnancy is greater among young women with relatively low levels of education (WHO, 2012). Uddin, Hossain, and Ullah, 2009) argue that maternal education has been observed as a strong predictor of child mortality in developing countries. A study by Reynold and his colleagues linked education with the likelihood that mothers are more likely to use prenatal facilities and professional health providers (Reynolds, Wong, and Tucker, 2006). Celik and Hotchkiss (2000) found that educational attainment of mothers had a positive and statistically significant impact on the use of prenatal care; they reported that mothers with one to five years of schooling were more likely to use prenatal care than mothers without any schooling. Similarly, educated women have a greater power over their circumstances, leading to greater usage of prenatal care (Alexandre, Saint-Jean,

Crandall, and Fevri, 2005). A similarly study done in Turkey by Ciceklioglu, Soyer, and Ocek (2005) showed that the use of prenatal care differs according to the level of education as well. Correspondingly, a study done in Ethiopia and Eritrea by Woldemicael and Tenkorang (2010) confirmed that the level of education of women and place of residence have a strong positive association with health facilities utilization. A systematic study headed by Simkhada, van Teijlingen, Porter, and Simkhada (2008) showed education has positive effect on use of health services. Similarly a study on contextual influences on the use of health facilities for childbirth in Africa by Stephenson, Baschieri, Clements, Hennink, and Madise (2006) explained that increased education influences service use by increasing female decision-making power, increasing awareness of health services, changing marriage patterns, and creating shifts in household dynamics. Maternal education is the main factors in influencing the reduction of infant and child mortality in Bangladesh (Hale, DaVanzo, Razzaque, and Rahman, 2009).

2.5.2 Economic status

A study done by Montagu, Yamey, Visconti, Harding, and Yoong (2011) argue that the richest women in developing countries were much more likely than the poorest to give birth in health facilities. The higher the household wealth quintile (proxy of household economic status) the more likely women sought professional delivery assistance (Mills, Williams, Adjuik, and Hodgson, 2008). A study on the impact of antenatal care in developing countries found that the fact that utilization of delivery care varies across wealth quintiles points to financial barriers, including both direct and indirect costs of accessing obstetrics care (Guliani, Sepehri and Serieux, 2012). However, poverty is considered as one of the main factors affecting use of health facilities, when there is no money to pay for care or drugs, people do not go (Some, Sombie, and Meda, 2011). This is established in a study that showed that poor people have less access to health services (Peters, Garg, Bloom, Walker, Brieger, and Hafizur Rahman 2008). Ochako, Fotso, Ikamari, and Khasakhala (2011) argue that women from rich households were more likely to seek antenatal care early during pregnancy although cost can be a barrier to seek antenatal care especially among poor women who cannot access free government health facilities. Van Eijk, Bles, Odhiambo, Ayisi, Blokland, Rosen, Adazu, Slutsker, and Lindblade (2006) found that wealth status was among the factors associated with antenatal care attendance. Further, women occupation and employment play a

important role in determining the standard of antenatal care in a community (Navaeentham and Dharmalingam, 2002).

Wealthier families are likely to use resources to travel to higher-quality clinics and private providers to overcome obstacles of availability than are less wealthy families (Peters, Garg, Bloom, Damian, Walker, William, Brieger, and Rahman, 2008). Regarding the use of health facilities for delivery a study by Guliani and his colleagues demonstrated that women from wealthier households were significantly more likely to deliver in a health facility, and this finding suggests that a health facility was a more desirable choice for those who could afford it (Guliani, Sepehri, and Serious, 2012). Senderowitz, Hainsworth, and Solter (2003) argue that the fees that are charged at the clinic might be an obstacle to access to health care for the poorer. Similar findings were found by Magadi, Madise, and Rodrigue (2000) who demonstrated that women in households of high socio-economic status have their first antenatal check 0.17 months earlier than those in households of low socio-economic status.

A qualitative study done in rural Vietnam by Graner, Mogren, Duong, Krantz, and Klingberg-Allvin (2010) describes how economic constraints prevent pregnant women from attending antenatal care, hesitance to seek higher levels of medical care in case of an obstetrical emergency and fear of complications and pain after surgery were therefore greater among women from low income households.

A study done in Europe showed that socio-economic barriers were strongly related to access to adequate prenatal care and that lack of health assurance coverage and regular income were associated with inadequate prenatal care (Delvaux, Buekens, Godin, and Boutsen, 2001).

2.6 Barrier in accessing health facilities

2.6.1 Access

All pregnant young women are at risk of developing complications during any time of their pregnancies, deliveries and postpartum periods; most of the obstetric complications cannot be predicted; but can be prevented and treated if women have access to appropriate health care with sufficient equipment supplies, medication and health facilities fully staffed with capably trained health professionals (Stekelenburg, Kyanamina, Mukelabai, Wolffers, and van Roosmalen, 2004; Zanconata, Msolomba, Guarenti, and Franchi, 2006). A study done in Mali by Gage (2007) found that the transportation barrier was more important for four or more prenatal visit and distance was barrier for delivery assistance by skilled providers and

institutional delivery. Alexandre, Saint-Jean, Crandall, and Fevrin (2005) confirms that a long travel time and great distances to health facilities constituted obstacles to repeat visits to health facilities. Freedman, Graham, Brazier, Smith, Ensor, Fauveau, Themmen, Currie, and Agarwa (2007) argue that geographic distribution of facilities for obstetric care is a challenge, especially in rural areas. Similarly a lack of access to transport was reported as a main obstacle to emergency care in rural Gambia (Cham, Sundny, and Vangen, 2005). A similar finding was also found in Ethiopia by (Mekonnen and Mekonnen, 2003) claiming that women in urban areas were more likely to use antenatal care from a healthcare professional than rural women.

Furthermore, a report of the World Health Organization by Lagarde and Palmer (2008) demonstrated that access to basic health services of acceptable quality is still denied to many of the world's poorest people. Transportation and clinic hours were mentioned as a reason for not using the services (Shaffer, 2002). Thomas and Faicloth (2009) described long waits and lack of transportation as major barriers to the utilization of prenatal care. Amaghionyeodiwe (2008) investigated the determinants of households' choice of health care provider in Nigeria and found that both distance and cost are significant factors in discouraging individuals from seeking modern health care services. A study done in Burkina Faso by Some, Sombie, and Meda (2011) found that home births were motivated by distance and road conditions to reach health facilities. Another study done in Kenya by Kitui, Lewis and Davey (2013) found that difficult in physically accessing health facilities was the most reported reason for not delivering in a health facility. About 60% gave a reason other than distance and/or lack of transport, including 20.5% of mother who reasoned that delivering in a health facility was not necessary.

Kobusingye, Hyder, Bishai, Hicks, Mock, and Joshipura (2005) argue that access to emergency care make an important contribution to reducing avoidable death and disability in low and middle income countries. Maine and Rosenfield (1999) claim that access to emergency obstetric care is one relevant intervention in reducing maternal mortality by upgrading services that people can reach, such as district hospitals and health centres. Obstetric surgeries such as caesarean delivery for obstructed labour require a hospital facility and many other life-saving procedures as well as presence of skilled health providers.

2.6.2 Availability of services

Availability can be measured in terms of the opportunity to access health care as and when needed. Previous studies have examined decisions surrounding the place of delivery (Mekonnen and Mekonnen, 2003) and concluded that poor availability of facilities is critical reason why women in the developing world give birth at home. If services are available and there is an adequate supply of services, then the opportunity to obtain health care exists, and women may have access to services. However, the common problems of limited hours, long waiting times, absentee health workers, and lack of drug stocks at public clinics are well documented in many parts of the developing world (Shaffer, 2002). Similarly Thomas and Faicloth (2009) argue that long waits, lack of transportation and child care were major barriers to the utilization of prenatal care. Women who lived near a village health worker/nurse were more likely to receive adequate and early antenatal care visits than women without a village health worker (Magadi, Madise, and Rodrigue 2000). Similar results were found in Tanzania by (Rockers, Wilson, Mbaruku, and Kruk, 2009) showing that women living in the village without health facilities were less likely to deliver in a health facility, due to the poor roads and costly transportation options for labouring women. A study headed by Peters, Garg, Bloom, Walker, Brieger, and Rahman (2008) demonstrate that access to health facilities was related to the timely use of services according to the need.

Another relevant issue relating to availability is that, in most cases facilities are not available. A study in Mali confirmed that the dearth of health facilities was a barrier to receipt of prenatal care in the first trimester (Gage, 2007). In the case when timely access to emergency obstetric care is limited women only seek professional care when they are ill, perhaps too late for a midwife or doctor to be able to save their lives (Scott and Ronsmans, 2009). Evidence shows that there is a shortage of midwives worldwide (WHO, 2012; IRIN, 2012). Thus the proportion of women attended by skilled providers was only 43% in sub Saharan Africa and 49% in South East- Asia compared with the 96% of Europeans and 92% in Americas (WHO, 2010).

2.6.3 Quality of health services

A number of studies have looked at decisions surrounding the use of health services and concluded that poor quality of services observed at facilities is a critical reasons for not using health services (Sword, Heaman, Brooks, Tough, Janssen, Young, Kingston, Helewa, Akhtar-

Danesh, and Hutton, 2012). In a study done in Nigeria, Perceived availability of equipment was a very important factor for those who delivered within health institutions and the majority of the respondents chose institutional delivery because of a perception that life-saving equipment was available in these institutions (Onah, Ikeako, and Iloabachie, 2006) and promptness of care and friendliness of staff featured prominently in this study as significant factors affecting maternity utilization (Onah, Ikeako, and Iloabachie, 2006). Moreover, Sychareun, Hansana, Somphet, Xayavong, Phengsavanh, and Popenoe, 2012) point out dissatisfaction with staff attitudes, procedures, and availability of supplies, among other things as barriers to use of health facilities (Tasnim, Rahman, Chowdhury, and Shahabuddin, 2009). For instance UNFPA (2011) demonstrated that the quality of care perceived by women at health facilities encourages them to use services, and increases the ability of health providers to save lives. Mathhole et al., (2004) cited by (Simkhada, van Teijlingen, Porter, and Simkhada, 2008) found poor quality of care and negative attitudes of service providers as barriers to health care utilization in Zimbabwe. They also highlighted poor relationships between patients and health care providers, and rude and unfriendly attitudes of nurses, as major reasons women preferred not to be referred to some hospitals. Another study by Navaneethan and Dharmalingan (2002) found that conditions and the type of quality of health services were among the main factors associated with the utilization of health care. Graner, Mogren, Duong, Krantz, and Klingberg-Allvin (2010) demonstrated that approximately all participants showed concern about lack of adequate equipment, human resources, and professional retraining as big issues that discourage them from using the services.

Another relevant concern is provider sensitivity to the health issues and cultural background of women which may directly affect their ability to communicate with women's willingness to comply with prevention and treatment such as prenatal care and delivery. Correspondingly, a study done in Spanish demonstrated that the ability of the health provider to communicate in Spanish, as well as the availability of cultural sensitivity were the main factors influencing the willingness of Hispanic women to access prenatal care services (Shaffer, 2002). Health system sensitivity and perceived practical quality have been shown to have a strong influence on women's use of health services in Tanzania (Kruk, Paczkowski, Mbaruku, Pinho, and Galea, 2009). The kind of treatment administered by health providers to women in health facilities plays a motivation role in institutional delivery (Some, Sombie, and Meda, 2011). Harveya, Ayabacab, Bucaguc, Djibrinad, Edsona, Gbangbadee, McCaw-Binnsf, and Burkhalter (2004) found that many health providers show inadequate competence at even

basic preventive and life saving procedures. Such as, identify the three elements that constitute active management of third stage labour: that is rapid application of oxytocin after delivery, immediate cutting and clamping of the umbilical cord, and controlled cord traction. A study conducted in western Kenya by Ouma, van Eijk, Hamel, Sikuku, Odhiambo, Munguti, Ayisi, Crawford, Kager, and Slutsker (2010) showed that good quality of care offered in antenatal care encouraged women to increase the number of deliveries with skilled attendant.

2.6.4 Affordability of health services

Research consistently shows that cost is an important constraint to services utilization particularly for the poor (Celik and Hotchkiss, 2000). A Turkish study found that the positive impact of health insurance coverage on utilization of prenatal care and professional health was of the same order of magnitude as that of maternal education, households wealth and urban residence (Celik and Hotchkiss, 2000). Women with high economic status were found to be more likely to receive adequate and early prenatal care than those with low economic status (Magadi, Madise, and Rodrigue, 2000).

In Burkina Faso lack of money to pay for delivery care and drugs was the main reason for home birth delivery (Some, Sombie, and Meda, 2011). For instance the expenses of Caesarean section is significantly higher than that of vaginal delivery (Long, Zhang, Raven, Wu, Bogg, Tang, and Hemminki, 2011). The ability to pay for services acts as a major determinant of access to health facilities. Graner, Mogren, Duong, Krantz, and Klingberg-Allvin (2010) demonstrated that pregnant women's use of services was influenced by economic constraints. A study conducted in Cambodia on the impact of the introduction of user fees have shown that the introduction of user fees or increases in prices lead to decreased utilization and that this effect can be larger for the poor women (Jacobs, and Price, 2004). Similarly Ciceklioglu, Soyer, and Ocek (2005) found that health insurance coverage had a positive and significant impact on utilization of antenatal care. Furthermore, user fees have been associated with a decrease in professional health providers use, so reducing or removing user fees may be an effective strategy for increasing professional health providers use. A study on determinants of skilled birth attendance in Afganistan by (Mayhew, Hansen, Peters, Edward, Singh, Dwivedi, Mashkooor and Burnham, 2008) found very low levels of skilled birth attendants among the poorer. A study done in china on affordability of institutional delivery among the poor found that expenditure on delivery was significantly

higher among those women with a high school or higher education (Long, Zhang, Raven, Wu, Bogg, Tang, and Hemminki, 2011). Lagarde and Palmer (2008) used several data series and found that after fees were removed, the growth in preventive services utilisation significantly increased. Cost was a major determinant of choice of place of delivery in Nigeria (Onah, Ikeako, and Iloabachie, 2006).

Additionally a study in the West Java Province of Indonesia explained that the major reason for both home and traditional birth attendants were economic and pragmatic, since delivery cost with a midwife or at health facility were perceived as unaffordable (Titaley, Hunter, Dibley, and Heywood 2010). Moreover, costs of services was a deterrent to hospital delivery but cultural factors and the preferences of family members also played a significant role in the decision to give birth at home (Prata, Ndola, Passano, Rowen, Bell, Walsh, and Potts, 2011). In addition a study done in China by (Nwaru, Wu, and Hemminki, 2012) explained that where health visits were perceived to be expensive, many women were unable to afford the fees, and maternal income was a factor that most predicted and determined late start of prenatal care. The same study found that mothers with less income were significantly more likely to start prenatal care late compared to those with a higher level of maternal income. Financial barriers posed by high out of pocket costs for consultations and transport may be important determinants of utilization of maternal health services, particularly in areas where poverty is high and for services that are more costly.

2.6.5 Knowledge and autonomy

Studies have also highlighted the importance of women's autonomy in influencing health services utilization. Autonomy is defined as the capacity to manipulate one's personal environment through control over resources and information in order to make decisions about oneself or family members (Dyson, 1983). Women's autonomy may extend into areas such as control over finances, decision-making power, and the extent to which they have freedom of movement. A study in a North India city found that freedom of movement was an important determinant of using trained attendants at delivery, even after taking into account a range of socio-demographic variables (Bloom, Wypij, and Gupta, 2001).

The use of health care services is influenced by cultural norms (Graner, Mogren, Duong, Krantz, and Klingberg-Allvin, 2010). The living conditions in which a woman lives can significantly affect her personal life; given these points Ochako, Fotso, Ikamari, and Khasakhala (2011) argue that educated and single women have higher autonomy to make

decisions on the quality of health care they receive. A study done in Uttar Pradesh in North India showed that women's autonomy is the major determinant of maternal health care including prenatal and delivery care, (Bloom, Wypij, and DasGupta, 2001). Women with great freedom of movement were more likely to receive prenatal care and use delivery care than those with limited freedom. The same studies revealed that women's autonomy was equally important as education and economic characteristics. Another study on factors associated with utilization and content of prenatal care in Turkey by Ciceklioglu, Soyer, and Ocek (2005) reported that among individual factors found to be related to content of prenatal care was employment outside the house. This contributed to improved autonomy of working women in making their decisions regarding the household as well as their own and children's health.

Moreover, social support from family members significantly affected the use of antenatal care. For instance in a study done in rural Bangladesh older women, especially mothers-in-law did not consider antenatal care essential during pregnancy and often discouraged their daughters-in-law from attending antenatal care (Chowdhury, 2003). The role of the husband and family support were both important issues in the women's utilization of prenatal care due to the fact that husbands become a motivator for the pregnant woman and his involvement has the ability to improve the woman's condition (Milligan, Wingrove, Richards, Rodan, Monroe-Lord, Jackson, Hatcher, Harris, Henderson, and Johnson, 2002). Having a network of social support was ideal for a healthy pregnancy (Simkhada, van Teijlingen, Porter, and Simkhada, 2008). A study done in western Kenya by Van Eijk, Bles, Odhiambo, Ayisi, Blokland, Rosen, Adazu, Slutsker, and Lindblade (2006) showed that younger mothers were more likely to be attended by their mothers or mothers-in-law than were in the case of older mothers (9% versus 1%). Furthermore, a study done in Nepal by Simkhada, Porter, and van Teijlingen (2010) reported the importance of mothers-in-law in deciding about antenatal care use by their pregnant daughters-in-law.

According to the literature review in developing countries many previous studies have found that there are many demographic and socioeconomic determinant factors influencing the access and use of pregnant and delivery care services. Including level of education, place of residence, household wealth quintile, distance to health facilities, availabilities of health facilities, and presence of health providers at facilities.

CHAPTER 3: METHODOLOGY

This chapter will discuss the data and methodology that are used in this study and utilizes a quantitative research perspective. The type of research and the context of the study will be discussed. It will also specifically highlight the participants in the study, the methods of sampling and instruments used to collect data.

3.1 The research perspective

The issue under investigation in the present study is the factors that are likely to influence young mothers' accessibility and use of prenatal facilities in the developing countries. The unit of focus was young women fifteen to nineteen years old and the units of analysis were the ones who have had at least one live birth in the five years preceding the survey. The main focus of the study will consider socio-economic and demographic factors such young mother's age, marital status, and education, place of residence, religious affiliation, and planned pregnancy. Moreover, the study will enlighten the reason for home delivery among those young mothers who delivered their babies at home.

The interest of this study lies in highlighting the factors determining young mother's use of professional health providers and access to health facilities in developing countries. Using cross-tabulation between socio-economic, demographic variables and maternal variables, the study intends to provide an idea of how young mothers access and use skilled personnel and health facilities in developing countries.

3.2 Research design

A cross-sectional, descriptive and comparative study using the quantitative perspective method has been chosen to address the research question. This research used the data sourced from the Demographic and Health Survey conducted between 2005 and 2010 in order to examine the determinants of use of prenatal facilities and health professional providers in developing countries.

The DHS as a nationwide sample survey of women of reproductive age fifteen to forty nineteen and men of age fifteen to fifty nine designed to provide information on three different groups of questionnaires. The first questionnaire recorded information on all household members. The second questionnaire recorded detailed information on eligible women who were identified using the individual questionnaire. The third questionnaires

recorded details on all men age fifteen to fifty nine living in the household. This design meets the sampling requirements as it used probability sample sampling to select all the respondents in the DHS of Kenya, Ethiopia, Bangladesh, Nepal, Guyana, and Haiti. Additionally, Demography and Health Survey secondary data is a very useful tool for this study because it provides information about young women's pregnancy and delivery and data are comparable across countries.

3.3 Instrument design

Concerning data collection, the Demographic and Health Survey questionnaire was the main tool used to collect data from the households in sampled dwelling units. The basic approach of measure in the Demographic and Health Survey program is to collect data that is comparable across countries. To achieve this, standard model questionnaires have been developed by the Demographic and Health Survey (DHS).

In all households, women aged fifteen to forty nine years old were eligible to participate but the primary concern of this study was the age group fifteen to nineteen years old who had at least one live birth in the five years preceding the survey. Women were the prime focus in this study because the questionnaires of women provided information on pregnancy and delivery for every birth in the preceding years.

A valid measuring instrument according to Kimberlin and Winterisation (2008) has been described as measuring what it is intended to measure. The instrument used to collect data for this study was a questionnaire.

3.4 Source of data

The study is based on the analysis of secondary data obtained from the Ethiopian Demographic and Health Surveys EDHS 2005, KDHS 2008-9, NDHS 2006, BDHS 2007, HDHS 2005-6, and GDHS 2009. These data were used to complement the quantitative results. The surveys are nationally representative and have been implemented to allow analysis for Kenya, Ethiopia, Bangladesh, Nepal, Haiti and Guyana as a whole and separately by rural-urban areas and by its regions. The EDHS 2005 is the second national large scale dataset on demographic and health information, the 2006 NDHS is the fourth, while the 2007 BDHS, 2005-6 DHS, 2008-9 KDHS and 2009 GDHS are the fifth. These countries were chosen according to their consistent and accuracy.

3.5 Sample design

In general, a Demographic Health Survey sample is stratified, clustered and selected in two stages. Since the data was required for each city in the county, each city was considered as an explicit stratum. The first stage involved the selection of Enumeration Areas (EAs) within each city in each country. The EAs within each city were selected using probability proportional size. In the second stage, complete listings of households were carried out in each selected cluster for the selection of dwelling units. The selection of dwelling units was based on the sampling frame which is systematically selected from each cluster for participating in the survey. All women aged fifteen to forty nine who were either permanent residents of the households or visitors present in the household on the night before the survey were eligible to be interviewed (DHS). But this study is limited only to young women aged fifteen to nineteen in the household.

3.5.1 Kenya

The KDHS collected demographic, socioeconomic, and health data from a national representative sample of 8,444 women aged fifteen to forty-nine in a sample 9,057. In the first stage a total of 400 clusters (133 urban and 267 rural) were selected from the master frame. The second stage of selection involved the systematic sampling of households from an updated list of households. A total of 9,936 households were selected in the sample, of which 9,268 were occupied at the time of fieldwork and thus eligible for interviews. Of the eligible households, 9,057 households were successfully interviewed, yielding a response rate of 98.00 percent. From the households interviewed, 8,767 women were found to be eligible and only 8,444 were interviewed, giving a response rate of 96.00 percent and the response rates were generally higher in rural than in urban areas. Furthermore, the present analyses were based on the information on 255 young mothers aged fifteen to nineteen who had a live birth within five years prior to the survey (Kenya National Bureau of Statistics: 2008-9).

3.5.2 Ethiopia

In the first stage, 540 clusters (145 urban and 395 rural) were selected from the list of enumeration areas (EA) from the 1994 Population and Housing Census sample frame. Between twenty four and thirty two households from each cluster were then systematically selected for participation in the survey. A total of 14,645 households were selected, of which 13,928 were occupied. The total number of households interviewed was 13,721, yielding a

household response rate of 99 percent. A total of 14,717 eligible women were identified in these households and interviews were completed for 14,070 women, yielding a response rate of 96 percent. Among them the number of women aged fifteen to nineteen was 3,266 but this study used only information of 441 young mothers aged fifteen to nineteen who had one live birth in the five years preceding the survey (Central Statistics Agency (Ethiopia), 2006).

3.5.3 Bangladesh

The BDHS collected demographic, socioeconomic, and health data from a national representative sample of 10,996 women aged fifteen to forty-nine in a sample of 10,400 households. At the first stage a total of 361 clusters (227 rural PSUs and 134 urban PSUs) were selected from the master frame using the 2001 Population Census. A household listing operation was carried out in all selected PSUs from January to March 2007. The resulting lists of households were used as the sampling frame for the selection of households in the second stage of sampling. A total of 10,819 households were selected in the sample, of which 10,461 were occupied at the time of fieldwork and thus eligible for interviews. Interviews were successfully completed in 10,400 households yielding a response rate of 99.4 percent. From the households interviewed, a total of 11,178 eligible women age fifteen to forty nine were identified in these households and 10,996 were interviewed, giving a response rate of 98.4 percent. Furthermore the present analyses are based on the information on 753 young mothers aged fifteen to nineteen who had a live birth within five years prior to the survey (National Institute of Population Research and Training (NIPORT), 2009).

3.5.4 Nepal

The Nepal Demographic and Health Survey collected demographic, socioeconomic, and health data from a national representative sample of 10,793 women aged fifteen to forty-nine in a sample of 8,707 households. A total of 9,036 households were selected, of which 8,742 were found to be occupied during data collection. Of these existing households, 8,707 were successfully interviewed, giving a household response rate of nearly 100 percent. In the selected households, 10,973 women were identified as eligible for the individual interview. Interviews were completed for 10,793 women, yielding a response rate of 98 percent. Moreover the present study used the information on 321 young mothers who had at least one live birth in the past five years (Ministry of Health and Population (Nepal), 2007).

3.5.5 Haiti

The HDHS collected demographic, socioeconomic, and health data from a national representative sample of 10,757. At the first stage 339 clusters were selected from the listing of households, all women aged fifteen to forty nine resident or visitors found in the dwelling unit were interviewed. At the second stage of sampling, systematic samples of households were selected from the listing of the population census 2003. A total of 9,998 households were surveyed and 10,892 women of child bearing age were identified as eligible for interview but only 10,757 were interviewed with success, the rate of response was 98 percent (Cayemittes, Michel et al , 2007). But this study used only information of 301 young mothers aged fifteen to nineteen who had at one live birth in the five years preceding the survey.

3.5.6 Guyana

The 2002 census list of the households was used as the masters' sample for the GDHS survey 2009. In the first stage of selection 330 cluster or enumeration districts (EDs) were selected from the masters' frame. The second stage of selection involved the systematic sampling of households from an updated list of households. A total of 6,376 households were selected in the sample, of which 6,042 were occupied at the time of fieldwork and thus eligible for interviews. Of the eligible households, 5,632 households were successfully interviewed, yielding a response rate of 93.00 percent. In the households interviewed, a total of 5,547 eligible women were identified. Interviews were completed with 4,996 of these women, yielding a response rate for women of 90 percent (Ministry of Health, Bureau of Statistics and ICF Marco, 2010). Moreover, the present analyses are based on the information on 173 young mothers aged fifteen to nineteen who had a live birth within five years prior to the survey.

3.6 Methods

The analysis of this study consists of three operations, description of all variables (univariate analysis), quantification of relationships between variables, and comparison of observed findings across countries. Basically, proportion was used to provide insight on the respondents. Cross tabulation (bivariate analysis) were run using secondary data from Demographic and Health Survey to investigate the determinants of access to health facilities, use of health facilities for delivery, use of professional health providers.

3.7 Limitations of the study

The study is limited to only six countries that have been selected for the study. The survey data was obtained by means of asking questions to the individual women in the household whether or not they had been consulted by a professional health provider for prenatal care, who assisted them for delivery, and where they delivered their last births. It used data from six developing countries only to smooth a comparative study, so it is not a complete comparison because all developing countries were not included in the study, but we can still have an idea on accessibility of prenatal facilities and usage of prenatal care in developing countries. However, the data lacks quality services variables that could better explain the reasons why young mothers used or did not use health facilities as well as a professional health provider.

Although the DHS series present wealth information, some limitation associated with these surveys may have affect our results. The study focused only on young mothers' use of health delivery and professional health providers and their reason for home delivery. First is recall bias. Information collected of health facilities utilization are based on women's recall of event which may be affected by the period of recall as well as the women's situation at the time of event. The study focus on the last birth in the five years and expect that young mothers are more likely to misreport or misclassify events the early the birth occurred.

3.8 Dependent and independent variables

3.8.1 Description of variable

In this study the dependent variable refers to receipt of prenatal care from professional health providers, assistance of professional health providers, and the use health facilities for delivery number of prenatal visit, timing of first prenatal visit, and place of delivery. The independent variable refers to the various socio-economic and demographic factors chosen in the DHS such as religion, level of education, marital status, wealth status, place of residence, and wanted pregnancy.

3.8.1.1 Number of antenatal visit: "How many times did you receive antenatal care?" as measured by whether young mothers had at least four check - ups or fewer than four check-ups. This is in accordance with a minimum of four antenatal visits required by the World

Health Organization to accomplish the essential level of antenatal care visits (WHO, 2003) four and more adequate versus fewer than four inadequate.

3.8.1.2 Timing of the first prenatal care visit: Young mothers were asked this question. “How many months were you when you first received antenatal care for this pregnancy?” As measured by the number of months of pregnancy at the time of first prenatal visit to determine if the first visit was made in the first trimester. That is less than four months or in second and third trimester that is four months and up, and considered as later prenatal attendance. Since anaemia is a serious and common problem in developing countries. The initiation of prenatal care in the first trimester facilitates the early diagnosis of anaemia, so that the condition can be corrected before delivery (WHO, 2003; UNCEF, 2003).

3.8.1.3 Use of providers health providers during pregnancy “Did you see anyone for antenatal care for this pregnancy? Yes who?” as measured by the frequency of yes or no of young mothers who get antenatal care from a professional health provider such as (doctor, midwife or nurse) or (health assistant, health worker, TBA or other personnel).

3.8.1.4 Use of professional health providers “who assisted you with delivery?” as measured by whether or not women had a skilled delivery attendant. A variable has been created for personnel assisted with delivery care in four categories as followed 1 = (doctor , nurse and mid wife), 2 = (TBA other personnel health) 3 = (relative and friend) and 4 = (no one), for cross tabulation a young mother was considered as assisted by a “skilled health provider” if she reported being assisted by a (doctor, nurse or mid wife) and those young mothers who reported being assisted by (TBA, relative, health worker, or other health provider are considered as assisted by “non - professional health providers”.

3.8.1.5 Use of health facilities young mothers were asked this question. “where did you deliver your last born?” Measured by whether women delivered in an institutional setting or health facilities. Facility delivery was defined as giving birth in a health care institution public hospital, private hospital or other health care institution such as (government or mission dispensary, health center or hospital), whereas no medical setting deliveries included those that occurred either at the participant’s home or the home of a friend or traditional birth attendant, and those young mothers who reported giving birth before arrival at a health facility are considered as delivered in a no medical facility.

3.8.1.6 Child mortality as measured by last child or dead. This variable was created by using the total children ever born, to see if the last child born to young mother during the past five years was alive or dead. And to see whether the child was born in health facilities or delivered by a professional health provider.

3.8.1.7 Planned pregnancy: It is a categorical variable measured by whether the child or pregnancy was wanted or not.

3.8.2 Access related variables

Young mothers were asked a question “Why didn't you deliver in a health facility?” This survey question occurs in datasets for Kenya, Ethiopia, Nepal, Haiti, Bangladesh and Guyana. As for Bangladesh the question occurred but the data was not available for this variable. Possible responses were aggregated into four categories groups.

3.8.2.1 Cost: the respondent said the cost was too high.

3.8.2.2 Access: this term was used to summarize the group facility closed, too far, and did not know where.

3.8.2.3 Not necessary: this summary term were used to group not necessary, father did not think it was necessary, family did not think necessary, husband/family did not allow, and not customary.

3.8.2.4 Abridged labour: this term was used for respondent who reported sudden labour as the main reason of home delivery.

3.9 Socio-economic and demographic variables

3.9.1 Age: In the Demographic and Health Survey the young mothers’ age was given as a single age as fifteen, sixteen, seventeen, eighteen, nineteen, and the age group fifteen to nineteen. Due to the small amount of date belonging to same age, and for the sake of analysis the single age of young women was collapsed in to tree age groups fifteen to sixteen, seventeen to eighteen and nineteen.

3.9.2 Marital status: as measured by married defined as married or living together and single defined as divorced, widowed, and never married.

3.9.3 Level of education: It is a standardized variable providing level of education in the following categories: No education or no formal education, primary, secondary and higher

levels of education. This variable was chosen because education is linked with improved maternal and child health and teenage pregnancy is greater among adolescents with relatively low levels of education. Also education is linked with the likelihood that mothers are able to use institutional facilities and professional health providers.

3.9.4 Households wealth status: It is a standardized variable providing households wealth status difference as categorical variables given as poorest, poorer, middle, rich and richest. Further, to measure in to the reason why young mothers did not deliver at health facilities this variable was collapse in 3 categories poorer and poorest, middle, and rich and richest.

3.9.5 Religion: Religion was included in this study as a community factor that could facilitate or hinder health- seeking behaviour of members of the community. In Kenya protestant are dominant, in Ethiopia it's the Orthodox Church, in Bangladesh its Islam, in Nepal its Hindu and Guyana is Christian.

3.9.6 Place of residence: it is a categorical variable with a limited number of outcomes. It is categorized as urban and rural as a reference category to see how much urban exposure is important in differentiating access and use of health facilities and professional provider among young mothers. Place of residence (urban or rural) is included to examine whether the place of residence influences young mothers of prenatal care and delivery care.

CHAPTER 4: DATA ANALYSIS AND RESULTS

This chapter will provide the analysis and results of all six countries such as Kenya and Ethiopia chosen from Sub-Saharan Africa, Nepal and Bangladesh were selected from South-Asia, and Haiti and Guyana were chosen from Latin America/Caribbean. The variables analysed were age, level of education, place of residence, wealth index, marital status, religion and planned pregnancy.

4.1 Kenya analysis

4.1.1 Differential in the use of professional health providers in Kenya

Table 1.1 shows the distribution of young mothers who received prenatal care from a professional health provider for the most recent birth in the five years preceding the survey, by young mothers selected characteristics. Overall, there is not a marked relationship between level of professional care use and young mother's age; all age groups show a slight difference. The urban-rural differential is quite slight 90.60% versus 85.60%. Young woman who attained a primary level of education and got prenatal care from professional health providers was 87.69%, while those with secondary and higher level of education was 84.3% and with no education 78.90%.

The same table 1.1 showed that respondents in the 'richest' category display the highest use of professional health providers for prenatal care 95.20% while with 'middle wealth quintile' and used professional health providers for delivery were 76.90%. Also the higher level of the use of professional health providers for PNC was found among married young women with 91.2%.

Table 1.2 provides information about timing of first prenatal care visit, planned pregnancy and personnel providers with prenatal care. The results showed young mothers who planned to get pregnant were 90.9% likely to be assisted by a professional health provider than were those who did not planned at all 83.4%. The timing of prenatal care did not affect the use of professional health provider as 96.9% of those reported that prenatal care took place in second trimester also were assisted by professional health providers compared to 84.2% who reported first trimester.

Table 1.1 Distribution of young mothers by socio-economic and demographic factors and by the use of professional health providers for prenatal care per 100 respondents KDHS 2008-9

Variables	Personnel provider with PNC				Total	Number of women
	No use of professional health providers	Use of professional health providers	No one	Missing		
Age						
15 -16	2.6	79.5	17.9	0.0	100	39
17 -18	3.37	88.3	7.53	0.8	100	120
19	4.2	86.5	9.4	0.0	100	96
Total	3.48	86.26	9.76	0.5	100	255
Place of residence						
Urban	7.5	90.6	1.9	0.0	100	53
Rural	2.0	85.6	12.4	0.0	100	202
Total	3.1	86.7	10.2	0.0	100	255
Level of education						
No education	0.0	78.9	21.1	0.0	100	19
Primary education	3.8	87.6	8.6	0.0	100	185
Second. and higher	3.9	84.3	11.8	0.0	100	51
Total	3.5	86.3	10.2	0.0	100	255
Wealth quintile						
Poorest	0.0	88.3	11.7	0.0	100	61
Poorer	1.9	90.6	7.5	0.0	100	52
Middle	2.6	76.9	20.5	0.0	100	39
Richer	11.5	80.3	8.2	0.0	100	61
Richest	0.0	95.2	4.8	0.0	100	42
Total	3.5	86.3	10.2	0.0	100	255
Marital status						
Single	3.3	80.8	15.8	0.0	100	120
Married	3.7	91.2	5.1	0.0	100	135
Total	3.5	86.3	10.2	0.0	100	255
Religion						
Roman Catholic	2.1	83.3	14.6	0.0	100	48
Protes.,Oth. Ch.	4.6	88.6	7.4	0.0	100	175
Muslim	0.0	84.0	16	0.0	100	25
Not declared	-	-	-	-	-	7
Total	3.5	86.3	10.2	0.0	100	255

Table 1.2 Distribution of young mothers by planned pregnancy and first PNC visit by the use of professional health providers for prenatal care per 100 respondents KDHS 2008-9

Variables	Personnel provider with PNC				Total	Number of women
	No use of professional health providers	Use of professional health providers	No one	Missing		
Planned pregnancy						
Then	3.0	90.9	6.1	0.0	100	99
Not at all	3.8	83.4	12.7	0.0	100	156
Total	3.5	86.3	10.2	0.0	100	255
Timing of first PNC Visit						
First trimester	15.8	84.2	0.0	0.0	100	19
Second trimester	3.1	96.9	0.0	0.0	100	160
Third trimester	2.0	46.0	0.0	0.0	100	50
No PNC visit	-	-	-	-	-	26
Total	3.5	86.3	10.2	0.0	100	255

4.1.2 Differentials in the use of professional health providers for delivery care in Kenya

Information on the use of professional health providers for delivery care is given in Table 1.3. The result reveals that 56.70% of respondents' ages nineteen were assisted by professional health providers. Likewise, 45.80% of respondents' age seventeen to eighteen were assisted by professional health providers at delivery and 1.70% of them were not assisted at delivery.

It is well documented that women in urban areas use skilled birth attendants to a much greater extent than women in rural areas. Thus 77.40% of urban respondents gave birth with the assistance of professional health providers while in rural areas only 44.60% delivered with professional health assistance.

The same table showed that Professional birth attendance among the most educated young women is high, 74.51% of women who had a secondary and higher education used a professional health provider compared with 26.30% with no educated. 80.30% of respondents in the "richer" category were likely to be assisted by professional health providers at delivery, versus 23.00% of respondents in the "poorest" category. The same table reveals a slight difference among married and single.

Table 1.3 Distribution of young mothers by socio-economic and demographic factors and by the use of professional health providers for delivery care per 100 respondents KDHS 2008-9

Variables	Personnel assisted with delivery			Missing	Total	Number of women
	No use of professional health providers	Use of professional health providers	No one			
Age						
15 -16	43.6	56.4	0.0	0.0	100	39
17 -18	52.5	45.8	1.7	0.0	100	120
19	42.3	56.7	1.0	0.0	100	96
Total	47.0	51.8	1.2	0.0	100	255
Place of residence						
Urban	22.6	77.4	0	0.0	100	53
Rural	54.0	44.6	1.5	0.0	100	202
Total	47.0	51.8	1.2	0.0	100	255
Level of education						
No education	63.2	26.3	10.5	0.0	100	19
Primary	51.9	47.6	0.5	0.0	100	185
Secondary and h.	23.5	74.5	0.0	2.0	100	51
Total	47.01	51.4	1.2	0.41	100	255
Wealth quintile						
Poorest	73.8	23.0	3.3	0.0	100	61
Poorer	65.4	34.6	0.0	0.0	100	52
Middle	43.5	56.4	0.0	0.0	100	39
Richer	19.7	80.3	0.0	0.0	100	61
Richest	28.6	71.4	0.0	0.0	100	42
Total	47.0	51.8	1.2	0.0	100	255
Marital status						
Single	50.0	50.0	0.0	0.0	100	120
Married	44.9	52.9	2.2	0.0	100	135
Total	47.0	51.8	1.2	0.0	100	255
Religion						
Roman Catho.	39.6	58.3	0.0	2.1	100	48
Prot., Oth. Ch.	47.4	52	0.6	0.0	100	175
Muslim	56.0	40.0	0.0	4.0	100	25
Not declared	-	-	-	-	-	7
Total	45.5	50.6	0.4	2.7	100	255

The result in table 1.4 reveals that 53% of young mothers who did not planned to have a child reported being assisted by a professional health provider while 46.2% of them reported being

assisted by non-professional health providers. Thus young mothers with planned and unplanned pregnancy exhibited the slight difference in their use of professional health providers at delivery. Also young mothers who started prenatal care early in the first trimester of the pregnancy (less than 3 months) were 60% likely to use professional health providers at delivery than were those who started in the second and third trimester.

Table 1.4 Distribution of young mothers' use of professional health providers for delivery care by planned pregnancy and by timing of first PNC visit per 100 respondents KDHS 2008-9

Variables	Personnel assisted with delivery			Total	Number of women
	No use of professional health providers	Use of professional health providers	No one		
Planned pregnancy					
Then	50.0	48.0	2.0	100	99
Not at all	46.2	53.8	0.0	100	156
Total	47.6	51.6	0.8	100	255
Timing of first PNC visit					
First trimester	40.0	60.0	0.0	100	20
Second trim.	42.1	57.2	0.6	100	159
Third trimester	50.0	50.0	0.0	100	50
No ANC vis.	-	-	-	-	26
Total	39.2	50.2	10.6	100	255

4.1.3 Differentials in use of health facilities for delivery care in Kenya

Information about young mother's socio-economic and demographic factors and the use of health facilities for delivery care are provided in table 1.5. Over half (56.4%) of the recorded births in rural areas occur at home, while in urban areas 77.4% were likely to use health facilities for birth delivery. The same table demonstrated that young mothers with secondary and higher level of education were likely to use health facilities for delivery than were no educated 26.3% and those from poorest wealth household 23%. The results on religious and use of health facilities demonstrated that Roman Catholic Church were 60.4 % likely to use health facilities for delivery care than were Muslim Sake 40%.

Table 1. 5 Distribution of young mother’s socio- economic and demographic characteristics and by place of delivery care per 100 respondents KDHS 2008-9

Variables	Place of delivery		Missing	Total	Number of women
	No use of health facilities	Use of health facilities			
Age					
15 -16	43.6	56.4	0.0	100	39
17 -18	55.8	44.2	0.0	100	120
19	44.2	55.8	0.0	100	96
Total	49.6	50.4	0.0	100	255
Place of residence					
Urban	22.6	77.4	0.0	100	53
Rural	56.4	43.1	0.5	100	202
Total	49.4	50.2	0.4	100	255
Level of education					
No education	73.7	26.3	0.0	100	19
Primary	54.1	45.9	0.0	100	185
Secondary and higher	23.53	74.51	1.96	100	51
Total	49.4	50.2	0.4	100	255
Wealth quintile					
Poorest	77.0	23.0	0.0	100	61
Poorer	65.42	32.66	1.92	100	52
Middle	43.6	56.4	0.0	100	39
Richer	24.6	75.4	0.0	100	61
Richest	28.6	71.4	0.0	100	42
Total	49.4	50.2	0.4	100	255
Marital status					
Single	52.1	47.9	0.0	100	120
Married	47.4	52.6	0.0	100	135
Total	49.6	50.4	0.0	100	255
Religion					
Roman Catholic	39.6	60.4	0.0	100	48
Protest., Other Ch.	49.7	49.7	0.6	100	175
Muslim	56.0	40.0	4.0	100	25
Not declared/Miss.	-	-	-	-	7
Total	49.4	50.2	0.4	100	255

Table 1.6 give information on young mothers planned pregnancy, timing of first prenatal care and the use of health facilities for delivery care. The result reveals that 52.6% of young mothers with unplanned pregnancies reported delivering in health facilities while, 47.4% were reported by those respondents who wanted pregnancy. A small difference level of

institutional birth was found among young mothers with planned pregnancy and those with unplanned pregnancy.

Additional, the results demonstrated that 60% of those who reported that prenatal care took place in the first trimester were more likely to deliver at health facilities than 40% who reported that prenatal care took place in third trimester (see table 1.6).

Table 1. 6 Distribution of young mother’s place of delivery care and by planned pregnancy and timing of first PNC visit per 100 respondents KDHS 2008-9

Variables	Place of delivery		Missing	Total	Number of women
	No use of health facilities	Use of health facilities			
Planned pregnancy					
Then	52.6	47.4	0	100	99
Not at all	47.4	52.6	0	100	156
Total	49.4	50.6	0	100	255
Timing of first PNC visit					
First trimester	40	60	0	100	20
Second trim.	43.4	56.6	0	100	159
Third trimester	54	46	0	100	50
No ANC visit	-	-	-	-	26
Total	40.8	49	10.2	100	255

4.2 Ethiopia analysis

4.2.1 Differential in the use of professional health providers in Ethiopia

Table 2.1 provide information on young mother’s socio-economic and demographic characteristics and the use of professional health providers for prenatal care. The result reveals that respondents aged nineteen were 32.21% likely to get prenatal care from professional health providers, while this figure for those aged seventeen to eighteen was 28.18% and for those aged fifteen to sixteen were 27.05%. Respondents living in urban areas were likely to get more prenatal care from professional health providers than respondents in rural areas (56.25% and 24.96% respectively). There is a huge urban-rural gap in terms of receipt of use of professional health providers during pregnancy. 84.0% of respondents with

secondary and higher levels of education received antenatal care from professional health providers during pregnancy compared with 22.17%.

Table 2.1 Distribution of young mothers by socio-economic and demographic factors and by the use of professional health providers for prenatal care per 100 respondents by EDHS 2005

Variables	Personnel provider with PNC				Total	Number of women
	No use of professional health providers	Use of Professional health providers	No one	Missing		
Age						
15 -16	0.0	27.05	70.25	2.7	100	37
17 -18	2.0	28.18	69.42	0.4	100	255
19	2.04	32.21	63.06	2.7	100	149
Total	1.77	29.49	67.37	1.37	100	441
Place of residence						
Urban	1.59	56.25	35.9	6.25	100	64
Rural	1.88	24.96	72.71	0.53	100	372
Total	1.77	29.49	67.37	1.36	100	441
Level of education						
No education	1.68	22.17	75.13	1.01	100	297
Primary	2.01	36.2	59.7	2.0	100	119
Second., & higher	4.0	84.0	12.0	0.0	100	25
Total	1.77	29.49	67.37	1.36	100	441
Wealth quintile						
Poorest	1.7	15.4	82.9	0.0	100	117
poorer	2.5	19.8	77.8	0.0	100	81
Middle	0.0	24.3	75.7	0.0	100	74
Richer	2.7	33.74	62.15	1.4	100	74
Richest	2.08	55.8	36.85	5.26	100	95
Total	1.77	29.49	67.37	1.36	100	441
Marital status						
Single	0.0	28.56	63.28	8.16	100	49
Married	2.09	29.55	67.85	0.51	100	392
Total	1.77	29.49	67.37	1.37	100	441
Religion						
Orthodox Church	3.42	34.11	60.01	2.3	100	176
Prot., Cat.,Td., Ot.	1.3	22.4	75.0	1.3	100	76
Muslim	0.49	28.05	70.92	0.59	100	188
Total	1.77	29.49	67.37	1.36	100	441

Similarly with education, the receipt of prenatal care from professional health providers increased steadily from 15.4% of young mothers from the poorest wealth quintile to 55.8% of those in the highest wealth quintile. Moreover, the proportion of those who had not seen anyone for antenatal care was higher among the poorest than among the richest with 36.85% versus 82.90% respectively.

Information about planned pregnancy, timing of first prenatal care and use of professional health providers for antenatal care is provided in table 2.2. The results indicate that young mothers who planned their pregnancy were 30.7% likely to get antenatal care from professional health providers compared with unplanned pregnancy 27.9%. The results demonstrate that mothers who started antenatal care in the first trimester were 97.1% likely to use professional health provider for prenatal care.

Table 2.2 Distribution of young mothers by planned pregnancy and first PNC visit by the use of professional health providers for prenatal care per 100 respondents EDHS 2005

Variables	Personnel provider with PNC				Total	Number of women
	No use of professional health provider	Use of Professional health provider	No one	Missing		
Planned pregnancy						
Then	1.3	30.7	68	0.0	100	129
Not at all	3.1	27.9	69	0.0	100	306
Not declared	-	-	-	-	-	6
Total	1.77	29.49	67.37	1.36	100	441
Timing of first PNC visit						
First trimester	2.9	97.1	0.0	0.0	100	34
Second trimester	7.1	92.9	0.0	0.0	100	70
Third trimester	3.2	96.8	0.0	0.0	100	31
Not declared	-	-	-	-	-	306
Total	1.77	29.49	67.37	1.36	100	441

4.2.2 Differentials in the use of professional health providers for delivery care in Ethiopia

Table 2.3 showed that 83.19% of young mothers aged nineteen reported being assisted by nonprofessional health providers such as trained birth attendant, untrained birth attendant and community health agent. This is followed by young mothers aged fifteen to sixteen with 81.05%, and finally those aged seventeen to eighteen with 80.38%. Assistance of professional health providers (defined as doctor, nurse and midwife) for delivery was 13.52% among young mothers age fifteen to sixteen, and 12.94% of the age seventeen to eighteen, with 12.05% of the last group age of nineteen.

Table 2.3 shows that Place of residence played a big role, as respondents in urban areas were more likely to use professional health than respondents from rural areas (54.66% versus 5.60%). This gap is very large due to the fact that 88.56% of respondents in rural areas were assisted by non-professional health providers while in urban areas the rate of non-professional assistance at delivery was only 36.09%.

In the same table 2.3 the study results indicate that, respondents with secondary and higher levels of education were 52.0% more likely to be assisted at birth than were uneducated at 6.05%. 88.60% of respondents without education were assisted by non-professional health providers while the level of use of non-professional health providers was 48% among secondary and higher education. The analysis shows the influence of education on use of professional health providers for delivery.

The results show that the richest respondents were 41.02% likely to get professional health assistance at delivery than were the poorest respondents 3.40%. The highest rate of unprofessional assistance was found among the middle wealth quintile with 95.9% followed by the poorest with 87.2%. With regard to marital status of respondents the results reveal that never married, single, divorced and widowed were 22.41% likely to get skilled birth assistance while 65.29% got assistance from non-professional health providers. Married young mothers were 11.47% percent likely to be assisted by professional health providers at delivery whereas 82.78% of them received assistance from non-professional health providers.

Table 2.3 Distribution of young mothers by socio-economic and demographic factors and by the use of professional health providers for delivery care per 100 respondents EDHS 2005

Variables	Personnel assisted with delivery				Total	Number of women
	No use of professional health providers	Use of professional health providers	No one	Missing		
Age						
15 -16	81.05	13.52	2.72	2.7	100	37
17 -18	80.38	12.94	6.27	0.39	100	255
19	83.19	12.05	2.65	2.01	100	146
Total	81.36	12.65	4.74	1.25	100	441
Place of residence						
Urban	39.09	54.66	0.0	6.25	100	64
Rural	88.56	5.6	5.6	0.26	100	377
Total	81.36	12.65	4.74	1.25	100	441
Level of education						
No education	88.6	6.05	4.6	0.67	100	297
Primary	70.57	21.05	5.85	2.52	100	119
Seco., & high.	48.0	52.0	0.0	0.0	100	25
Total	81.36	12.65	4.74	1.25	100	441
Wealth quintile						
Poorest	87.2	3.4	9.4	0.0	100	117
Poorer	93.8	3.7	2.5	0.0	100	81
Middle	95.9	0.0	4.1	0.0	100	74
Richer	82.4	13.5	4.1	0.0	100	74
Richest	51.54	41.02	2.08	5.26	100	95
Total	81.36	12.65	4.74	1.25	100	441
Marital status						
Single	65.29	22.41	4.04	8.16	100	49
Married	82.78	11.47	4.89	0.25	100	392
Total	81.36	12.65	4.74	1.25	100	441
Religion						
Orthodox	80.72	16.51	0.5	2.27	100	176
Prot,Cat., Trd.	77.6	89.2	11.8	1.3	100	76
Muslim	83.6	10.6	5.8	0.0	100	189
Total	81.36	12.65	4.74	1.25	100	441

Table 2.4 show that 83% of young mothers with a planned pregnancy reported assistance of non-professional health providers at delivery. On the other hand, only 11.8% of them got the assistance of professional health providers at delivery. Furthermore, while 80.6% young

mothers with unplanned pregnancy delivered their babies with assistance of non-professional providers, only 15.5% of them used professional providers.

Young mothers who started antenatal care in the second and third trimesters were likely to be assisted by non-professional health providers at 70% and 77.4% respectively while half (50%) of those who started their antenatal care in the first trimester reported being assisted by professional health providers at delivery, and the other half reported being assisted by non-professional health providers.

Table 2.4 Distribution of young mothers' use of professional health providers for delivery care by planned pregnancy and by timing of first PNC visit per 100 respondents EDHS 2005

Variables	Personnel assisted with delivery				Total	Number of women
	No use of professional health providers	Use of professional health providers	No one	Missing		
Planned pregnancy						
Then	83.0	11.8	3.9	0.0	100	129
Not at all	80.6	15.5	5.2	0.0	100	306
Not declared	-	-	-	-	100	6
Total	81.36	12.65	4.74	1.25	100	441
Timing of first PNC						
First trimester	50.0	50.0	0.0	0.0	100	34
Second trimester	70.0	30.0	0.0	0.0	100	70
Third trimester	77.4	16.1	6.5	0.0	100	31
No PNC visit	-	-	-	-	-	306
Total	20.4	9.6	0.5	69.4	100	441

4.2.3 Differentials in use of health facilities for delivery care in Ethiopia

Table 2.5 provide information on young mothers' socio-economic and demographic characteristics and the use health facilities for delivery care. The results show a slight difference in use of place of delivery according to respondents' age. All age groups exhibit a similar rate of delivery in health facilities ranging between 11.36% and 13.52% respectively. The level of home delivery was quite high among all age groups. For instance 83.77% of respondents aged fifteen to sixteen, 86.42% of respondents aged nineteen and 86.66% respondents aged seventeen to eighteen reported having delivered their babies at home.

The information in this table suggests that 54.65% of urban respondents were likely to deliver their babies in health facilities compared to 5.28% of respondents from rural areas. Furthermore, the majority of respondents (94.44%) in rural areas delivered their babies at home compared to only 39.09% in rural areas. The urban-rural gap in use of health facilities for delivery is huge.

Well educated women are more likely to use modern health than uneducated women. The results confirm that education is positively associated with place of delivery. The gap is remarkable between young mothers with no formal education and secondary and higher education (5.80 % versus 48%), in addition primary and secondary education show a gap in term of use of health facilities for delivery care at 5.16% and 21.83% respectively (see table 2.5).

Regarding socio-economic status of young mothers, the greatest inequality in the use of health facilities for delivery care is observed among poorest wealth quintile at 3.4 %. Among richest wealth quintile it was 39.97%. However 100 percent of young mothers in the middle wealth quintile reported delivery of their babies in no medical setting. A huge gap is observed between those on the upper index of the wealth status variable versus the lower index in terms of use of health facilities for delivery.(see table 2.5)

Concerning marital status of young mothers, the same table indicates that, 88.47% of married young mothers delivered their babies at home. On the contrary, only 11.27% of them were likely to use health facilities for delivery. On the other hand 69.43% of single young mothers reported delivery of their babies in a no medical setting while 22.41% of them reported delivery of their babies in a medical setting. These findings suggest that there is a slight difference between married young mothers and single young mothers' use and no use of medical setting for delivery.

The results demonstrate that Muslims Sake reported 89.4% for delivery at home, Protestant, Roman Catholic Church and Traditional exhibit 90.0% while Orthodox Church reported 81.21%. Furthermore, the use of an institution setting for delivery was 16.51% among Orthodox religious and lowest among (Protestant, Roman Catholics, Tradition) at 8.96% (see table 2.5).

Table 2. 5 Distribution of young mother’s socio- economic and demographic characteristics and by place of delivery care per 100 respondents KDHS 2008-9

Variables	Place of delivery			Total	Number of women
	No use of health facilities	Use of health facilities	Not declared		
Age					
15 -16	83.8	13.52	2.7	100	37
17 -18	86.7	12.95	0.39	100	255
19	86.6	11.36	2.01	100	149
Total	86.4	12.45	1.15	100	441
Place of residence					
Urban	39.1	54.65	6.25	100	64
Rural	94.4	5.28	0.26	100	377
Total	86.4	12.45	1.15	100	441
Level of education					
No education	93.6	5.76	0.67	100	297
Primary	75.6	21.83	2.52	100	119
Secun., and higher	52.0	48.00	0.00	100	25
Total	86.4	12.45	1.15	100	441
Wealth Quintile					
Poorest	96.6	3.4	0.00	100	117
Poorer	96.3	3.7	0.00	100	81
Middle	100.0	0.0	0.00	100	74
Richer	86.5	13.5	0.00	100	74
Richest	54.8	39.97	5.26	100	90
Total	86.4	12.45	1.15	100	441
Marital status					
Single	69.4	22.41	8.16	100	49
Married	88.5	11.27	0.25	100	391
Total	86.4	12.45	1.15	100	441
Religion					
Orthodox	81.2	16.51	2.27	100	176
Prot., Cath., Td., & Ot.	90.8	8.96	1.49	100	76
Muslim	89.4	10.9	0.0	100	189
Total	86.4	12.45	1.15	100	441

Information on planned pregnancy and timing of PNC visit by place of delivery is provided in table 2.6. The results demonstrate that both young mothers with planned and unplanned pregnancy exhibit the same level of delivery in an institutional setting (such as government

hospital, government health centre, private hospital, clinic and no government facilities), ranging between 11.1 % for young mothers with planned pregnancy to 16.3% for those with unplanned pregnancy.

The results reveal that 87.% of young mothers who reported starting antenatal care in the third trimester were likely to deliver their babies at home while only 12.9% of them managed to deliver in health facilities

Table 2. 6 Distribution of young mother’s place of delivery care and by planned pregnancy and timing of first PNC visit per 100 respondents EDHS 2005

Variables	Place of delivery			Total	Number of women
	No use of health facilities	Use of health facilities	Missing		
Planned pregnancy					
Then	88.9	11.1	0.0	100	129
Not at all	83.7	16.3	0.0	100	306
Not declared	-	-	-	-	6
Total	86.4	12.45	1.15	100	441
Timing of first PNC visit					
First trimester	50.0	50.0	0.0	100	34
Second trimester	70.0	30.0	0.0	100	70
Third trimester	87.1	12.9	0.0	100	31
Not decl./ no ANC	-	-	-	-	306
Total	21.1	9.5	69.4	100	441

4.3 Nepal analysis

4.3.1 Differentials in use of professional health providers for prenatal care in Nepal

Table 3.1 reveals that 47.10% of young mothers aged fifteen to nineteen were likely to get prenatal care from professional health providers while 41.10% of them got antenatal care from non-professional health providers. Furthermore, 43.5% of young women aged nineteen got prenatal care from a professional provider whereas 38.30% of them received antenatal care from non-professional health providers. All age groups exhibit slight differences in their use of professional and non-professional health providers during pregnancy.

Table 3.1 Distribution of young mothers by socio-economic and demographic factors and by the use of professional health providers for prenatal care per 100 respondents NDHS 2006

Variables	Personnel providers with ANC			Missing	Total	Number of women
	No use of professional health providers	Use of professional health providers	No one			
Age						
15 -16	41.2	47.1	11.8	0.0	100	17
17 - 18	39.4	44.0	16.7	0.0	100	150
19	38.3	43.5	18.3	0.0	100	154
Total	38.9	43.9	17.1	0.1	100	321
Place of residence						
Urban	13.4	79.1	7.5	0.0	100	67
Rural	45.7	34.6	19.7	0.0	100	254
Total	38.9	43.9	17.1	0.1	100	321
Level of education						
No education	42.7	30.6	26.6	0.0	100	124
Primary	42.0	44.0	14.0	0.0	100	100
Secondary	30.9	60.8	8.2	0.0	100	97
Total	38.9	43.9	17.1	0.1	100	321
Wealth Quintile						
Poorest	39.7	25.0	35.3	0.0	100	68
Poorer	45.3	28.1	26.6	0.0	100	64
Middle	45.5	42.9	11.7	0.0	100	77
Richer	35.8	58.6	5.7	0.0	100	70
Richest	21.4	76.2	2.4	0.0	100	42
Total	38.9	43.9	17.1	0.1	100	321
Marital status						
Married	39.1	44.2	16.7	0.0	100	317
Single	25.0	24.75	50.25	0.0	100	4
Total	38.9	43.9	17.1	0.1	100	321
Religion						
Hindu	40.0	42.1	17.9	0.0	100	285
B.,M., Karate, Chr.	30.6	58.3	11.1	0.0	100	36
Total	43.9	38.9	17.1	0.1	100	321

Regarding place of residence, urban respondents were 79.10% likely to get prenatal care from a professional health worker than were rural respondents at 34.60%. In rural areas, 45.7% of respondents received antenatal care from non-professional health providers while in urban

areas this figure was only 13.4%, a finding that suggests a noticeable gap as the level of use of professional health providers for prenatal care was twice higher in urban areas than in rural.

Young mothers with secondary levels of education showed a higher rate of use of professional health providers than young mothers with no education (60.80% and 30.60 % respectively). Besides, the rate of no use of any care during pregnancy decreased as the level of education increased. This finding suggests that education influences the receipt of antenatal care from professional health providers.

The same table demonstrate that respondents from the richest households were more likely than those from the poorest households to get prenatal care from professional health providers (76.20% versus 25%). Furthermore, 35.3% of the poorest and 26.6% of the poorer women did not see anyone for antenatal care during pregnancy. The rate of no use of prenatal care decreased as the wealth index increased.

The results that have emerged from the analysis of marital status and personnel providers for delivery care are providing in the same table. The evidence that show that 44.2% of young married mothers were likely to get prenatal care from professional health providers during pregnancy while 39.1% of them received prenatal care from non-professional health providers (see table 3.1)

Table 3.2 showed that young mothers with unplanned pregnancies were 64.5% likely to get prenatal care from non-professional health providers while 23.7% of them used professional health providers for antenatal care. Furthermore, 36% with planned pregnancies were likely to get prenatal care from professional health providers, while 44.75 % of them reported receiving prenatal care from non-professional health providers. 69.1% of young mothers who started prenatal care during the first trimester were likely to be assisted by professional health providers with only 38.5% of those who started in the third semester.

Table 3.2 Distribution of young mothers by planned pregnancy and first PNC visit by the use of professional health providers for prenatal care per 100 respondents NDHS 2006

Variables	Personnel providers with ANC			Total	Total	Number Of women
	No use professional health Providers	Use of Professional health providers	No one			
Planned pregnancy						
Then	44.7	36.0	19.3	100	100	228
Not at all	64.5	23.7	11.8	100	100	93
Total	43.9	38.9	17.1	100	100	321
Timing of first PNC visit						
First trimester	30.9	69.1	0.0	0.0	100	110
Second trimester	41.1	58.9	0.0	0.0	100	129
Third trimester	61.5	38.5	0.0	0.0	100	26
Not PNC	-	-	-	-	-	56
Total	43.9	38.9	17.1	0.1	100	321

4.3.2 Differentials in the use of professional health providers for delivery care in Nepal

Information on young mothers socio-economic and personnel assisted with delivery is given in table 3.3. The results show that young mothers aged fifteen to sixteen were 29.40% likely to be assisted by professional health providers while 70.6% of them got assistance from non-professional health providers at delivery. 28.7% of young mothers aged seventeen to eighteen reported they were assisted by professional health providers at delivery, with 68% of them were assisted by non-professional health providers. All age groups show a slight difference in their use of professional health providers for delivery with majority still using non-professional health providers.

The results show that 52.2% of urban young mothers were assisted by professional health providers while 44.8% of them were not assisted by a professional health provider. In rural areas, 16.9% of births were assisted by professional health providers whereas 80.30% were

Table 3.3 Distribution of young mothers by socio-economic and demographic factors and by the use of professional health providers for delivery care per 100 respondents NDHS 2006

Variables	Personnel assisted with delivery			Total	Number of women
	No use of professional health providers	Use of professional health providers	No one		
Age					
15 -16	70.6	29.4	0	100	17
17 - 18	68.0	28.7	3.3	100	150
19	77.9	19.5	2.6	100	154
Total	72.9	24.3	2.8	100	321
Place of residence					
Urban	44.8	52.2	3	100	67
Rural	80.3	16.9	2.8	100	254
Total	72.9	24.3	2.8	100	321
Level of education					
No education	83.9	13.7	2.4	100	124
Primary	73.0	21.0	6.0	100	100
Secondary	58.8	41.2	0.0	100	97
Total	72.9	24.3	2.8	100	321
Wealth quintile					
Poorest	91.2	7.4	1.5	100	68
Poorer	81.2	15.6	3.1	100	64
Middle	74.0	20.8	5.2	100	77
Richer	68.6	28.6	2.9	100	70
Richest	35.7	64.3	0	100	42
Total	72.9	24.3	2.8	100	321
Religion					
Hindu	73.0	24.2	2.8	100	285
B,M,Kirate,Chr	72.2	25.0	2.8	100	36
Total	72.9	24.3	2.8	100	321

assisted by non-professional health providers. There is a huge urban-rural gap in use of professional health providers at delivery.

The results on young mothers' level of education and personnel assisted with delivery show that the proportion of births delivered by non-professional providers decreases as education increases (13.7% and 41.2% respectively). On the other hand 83.9% of births to mothers who had no education were assisted by non-professional health providers compared with 58.8% of births to mothers who have a secondary level education.

The rate of professional health assistance at delivery increases steadily as young mothers wealth quintile increases (7.3% and 64.3% respectively). 91.2% of the poorest young mothers reported being assisted by non-professional health providers. The richest young mothers were 64.30 percent more likely to be assisted by a professional health worker than poorest young mothers (7.40%). The relationship between household wealth and use of professional health providers for delivery is positive, as with the mother's education.

Regarding marital status of young mothers, the results shows that young mothers living alone are more likely to be assisted by professional health providers at delivery than married women. The data indicated that 73.2% of births to married young mothers were assisted by unskilled health providers compared with only 24% assisted by professional health providers. All religious categories exhibit a similar level of unskilled health provider use with Hindus (73%) and Buddhists, Kirats, Muslims and Christians (72.2 %). (See table 3.3).

Table 3.4 Distribution of young mothers' use of professional health providers for delivery care by planned pregnancy and by timing of first PNC visit per 100 respondents by countries NDHS 2006

Variables	Personnel assisted with delivery			Total	Number of women
	No use of professional health providers	Use of professional health providers	No one		
Planned pregnancy					
Then	22.8	74.6	2.6	100	228
Not at all	28	68.8	3.2	100	93
Total	72.9	24.3	2.8	100	321
Timing of first PNC visit					
First trimester	64.5	35.5	0	100	110
Second trimester	72.9	27.1	0	100	129
Third trimester	92.3	7.7	0	100	26
Not declare/ no v.	-	-	-	-	56
Total	55.3	24.3	17.4	100	321

Information on planned pregnancies, timing of first prenatal care visit and assistance at delivery is given in table 3.4. The results show that young mothers who planned their pregnancies were 74.6% more likely to be assisted by skilled health providers at delivery. The level professional health assistance at delivery is the same among young mothers with unplanned pregnancies and those with planned pregnancy (68.8% and 74.6%).

Young mothers who started prenatal care early in the first trimester of pregnancy were 35.5% likely to be assisted by professional health providers compared with 7.7% of those who started in the third trimester delivered with no professional assistance and among those who started in the third trimester were 7.7% who delivered with professional health professionals

4.3.3 Differentials in use of health facilities for delivery care in Nepal

The table 3.5 provide information on distribution of young mother's socio- economic and demographic characteristics and by place of delivery. The results reveal that 76.6% of young mothers aged nineteen reported delivering their babies at home, and 31.30% of young mothers aged seventeen to eighteen reported delivering in a medical setting. On the other hand, 70.6% of young mothers aged fifteen to sixteen reported delivering their babies at home and 29.4% of them reported delivering in a medical setting. All ages show a slight difference in their use of health facilities.

The results reveals that 80% of young mothers residing in rural areas were likely to deliver their babies at home, and only 20% of them reported delivering in health facilities. On the other hand, in urban areas 55.20% of young mothers reported delivering their babies in health facilities whereas 44.8% of them delivered at home.

Concerning the socio-economic status of young mothers and place of delivery, the results demonstrate that 91.2% of young mothers from the poorest were likely to deliver their babies at home. The gap was huge between poorest and richest in their use of health facilities for delivery. Also, 64.3% of young mothers from the richest are reported to deliver their babies in health facilities compared to only 8.8% of young mothers from the poorest.

The results of young mothers' marital status and place of delivery for showed that 98.8% of respondents are married and only 1.2% is single women. 72.2% of married women reported delivering at home, while 27.1% of them reported delivering at health facilities.

Table 3.5 Distribution of young mother's socio- economic and demographic characteristics and by place of delivery care per 100 respondents NDHS 2006

Variables	Place of delivery		Total	Number of women
	No use of health facilities	Use of health facilities		
Age				
15 -16	70.6	29.4	100	17
17 - 18	68.6	31.3	100	150
19	76.6	23.4	100	154
Total	72.6	27.4	100	321
Place of residence				
Urban	44.8	55.2	100	67
Rural	80.0	20.0	100	254
Total	72.6	27.4	100	321
Level of education				
No education	84.7	15.3	100	124
Primary	75	25	100	100
Secondary	54.6	45.4	100	97
Total	72.6	27.4	100	321
Wealth quintile				
Poorest	91.2	8.8	100	68
Poorer	84.4	15.6	100	64
Middle	75.3	24.7	100	77
Richer	62.9	37.1	100	70
Richest	35.7	64.3	100	42
Total	72.6	27.4	100	321
Marital status				
Married	72.9	27.1	100	317
Single	66.7	33.3	100	4
Total	72.6	27.4	100	321
Religion				
Hindu	27.7	72.3	100	285
B.,M.,Kir.,Chris.	25.0	75.0	100	36
Total	72.6	27.4	100	321

Regarding religion affiliation, 72.3% of the Hindus religion reported delivering at health facilities and 27.7% of them delivered their babies at home. Whereas 75% of Buddhists, Muslims, Kirats and Christians deliver at health facilities while 25% of them delivered at

home. Both religions exhibit similar rate of use of health facilities for delivery, and similar rate of home delivery (see table 3.5)

Table 3.6 give information on planned , timing of first prenatal care and place of delivery.74.1% of young mothers with planned pregnancies used no medical setting for delivery (such as home) while only 25.9% of young mothers with planned pregnancies used medical facilities. 68.8% of young mothers with unplanned pregnancies delivered in no medical facilities compared to 31.2% of young mothers with unplanned pregnancies who delivered their babies at health facilities medical

Table 3. 6 Distribution of young mother’s place of delivery care and by planned pregnancy and timing of first PNC visit per 100 respondents NDHS 2005

Variables	Place of delivery		Missing	Total	Number of women
	No use of health facilities	Use of health facilities			
Planned pregnancy					
Then	74.1	25.9	0.0	100	228
Not at all	68.8	31.2	0.0	100	93
Total	72.6	27.4	0.0	100	321
Timing of first PNC visit					
1 trimester	60.0	40.0	0.0	100	110
2 trimester	71.3	28.7	0.0	100	129
3 trimester	88.5	11.5	0.0	100	26
Not dec./no PNC	-	-	-	-	56
Total	56.5	26.2	17.4	100	321

4.4 Bangladesh analysis

4.4.1 Differential in the use of professional health providers in Bangladesh

Table 4.1 gave information on young mothers’ socio-economic and demographic characteristic and use of professional health providers. The findings show that all respondents’ age groups exhibit small difference in the use of professional health providers for prenatal care ranging between 38.2% and 47.36% respectively.

From the same table it is revealed that urban young mothers were 65.6% likely to get prenatal care from a professional health provider compared with 34.57% of young mothers in rural areas. Furthermore, the majority of respondents in rural areas 41.12% did not receive any care during pregnancy compared with 21.1% in urban areas. The urban-rural gap in professional health providers' use during pregnancy is evident in Bangladesh.

The same table shows that young mothers' level of education and use of professional health providers for prenatal care. The findings reveal that 63.63% of respondents without education did not receive any care from anyone during pregnancy. However, 51.65% of respondents with secondary and higher level of education were likely to receive prenatal care from professional health providers compared with young mothers with no education at 22.22%.

Young mothers from the richest wealth quintile household were 75.78 % likely to get prenatal care from professional health providers compared with the poorest at 26.47%. The level of non-professional health providers use was at 24% among the poorest, while among richest only 11.31%. The use professional health provider is positively associated with economic status of young mothers.

Married were 43.65% likely to use professional health for prenatal care compared to single 40%.

The findings reveal slight difference between the Islam religion, Hindu, and Buddhists. These categories exhibit a same level of use of professional health providers with 43.03% for Islam and 51.02% for Hindu and Buddhist (see table 4.1).

Table 4.2 the findings demonstrate that 74.4% of young mothers who started their prenatal care in the first trimester were likely to get prenatal care from skilled health providers. The results show a small difference among those young mothers who started their prenatal care in the second and third trimesters ranging between 64.2 % and 67% respectively.

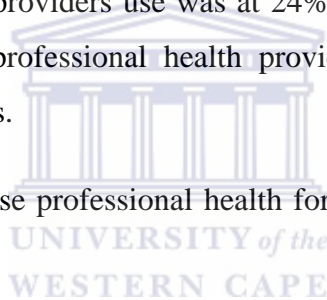


Table 4.1 Distribution of young women who had a live birth in the five years preceding the survey by personnel provider of prenatal care (PNC) and by young mothers' characteristics, BDHS 2007

Variables	Personnel provider with PNC				Total	Number of women
	No use of professional health providers	Use of professional health providers	No one	Missing		
Age						
15- 16	20.90	38.20	40.90	0.0	100	110
17 -18	2.30	42.44	35.40	19.9	100	377
19	18.05	47.36	33.08	1.51	100	266
Total	20.58	43.55	35.32	0.55	100	753
Place of residence						
Urban	13.30	65.60	21.10	0.00	100	218
Rural	23.55	34.57	41.12	0.76	100	535
Total	20.58	43.55	35.32	0.55	100	753
Level of education						
No education	13.13	22.22	63.63	1.01	100	99
Primary	21.55	37.93	40.08	0.44	100	232
Second. & high	21.8	51.65	26.06	0.49	100	422
Total	20.58	43.55	35.32	0.55	100	753
Wealth quintile						
Poorest	24	26.47	48.79	0.74	100	121
Poorer	22.8	29.3	47.8	0.1	100	184
Middle	22.53	38.44	37.85	1.18	100	169
Richer	20.6	53.5	25.8	0.1	100	155
Richest	11.31	75.78	12.1	0.81	100	124
Total	20.58	43.55	35.32	0.55	100	753
Marital status						
Married	20.73	43.65	34.51	1.54	100	733
Single	15	40	40	5	100	20
Total	20.58	43.55	35.32	0.55	100	753
Religion						
Islam	20.45	43.03	35.93	0.59	100	704
Hindu. and bud.	22.44	51.02	26.53	0.01	100	49
Total	20.58	43.55	35.32	0.55	100	753

Table 4.2 Distribution of young mothers by planned pregnancy and first PNC visit by the use of professional health providers for prenatal care per 100 respondents BDHS 2007

Variables	Personnel provider with PNC				Total	Number of women
	No use of professional health providers	Use of professional health providers	No one	Missing		
Planned pregnancy						
Then	20.28	42.52	36.83	0.37	100	562
Not at all	20.32	47.59	31.55	0.54	100	187
Not declared	-	-	-	-	-	4
Total	20.58	43.55	35.32	0.55	100	753
Timing of first PNC visit						
First trimester	25.6	74.4	0.0	0.0	100	165
Sec. trimester	35.8	64.2	0.0	0.0	100	202
Third trimester	33.0	67.0	0.0	0.0	100	116
No PNC visit	-	-	-	-	-	270
Total	20.2	43.6	35.8	0.0	100	753

4.4.2 Differentials in the use of professional health providers for delivery care in Bangladesh

Table 4.3 provides information on distribution of young mothers by socio-economic and demographic factors and by the use of professional health providers for delivery care. The results showed that all age group demonstrated a slight difference in the use of professional health providers for delivery, thus age does not impact assistance of professional health providers at delivery.

Furthermore, 87.1% of young mothers from rural areas reported being assisted by non-professional health providers, while only 10.28% of them reported being assisted by professional health providers. Furthermore, 30.73% of young mothers from urban areas were likely to be assisted by professional health providers while 68.8% of them used non-professional health providers for delivery care. The urban - rural gap in skilled providers use is evident (30.70% versus 10.40%).

93.93 % of respondents with no formal education were likely to be assisted by non-professional health providers at delivery. On the other hand, 23.69% of respondents with-

Table 4.3 Distribution of young mothers by socio-economic and demographic factors and by the use of professional health providers for delivery care per 100 respondents BDHS 2007

Variables	Personnel assisted with delivery				Total	Number of women
	No use of profession health providers	Use of Professional health providers	No one	Missing		
Age						
15- 16	82.7	14.5	2.7	0.0	100	110
17 -18	84.1	14.6	1.3	0.0	100	377
19	78.22	19.21	1.08	1.49	100	266
Total	81.08	16.2	1.46	1.26	100	753
Place of residence						
Urban	68.8	30.73	0.45	0.0	100	218
Rural	87.1	10.28	1.86	0.76	100	535
Total	81.08	16.2	1.46	1.26	100	753
Level of education						
No education	93.93	2.02	3.03	1.02	100	99
Primary	88.79	8.62	2.15	0.44	100	232
Seco., & higher	75.11	23.69	0.71	0.49	100	422
Total	81.08	16.2	1.46	1.26	100	753
Wealth quintile						
Poorest	89.25	6.64	3.27	0.82	100	121
Poorer	92.9	5.4	1.6	0.0	100	184
Middle	85.2	11.9	1.8	1.1	100	169
Richer	74.8	23.9	1.3	0.0	100	155
Richest	59.8	37.8	1.6	0.81	100	124
Total	81.08	16.2	1.46	1.26	100	753
Marital status						
Married	82.4	15.96	1.22	0.42	100	733
Single	60.0	25.0	10.0	5.0	100	20
Total	81.08	16.2	1.46	1.26	100	753
Religion						
Islam	82.1	15.9	1.42	0.58	100	704
Hindu, and Budh.	77.55	20.4	2.04	0.0	100	49
Total	81.08	16.2	1.46	1.26	100	753

secondary education were likely to be assisted by professional health providers compared to 2.02% of respondents with no education. About 10 percent difference was found among young mothers with no formal education and primary levels of education 93.93% and 83.79% respectively (see table 4.3).

The findings demonstrated that young mothers from the poorest households were 89.25% likely to be assisted by non-professional health providers at delivery compared to 59.8% of the richest. Assistance of professional health providers was 37.8% of young mothers from richest households compared with 6.64% of poorest households. There is a huge gap between the poorest and the richest in their use of professional health providers for delivery.

Regarding marital status and assistance at delivery table 4.3 demonstrates that 82.40% of married young mothers reported being assisted by non-professional health providers while only 15.96% of them received assistance of professional health providers at delivery. Moreover, 60% of single young mothers reported being assisted by non-professional health providers, while 25 % of them were assisted by professional health providers. Even though married and single show a slight difference in use of non-professional health providers for delivery care, they still show a similar rate of professional involvement.

Table 4.4 gave information on distribution of young mothers by planned pregnancy and timing of first prenatal care by professional health providers at delivery. The results show that 82.38% of respondents with planned pregnancies used non-professional health providers at delivery while only 16.19% of them used professional health providers. On the other hand, 80.21% of respondents with unplanned pregnancies were assisted by non-professional health providers whereas only 17.64% were assisted by professional health providers. This finding suggests that planning of pregnancy does not influence the use of professional health providers.

The results show that 86.2 % of young mothers who started prenatal care in the third trimester reported to be assisted by non-professional health providers. On the other hand, 31.5% of respondents who started prenatal care in the first trimester of pregnancy were likely to be assisted by professional health providers at delivery compared with 12.1% of those who started their antenatal care in third trimester.

Table 4.4 Distribution of young mothers' use of professional health providers for delivery care by planned pregnancy and by timing of first PNC visit per 100 respondents BDHS 2007

Variables	Personnel assisted with delivery				Total	Number of women
	No use of professional health providers	Use of Professional health providers	No one	Missing		
Planned pregnancy						
Then	82.38	16.19	1.24	0.19	100.00	562
Not at all	80.21	17.64	2.13	0.02	100	187
Not declare	-	-		-	-	4
Total	81.08	16.2	1.46	1.26	100	753
Timing of first PNC visit						
First trimester	66.7	31.5	1.8	0.0	100	165
Second trimester	81.2	18.8	0.0	0.0	100	202
Third trimester	86.2	12.1	1.7	0.0	100	116
No decl./No visit	-	-	-	-	-	270
Total	49.7	14	0.5	35.8	100	753

4.4.3 Differentials in use of health facilities for delivery care in Bangladesh

The results distribution of young mothers by socio-economic and demographic characteristics and the use of health facilities for delivery are given in table 4.5. The results suggest that all age groups have the difference level of home delivery ranging between 76.7% and 86.2% respectively.

Regarding place of residence, the same table showed that 88.93% of births in rural areas occurred at home, with only 10.32% of births delivered in an institutional setting. On the other hand, 32.6% of young mothers from urban areas delivered their babies in health facilities compared with only 10.32% who delivered in rural areas. The urban-rural gap is evident suggesting promotion of health facilities use in rural areas to improve maternal and child health.

It is well documented that educated women are more likely to use health facilities. Respondents with secondary and higher level of education were likely to use health facilities than were uneducated respondents (24.40% versus 2.02%). Furthermore, respondents without

Table 4.5 Distribution of young mother's socio- economic and demographic characteristics and by place of delivery care per 100 respondents BDHS 2007

Variables	Place of delivery			Total	Number of women
	No use of health facilities	Use of medical health facilities	Missing		
Age					
15- 16	85.5	14.5	0.0	100	110
17 -18	86.2	13.8	0.0	100	377
19	76.7	21.8	1.5	100	266
Total	82.75	16.71	0.53	100	753
Place of residence					
Urban	67.4	32.6	0.0	100	218
Rural	88.93	10.32	0.75	100	535
Total	82.76	16.71	0.53	100	753
Level of education					
No education	96.9	2.02	1.08	100	99
Primary	90.51	9.05	0.44	100	232
Secun. & higher	75.11	24.4	0.49	100	422
Total	82.75	16.71	0.53	100	753
Wealth quintile					
Poorest	91.73	7.44	0.83	100	121
Poorer	94	6	0.0	100	184
Middle	86.4	12.5	1.1	100	169
Richer	76.1	23.9	0.0	100	155
Richest	60.51	38.68	0.81	100	124
Total	82.75	16.71	0.53	100	753
Marital status					
Married	83.08	16.5	0.42	100	733
Single	70.0	25.0	5.0	100	20
Total	82.75	16.71	0.53	100	753
Religion					
Islam	82.95	16.47	0.58	100	704
Hindu, and Budd.	79.6	20.4	0.0	100	49
Total	82.75	16.71	0.53	100	753

education exhibit a higher rate of no use of health facilities 96.90% followed by those with primary level of education at 90.51 % (see table 4.5).

With regard to young mothers' wealth quintile and place of delivery table 4.16 shows that 91.73% of the poorest reported delivering their babies at home, while only 7.44% of them

delivered in medical settings. The richest were 38.68% likely to use health facility delivery compared to the poorer category at 6%. A huge gap was found among the poorest and the richest use of institutional settings for delivery (7.44% versus 38.68%).

Information on young mothers' marital status and use of health facilities is given in table 4.17. The results demonstrate that 83.08% of married young mothers reported delivering their babies in no medical settings while only 16.5% used health facilities for delivery. Moreover, 70% of single young mothers reported delivering at home while 25% of them used health facilities.

Table 4.6 provide information distribution of young mothers by planned pregnancy, timing of first prenatal care visit and use health facilities for delivery. The results showed that 83.6% of respondents with planned pregnancies used no medical settings for delivery while only 16.4% of them used health facilities for delivery. Furthermore, 81.1% of respondents with unplanned pregnancies reported delivering their babies at home while only 18.2% of them reported delivering in health facilities.

Table 4.6 Distribution of young mother's place of delivery care and by planned pregnancy and timing of first PNC visit per 100 respondents BDHS 2007

Variables	Place of delivery			Total	Number of women
	No use of health facilities	Use of health facilities	Missing		
Planned pregnancy					
Then	83.6	16.4	0	100	562
Not at all	81.8	18.2	0	100	187
Not declare	0	0	0.53	100	4
Total	82.76	16.71	0.53	100	753
Timing of first PNC visit					
First trimester	66.1	33.9	0	100	165
Second trim.	80.7	19.3	0	100	202
Third trimester	87.9	12.1	0	100	116
No ANC visit	-	-	-	-	270
Total	49.7	14.5	35.8	100	753

Concerning timing of first antenatal care and place of delivery, the result indicates that 87.9% of young mothers who started prenatal care in their third trimester were likely to deliver in no medical setting such as homes while only 12.1% of them used medical settings. Those

respondents who started prenatal care in their first trimester were 33.9% likely to deliver in medical settings while 66.1% of delivered their babies at home. It is evident that young mothers who started antenatal care in the first trimester are more likely to use health facilities for delivery than those who started in the third trimester (33.9% versus 12.1%).(see table 4.6)

4.5 Haiti analysis

4.5.1 Differential in the use of professional health providers in Haiti

Information on young mothers socio-economic and use of professional health providers during pregnancy is given in table 5.1. The results show that 93.5% of respondents aged fifteen to sixteen, 83.10% of those aged seventeen to eighteen and 86.71% aged nineteen were likely to get prenatal care from professional health providers.

The urban-rural and age group differential in use of professional health providers for prenatal care is quite slight. Table 5.1 shows that 87.57% of respondents from urban areas were likely to be seen by skilled health providers during pregnancy while 84.4% of respondents from rural areas were likely to get antenatal care from professional health providers. This finding suggests a slight difference between respondents from urban and rural areas on the use of professional health providers for prenatal care.

Regarding young mothers' level of education and receipt of prenatal care from a professional health provider assistance table 5.1, showing that 92.97% of young mothers with secondary and higher levels of education were likely to seek antenatal care from professional health providers compared with 66.7% of young mothers with no education. The rate of no use of antenatal care was higher among young mothers without education 23.3% compared to those with secondary and higher education 4.23%.

The same table give information on socio-economic and antenatal care assistance. The results demonstrate that the poorest and the richest have a same level of use of professional health providers for antenatal care ranging between 81% and 94.3% respectively. Moreover, a similarity was found among the poorer and the poorest use of professional health providers for antenatal care. The rate of no use of antenatal care was highest among the poorest with 17.7% while the richest exhibit 5.7% of no use.

Table 5.1 Distribution of young mothers by socio-economic and demographic factors and by the use of professional health providers for prenatal care per 100 respondents by countries HDHS 2005-6

Variables	Personnel assisted with PNC				Total	Number of women
	No use of professional health providers	Use of professional health providers	No one	Missing		
Age						
15-16	3.2	93.5	3.2	0	100	31
17-18	2.1	83.1	14.8	0	100	142
19	3.07	86.71	9.32	0.9	100	128
Total	2.65	85.71	11.29	0.35	100	301
Place of residence						
Urban	1.68	87.57	9.91	0.84	100	121
Rural	3.3	84.4	12.2	0	100	180
Total	2.65	85.71	11.29	0.35	100	301
Level of education						
No education	10	66.7	23.3	0	100	30
Primary	2	86	12	0	100	200
Secondary	1.38	92.97	4.23	1.42	100	71
Total	2.65	85.71	11.29	0.35	100	301
Wealth quintile						
Poorest	1.3	81	17.7	0	100	79
Poorer	7.6	86.4	6.1	0	100	66
Middle	1.7	88.1	10	0	100	59
Richer	1.57	83.82	12.88	1.73	100	62
Richest	0	94.3	5.7	0	100	35
Total	2.65	85.71	11.29	0.35	100	301
Marital status						
Single	2	85.2	13.6	0	100	81
Married	3.18	85.9	10.45	0.46	100	220
Total	2.65	85.71	11.29	0.35	100	301
Religion						
Catholic	1.9	84.9	13.2	0	100	159
Prot., Meth., J.W., B.	3.4	87.1	8.6	0.9	100	116
Not religion	3.8	84.6	11.5	0	100	26
Total	2.65	85.71	11.29	0.35	100	301

The same table presents the results on personnel seen for prenatal care, and young mothers' marital status. The result shows that both married and single women exhibit same levels of

professional health providers' use 85.90% and 85.2% respectively. Thus marital status does not influence the use of skilled health providers for prenatal care.

Table 5.2 provide information young mothers planned, timing of first prenatal care and use of professional health providers for prenatal care the results show no difference between young mothers with planned and unplanned pregnancies in the utilization of antenatal care services from professional health providers. The data indicates that 85.3% of young mothers with planned pregnancies and 86.4% of young mothers with unplanned pregnancies reported receiving antenatal care from professional health providers. Moreover, the same rate of no use of any care during pregnancy was found with 12.9% for respondents with planned pregnancies and 10.3% for respondents with unplanned pregnancies.

The same table reveals that 95.2% of respondents who started prenatal care in the third trimester reported being assisted by professional health providers for prenatal care. On the other hand, 75.3% of those who started early in the first trimester of pregnancy received antenatal care from professional health providers while 21.5% of them did not receive any care.

Table 5.2 Distribution of young mothers by planned pregnancy and first PNC visit by the use of professional health providers for prenatal care per 100 respondents by countries HDHS 2005-6

Variables	Personnel assisted with PNC				Total	Number of women
	No use of professional health providers	Use of professional health provider	No one	Missing		
Planned pregnancy						
Then	1.7	85.3	12.9	0.0	100	116
Not at al	3.3	86.4	10.3	0.0	100	184
Not declared	-	-	-	-	-	1
Total	2.65	85.71	11.29	0.35	100	301
Timing of first PNC visit						
First trimester	3.2	75.3	21.5	0.0	100	158
Second trim.	1.7	98.3	0.0	0.0	100	121
Third trimester	4.8	95.2	0.0	0.0	100	21
Missing	-	-	-	-	-	1
Total	2.65	85.71	11.29	0.35	100	301

4.5.2 Differentials in the use of professional health providers for delivery care in Haiti

The use of professional health providers for delivery was the highest for respondents aged fifteen to sixteen at 48.4% compared to respondents aged seventeen to eighteen at 29.65% and respondents aged nineteen at 31.25%. However, the level of non-professional health providers at delivery was 68.30% for respondents aged seventeen to eighteen while it was 51.6% for those aged fifteen to sixteen. All age groups show slight differences in the use of skilled health providers for delivery (see table 5.3).

The urban rural gap is evident from the results in table 5.3. In rural areas the majority of births occur without assistance of professional health providers at 75%, only 22.2% of births occurred with professional providers' assistance. In urban areas 47.1% of births were delivered with professional health assistance while 51.27% were delivered without professional providers assistance. In rural areas, the majority of young mothers still deliver their babies at home instead of institutional settings where complications can still be managed when they arise.

Young mothers with no formal education were likely to be assisted by unskilled health providers at delivery with 83.30% compared to those with secondary levels of education at 46.43%. Also the proportion of births assisted by professional health providers increases as education levels increase at 16.7% and 52.15% respectively. Hence young mothers' education is positively associated with the use of skilled birth attendants for delivery care.

The results show that respondents from poorer households display higher levels of non-professional health providers at 83.50% compared with 42.9% of respondents from the richest households. Moreover, the use of professional health providers was 57.1% among respondents from the richest households compared with 12.7% of respondents from the poorer households. Hence wealth quintile is positively associated with use of professional health providers at delivery.

The result shows that both married and single young mothers show almost the same rate of use of non-professional health providers at delivery with 64.2% and 65.9% respectively. Additionally, single and married young mothers have a similar rate of professional health providers' use with 30.9% and 32.72% respectively.

Table 5.3 Distribution of young mothers by socio-economic and demographic factors and by the use of professional health providers for delivery care per 100 respondents HDHS2005-6

Variables	Personnel assisted with delivery				Total	Number of women
	No use of professional health providers	Use of professional health providers	No one	Missing		
Age						
15-16	51.6	48.4	0.0	0.0	100	31
17-18	68.3	29.6	2.1	0.0	100	142
19	65.58	31.25	2.38	0.79	100	128
Total	65.44	32.22	2.0	0.34	100	301
Place of residence						
Urban	51.27	47.1	0.79	0.84	100	121
Rural	75.0	22.2	2.8	0.0	100	180
Total	65.44	32.22	2.0	0.34	100	301
Level of education						
No education	83.3	16.7	0.0	0.0	100	30
Primary	69.5	27.5	3.0	0.0	100	200
Secondary	46.43	52.15	0.0	1.42	100	71
Total	65.44	32.22	2.0	0.34	100	301
Wealth Quintile						
Poorest	83.5	12.7	3.8	0.0	100	79
Poorer	81.8	16.7	1.5	0.0	100	66
Middle	61.0	39.0	0.0	0.0	100	59
Richer	41.91	53.22	3.24	1.63	100	62
Richest	42.9	57.1	0.0	0.0	100	35
Total	65.44	32.22	2.0	0.34	100	301
Marital status						
Single	64.2	30.9	4.93	0.0	100	81
Married	65.9	32.72	0.9	0.47	100	220
Total	65.44	32.22	2.0	0.34	100	301
Religion						
Catholic	66.7	32.1	1.3	0.0	100	159
Prt., M., J.W. Bud.	65.5	31.9	1.2	1.4	100	116
No religion	57.7	34.6	7.7	0.0	100	26
Total	65.44	32.22	2.0	0.34	100	301

Table 5.4 provide information on distribution of young mothers by planned pregnancy, timing of prenatal care and use of professional health providers for delivery care. The results showed that young mothers with planned pregnancies were 77.6% likely to be assisted by

non-professional health providers while 20.7% of them reported being assisted by professional health providers for delivery care. Furthermore, 58.2% of respondents with unplanned pregnancies reported being assisted by non-professional health providers while 39.7% of them were likely to be assisted by professional health providers for delivery care

Young mothers who started antenatal care in the first trimester of pregnancy were 37.3% likely to be assisted by professional health providers' attendants at delivery. On the other hand, 85.7% of young mothers who started prenatal care later in the third trimester were assisted by non-professional health providers, and only 14.3% of them reported being assisted by professional health providers. Furthermore, respondents who started antenatal care in the first trimester were 37.3% likely to be assisted by professional health providers compared with those who started antenatal care in the third trimester 14.3%.

Table 5.4 Distribution of young mothers' use of professional health providers for delivery care by planned pregnancy and by timing of first PNC visit per 100 respondents HDHS 2005-6

Variables	Personnel assisted with delivery				Total	Number of women
	No use of professional health assistance	Use of professional health assistance	No one	Not declared		
Planned pregnancy						
Then	77.6	20.7	1.7	0.0	100	116
Not at all	58.2	39.7	2.2	0.0	100	184
Not declared	-	-	-	-	-	1
Total	65.44	32.22	2.0	0.34	100	301
Timing of first PNC visit						
First trimester	60.1	37.3	2.5	0.0	100	158
Second trimester	69.4	28.9	1.7	0.0	100	121
Third trimester	85.7	14.3	0.0	0.0	100	21
Missing	-	-	-	-	-	1
Total	65.44	32.22	2.0	0.34	100	301

4.5.3 Differentials in use of health facilities for delivery care in Haiti

From table 5.5 the information on distribution of young mothers' socio-economic characteristics by the use of health facilities for delivery cares is given. The results

demonstrate a difference rate of home delivery among all age groups ranging between 61.3 % and 70.4% respectively. Likewise respondents who delivered their babies in health facilities exhibit different rate of births in health facilities ranged between 29.6% and 38.8

The use of health facilities for delivery was 47.10% in urban areas compared with 20% in rural areas. At the same time the table reveals that 80% of births occurred in no medical facilities such as home in rural, while in urban the figure was 52.06%.

Education attainment has a positive association with the use of health facilities for delivery. Table 5.5 shows that 49.29% of respondents with a secondary level of education were likely to use medical settings for delivery compared with 16.7% of respondents without education. Furthermore, the proportion of home delivery was higher for young women without education 83.3%; a result that suggests that, education is a good predictor of health facilities use for delivery care.

The results show that a great number of respondents from the poorest households 88.6% and the poorer households 83.3% were likely to deliver their babies at home compared with those from the rich and the richest households at 48.4% and 45.7% respectively. Also, 54.4% of respondents from the richest households compared with 11.4% from poorest households were likely to use of health facilities for delivery care. This result suggests a gap between the poor and the rich in the use of health facilities for delivery care.

The same table shows that 70.37% of unmarried young mothers delivered their babies in no medical setting such as home, compared to 68.18% of married young women who delivered their babies in a no medical settings. At the same time, both married and single young mothers reported a same level of institutional delivery with 29.63% of single young mothers and 31.36% of married young mothers respectively. Hence marital status does not impact the use of health facilities for delivery among young mothers. Religion does not influence the use of health facilities for delivery.

Table 5.5 Distribution of young mother's socio- economic and demographic characteristics and by place of delivery care per 100 respondents HDHS 2005-6

Variables	Place of delivery			Total	Number of women
	No use of health facilities	Use of health facilities	Missing		
Age					
15-16	61.3	38.7	0	100	31
17-18	70.4	29.6	0	100	142
19	68.75	30.46	0.79	100	128
Total	68.77	30.89	0.34	100	301
Place of residence					
Urban	52.06	47.1	0.84	100	121
Rural	80	20	0	100	180
Total	68.77	30.89	0.34	100	301
Level of education					
No education	83.3	16.7	0.0	100	30
Primary	73.5	26.5	0.0	100	200
Secondary	49.29	49.29	1.42	100	71
Total	68.77	30.89	0.34	100	301
Wealth quintile					
Poorest	88.6	11.4	0.0	100	79
Poorer	83.3	16.7	0.0	100	66
Middle	61.0	39.0	0.0	100	59
Richer	48.4	49.98	1.62	100	62
Richest	45.7	54.3	0.0	100	35
Total	68.77	30.89	0.34	100	301
Marital status					
Single	70.37	29.63	0.0	100	81
Married	68.18	31.36	0.45	100	220
Total	68.77	30.89	0.34	100	301
Religion					
Catholic	68.6	31.4	0.0	100	159
P., M., J.W., B.	69.8	29.3	0.9	100	116
No religion	65.4	34.6	0.0	100	26
Total	68.77	30.89	0.34	100	301

Table 5.6 provide information planned pregnancy, timing of first prenatal care and the use of health facilities for delivery care. The results reveal that 80.2% of young mothers who planned their pregnancies reported delivering their babies at home, while only 19.8% of them reported institutional delivery. Among young mothers with unplanned pregnancies, 62%

reported home delivery while 38% of them reported institutional delivery. Thus young mothers with unplanned pregnancies were 20% more likely to deliver at health facilities.

The results demonstrate that 85.7% of young mothers who started antenatal care in the third trimester reported delivering their babies at home while only 3% of them reported delivering their babies in health facilities. On the other hand, 63.3% of those who started antenatal care in their first trimester (less than four months of pregnancy) deliver their babies at home. The rate of institutional delivery was 36.7% among respondents with first antenatal care in the first trimester compared with 3% among respondents with first antenatal care in the third trimester.

Table 5. 6 Distribution of young mother’s place of delivery care and by planned pregnancy and timing of first PNC visit per 100 respondents HDHS 2005-6

Variables	Place of delivery			Total	Number of women
	No use of health facilities	Use of health facilities	Missing		
Planned pregnancy					
Then	80.2	19.8	0.0	100	116
Not at all	62.0	38.0	0.0	100	184
Not declared			-	-	1
Total	68.77	30.89	0.34	100	301
Timing of first PNC visit					
First trimester	63.3	36.7	0.0	100	158
Second trimester	73.6	26.4	0.0	100	121
Third trimester	85.7	3.0	0.0	100	21
Not declared	-	-	-	-	1
Total	68.77	30.89	0.34	100	301

4.6 Guyana analysis

4.6.1 Differential in the use of professional health providers in Guyana

Information on young mothers’ socio-economic status and use of professional health providers is given in table 6.1. The results reveals that demonstrates that, 85.1% of respondents aged seventeen and eighteen and 85.2% of respondents aged nineteen were likely to get antenatal care from professional health providers compared to only 66.7% of respondents aged fifteen to sixteen.

Table 6.1 Distribution of young mothers by socio-economic and demographic factors and by the use of professional health providers for prenatal care per 100 respondents by countries GDHS 2009

Variables	Personnel provider with ANC					Number of women
	No use of professional health provider	Use of professional health provider	No one	Missing	Total	
Age						
15-16	16.7	66.7	16.7	0.0	100	18
17-18	12.2	85.1	2.7	0.0	100	74
19	8.6	85.2	4.9	1.3	100	81
Total	11	83.2	5.2	0.6	100	173
Place of residence						
Urban	0.0	100	0.0	0.0	100	22
Rural	12.6	80.8	6.0	0.6	100	151
Total	11.0	83.2	5.2	0.6	100	173
Level of education						
No education	-	-	-	-	-	2
Primary	17.2	62.1	20.7	0.0	100	29
Secondary & hig.	10.0	87.3	2.1	0.6	100	142
Total	11.0	83.2	5.2	0.6	100	173
Wealth quintile						
Poorest	19.0	72.6	8.3	0.0	100	84
Poorer	5.3	86.8	5.3	2.6	100	38
Middle	0.0	100	0.0	0.0	100	27
Richer and richest	4.2	95.8	0.0	0.0	100	24
Total	11.0	83.2	5.2	0.6	100	173
Marital status						
Single	8.3	85	5.0	1.7	100	60
Married	12.4	82.3	5.3	0.0	100	113
Total	11.0	83.2	5.2	0.6	100	173
Religion						
Christian	13.1	80	6.2	0.7	100	145
Hindu and Muslim	0.0	100	0.0	0.0	100	27
Missing	-	-	-	-	-	1
Total	11.0	83.2	5.2	0.6	100	173

In urban areas, young mothers' level of use of health professionals provide for prenatal care was 100%, whereas in rural areas, they provide it to only 80%. The gap is marked.

It is well documented that women's education influences the use of health services. Table 6.1 also indicates that 87.3% of young mothers with secondary and higher levels of education were likely to get antenatal care from professional health providers compared with 62.1% of young mothers with primary education. On the other hand, the rate of no use of any care during pregnancy was 20.7% among young mothers with primary levels of education compared with 2.1% of respondents with secondary education.

Regarding the socio-economic status of young mothers the results demonstrate that young mothers in middle wealth quintile households show the highest rate of use of professional health providers for antenatal care 100% compared with 72.6% of young mothers from the poorest households. Furthermore, the higher rate of nonprofessional health providers use during pregnancy was found among the poorest at 19% (see table 6.1).

Moreover, the results indicate that 85% of single respondents and 82.3% of married respondents were likely to get antenatal care from skilled health providers. Hence, both married and single respondents exhibit a slight difference in their use of professional health providers.

According to the religious affiliation of young mothers, the results indicate that 100% of Hindu and Muslim respondents received antenatal care from skilled health providers compared with 80% of Christian respondents who received antenatal care from skilled health providers as well. The results also found that 13.1% of Christian gets antenatal care from nonprofessional health providers while 6.2% of them did not receive any care during pregnancy at all.

Table 6.2 give information on young mothers planned of pregnancy, timing of first prenatal care and use of professional health providers for prenatal care. Thus 85% of young mothers with planned pregnancies and 82.6% of young mothers with unplanned pregnancies were likely to get antenatal care from professional health providers. This result suggests that the planning of pregnancy does not influence the receipt of antenatal care from professional health providers during pregnancy.

Respondents who started antenatal care in the first semester and those who started it in the second and third trimesters with 83.3% and 91.1% respectively. On the other hand 16.7% of those respondents who started antenatal care in the first trimester and 8.9% those who started

in the second and third trimesters received antenatal care from non-professional health providers

Table 6.2 Distribution of young mothers by planned pregnancy and first PNC visit by the use of professional health providers for prenatal care per 100 respondents by countries GDHS 2009

Planned pregnancy	Personnel provider with PNC				Total	Number of women
	No use of professional health provider	Use of professional health Provider	No one	Missing		
Then	11.3	85	3.8	0.0	100	80
Not at all	10.9	82.6	6.5	0.0	100	92
Not declared	-	-	-	-	-	1
Total	11.0	83.2	5.2	0.6	100	173
Timing of first PNC visit						
First trimester	16.7	83.3	0.0	0.0	100	72
Sec.& third trim.	8.9	91.1	0.0	0.0	100	89
Not declare	-	-	-	-	-	12
Total	11.0	82.1	0.0	6.9	100	173

4.6.2 Differentials in the use of professional health providers for delivery care in Guyana

Table 6.3 provide information on young mothers' characteristics and use of professional health providers for delivery care. The reveals that 89.2% of respondents aged seventeen to eighteen, 86.4% of respondents aged nineteen and 83.3% of respondents aged fifteen to sixteen were assisted by professional health providers at delivery. This finding suggests that all age groups exhibit a slight difference rate of use of professional health providers for delivery.

Urban residents are recognised to have a higher use of professional health providers than rural residents. The same table 6.3 shows that 100% of urban respondents gave birth with the assistance of professional health providers. Furthermore, 85.4% of young mothers in rural areas were assisted by professional health providers. There is slight urban-rural difference in use of skilled health providers.

The results reveal that 88.7% Respondents with secondary and higher levels of education were 88.7% likely to use professional health providers for delivery than respondents without education 50%. This finding suggests that education level is the best predictor of use of -

Table 6.3 Distribution of young mothers by socio-economic and demographic factors and by the use of professional health providers for delivery care per 100 respondents GDHS 2009

Variables	Personnel assisted with delivery			Total	Number of women
	No use of professional health providers	Use of professional health providers	Missing		
Age					
15-16	16.7	83.3	0.0	100	18
17-18	10.8	89.2	0.0	100	74
19	12.4	86.4	1.2	100	81
Total	12.1	87.3	0.6	100	173
Place of residence					
Urban	0.0	100	0.0	100	22
Rural	13.9	85.4	0.7	100	151
Total	12.1	87.3	0.6	100	173
Level of education					
No education	-	-	-	-	2
Primary	17.2	82.8	0.0	100	29
Secondary & higher	9.9	88.7	1.4	100	142
Total	12.1	87.3	0.6	100	173
Wealth quintile					
Poorest	22.6	77.4	0.0	100	84
Poorer	5.3	92.1	2.6	100	38
Middle	0.0	100	0.0	100	27
Richer and richest	0.0	100	0.0	100	24
Total	12.1	87.3	0.6	100	173
Marital status					
Single	11.6	86.6	1.8	100	60
Married	12.4	87.6	0.0	100	113
Total	12.1	87.3	0.6	100	173
Religion					
Christian	13.8	84.8	1.4	100	145
Hindu & Muslim	0.0	100	0.0	100	27
Not declared	-	-	-	-	1
Total	12.1	87.3	0.6	100	173

professional health in Guyana. In addition, 82.8% of respondents with primary levels of education were likely to be assisted by skilled health providers.

Regarding young mothers' wealth status the results demonstrate that 100% of young mothers from the middle wealth quintile households, and 100% from rich and richest households were likely to report assistance of professional health providers at delivery compared with 77.4% of respondents from the poorest households. However, 92.2% of young mothers from poorer households were likely to be assisted by professional health providers at delivery. Moreover, 22.6% of poorest households reported assistance of nonprofessional health providers at delivery.

The results show a slight difference rate among married and single young mothers in their receipt of assistance from professional health providers during delivery with 86.6% and 87.6% respectively.

Information on religious affiliation and use of professional health providers at delivery is given as followed. 100% of respondents from the Hindu and Muslim religions were likely to be assisted by professional health providers for delivery compared with 84.7% of respondents from the Christian religion. Consequently a similarity was found among religious categories use of professional health providers for delivery (see table 6.3)

Table 6.4 Distribution of young mothers' use of professional health providers for delivery care by planned pregnancy and by timing of first PNC visit per 100 respondents GDHS 2009

Planned pregnancy	Personnel assisted with delivery			Total	Number of women
	No use of professional health provider	Use of professional health providers	Missing		
Then	7.5	92.5	0	100	80
Not at all	16.3	83.7	0	100	92
Not declared	-	-	-	-	1
Total	12.1	87.3	0.6	100	173
Timing of first PNC visit					
First trimester	12.5	87.5	-	100	72
Second & third t.	10.1	89.9	-	100	89
Not declared	-	-	-	-	12
Total	10.4	82.7	6.9	100	173

Table 6.4 provide Information on planned pregnancy and young mothers assisted with delivery. The results show that 92.5% of young mothers who planned their pregnancies and 83.7% of young mothers who did not plan their pregnancies were likely to be assisted by professional health providers. Furthermore, the rate of use of non-professional health providers was 16.3% among women with unplanned pregnancies.

Regarding timing of first antenatal care and personnel assisted with delivery, the results show that 89.9% of respondents who started antenatal care in the second and third trimesters were assisted by professional health providers comparable with 87.5% of respondent who started tier antenatal care in the first trimester. Early antennal care did not have impact the use of professional health providers at delivery (see table 6.4).

4.6.3 Differentials in use of health facilities for delivery care in Guyana

Table 6.5 gives information on distribution of young mothers by socio-economic, demographic characteristics and use of health facilities for delivery. The results show that delivery in health facilities was difference among all age groups as data reveals that, 86.5% of young mothers aged seventeen to eighteen; 77.8% of those aged fifteen to sixteen, and 82.75% of those aged nineteen reported delivering their babies in health facilities.

Concerning place of residence, 100% of young mothers in urban areas delivered their babies in an institutional setting, whereas 81.5 % of young mothers in rural areas delivered their babies in health facilities. Furthermore only 17.9% of young mothers from rural areas delivered at home.

Young mothers' education is positively associated with use of place of delivery. The data in table 6.5 reveals that the use of health facilities for delivery was high among young mothers with primary levels of education at 86.2% and secondary and tertiary levels of education at 83.8%. Primary and secondary levels of education exhibits similar rate of health delivery deliveries.

Regarding young mothers socio-economic status, the same table shows that 100% of young mothers from the middle wealth quintile, and 100% from the rich and richest wealth quintile households were likely to use medical settings for delivery compared to 69% and 94.7% of young mothers from poorest and poorer households respectively. This finding suggests that wealth status have impact on young mothers use of health facilities for delivery.

The findings reveal that 85% of young married women delivered their babies in health facilities, while 15% of them delivered their babies at home. Among unmarried young mothers, 81.6% used health facilities for delivery care whereas 16.6% of them delivered in a no medical setting such as home.

Table 6. 5 Distribution of young mother's socio- economic and demographic characteristics and by place of delivery care per 100 respondents GDHS 2009

Variables	Place of delivery				Number of women
	No use of health facilities	Use of health facilities	Missing	Total	
Age					
15-16	22.2	77.8	0.0	100	18
17-18	13.5	86.5	0.0	100	74
19	16.0	82.7	1.3	100	81
Total	15.6	83.8	0.6	100	173
Place of residence					
Urban	0.0	100	0.0	100	22
Rural	17.9	81.5	0.6	100	151
Total	15.6	83.8	0.6	100	173
Level of education					
No education	-	-	-	-	2
Primary	13.8	86.2	0.0	100	29
Secondary & higher	15.5	83.8	0.7	100	142
Total	15.6	83.8	0.6	100	173
Wealth quintile					
Poorest	31.0	69.0	0.0	100	84
Poorer	2.6	94.7	2.7	100	38
Middle	0.0	100	0.0	100	27
Richer & Richest	0.0	100	0.0	100	24
Total	15.6	83.8	0.6	100	173
Marital status					
Single	16.6	81.6	1.8	100	60
Married	15.0	85.0	0.0	100	113
Total	15.6	83.8	0.6	100	173
Religion					
Christian	17.9	81.4	0.7	100	145
Hind., and Musl.	3.7	96.3	0.0	100	27
Not declared	-	-	-	-	1
Total	15.6	83.8	0.6	100	173

Table 6.6 provides information on planned pregnancy and place of delivery. The results show that 88.8% of respondents with planned pregnancies reported that they delivered their babies in health facilities while 11.3% of them delivered at home. On the other hand, 80.4% of young mothers with unplanned pregnancies delivered their babies in a medical setting and 19.6% of them delivered at home.

Information on timing of first antenatal care and place of delivery is provided in table 6.20 below. The results show that 87.6% of young mothers who started antenatal care in the second and third trimesters were likely to deliver their babies in health facilities, whereas 83.3% of those who started in the first trimester delivered in health facilities. Moreover, 16.7% of young mothers who started antenatal care in the first trimester delivered their babies at home while 12.4% of young mothers who started antenatal care in the second and third trimesters of pregnancy.

Table 6.6 Distribution of young mother's place of delivery care and by planned pregnancy and timing of first PNC visit per 100 respondents GDHS 2009

	Place of delivery			Total	Number of women
	No use of medical setting	Use of medical setting	Missing		
Planned pregnancy					
Then	11.3	88.8	0	100	80
Not at all	19.6	80.4	0	100	92
Not declared	-	-	-	-	1
Total	15.6	83.8	0.6	100	173
Timing of first PNC visit					
First trimester	16.7	83.3	0	100	72
Second & third tr.	12.4	87.6	0	100	89
Not declared	-	-	-	-	12
Total	13.3	79.8	6.9	100	173

From the analysis of these six countries it is clear that the use of professional health providers and health facilities for delivery are influenced by level of education, place of residence, wealth status and marital status.

Chapter five Discussion

This chapter discusses important issues that emerged from the results, and compare the results across the six countries such as Kenya, Ethiopia, Nepal, Bangladesh, Haiti, and Guyana. The factors analysed were perceived of prenatal care from a professional health provider, assistance of a professional health providers for delivery care, the use of health facilities for delivery care, timing of first prenatal care, number of prenatal care visit, and planned pregnancy.

5.1 Socio-demographic and socio-economic information and use of professional health providers for prenatal care

With respect to socio-economic and demographic factors that influences young mothers' use of professional health providers during pregnancies in all six countries slight differences between young mother's ages, planned pregnancy in receiving antenatal care from professional health providers. But the use of professional health providers during pregnancy was mostly influenced by place of residence and young mother's level of education. For instance, in Ethiopia the urban and rural rate was (56.25% versus 24.96%). In Bangladesh the rate was (65.59% versus 34.57%), in Guyana (100% versus 80.8). Ethiopia, Nepal, Bangladesh and Guyana show some level of urban rural gap of skilled health providers at delivery at the point where it is observed that within countries the urban-rural gap is considerable. The most remarkable gap was found in Nepal with 79.1% of young urban women compared to 34.6% of young rural women. These findings are consistent with those reported in a study by Navaneetham and Dharmaligam (2002), and in another study by Ochako, Fotso, Ikamari, and Khasakhala (2011) that showed that women residing in urban areas were more likely to use modern health care than those residing in rural areas. In all six countries education was positively associated with the use of professional health providers for prenatal care.

Regarding levels of education, young women with secondary and higher levels of education were more likely to receive prenatal care from professional health providers than young women with no education. These findings are consistent with the findings from other studies (Van Eijk and Lindblabe, 2006) and are also consistent with a study done by Alexandre, Saint-Jean, Crandall, and Fevrin (2005) that demonstrates that education was associated with

Table 7 Distribution of young women who a live birth in the five years preceding the survey by place of delivery for the most recent live birth and by country, the most recent DHS 2005-2010

The use professional health providers for prenatal care by country						
Variables	Kenya 2008-9	Ethiopia 2005	Nepal 2006	Bangladesh 2007	Haiti 2005-6	Guyana 2009
Age						
15-16	79.51	27.05	47.1	38.2	93.5	66.7
17-18	88.30	28.18	44.0	42.44	83.1	85.1
19	86.50	32.21	43.5	47.36	86.71	85.2
Level of education						
No education	78.90	22.17	30.6	22.22	66.7	-
Primary	87.6	36.2	44.0	37.93	86	62.1
Secondary	84.30	84.0	60.8	51.65	92.97	87.3
Wealth quintile						
Poorest	88.3	15.40	25.0	26.47	86.00	72.6
Poorer	90.60	19.80	28.1	29.30	86.40	86.8
Middle quintile	76.90	24.30	42.5	38.44	88.10	100.0
Rich	80.30	33.74	58.6	53.5	83.82	95.8
Richest	95.20	55.80	76.2	75.78	94.30	
Place of residence						
Rural	90.60	24.96	34.60	34.57	84.4	80.8
Urban	85.60	56.25	79.70	65.6	87.57	100.0
Marital status						
Single	91.20	28.56	24.41	40.00	85.2	85.0
Married	80.80	29.55	44.20	43.65	85.90	82.3
Number of women	N=255	N=441	N=321	N=753	N=301	N=173

prenatal care attendance, and decision making seeking prenatal care from professional providers.

The level of household wealth status was also found to be positively associated with young mother's use of antenatal care from professional health providers in all six countries. There is a huge gap between those on the upper index of the wealth status variable versus those at lower index in terms of use of professional health providers for prenatal care. In Nepal it was at 76.2% versus 25% for the poorest. In Bangladesh the richest-poorest gap was 75.78% versus 26.47%. Ethiopia 55.8% versus 15.4%. These findings are consistent with those found in another study (Peters, Garg, Bloom, Walker, Brieger, and Rahman, 2008).

According to marital status both married and single in Guyana, Haiti, Bangladesh and Ethiopia exhibit a similar level of receipt of prenatal care from professional health providers. Except in Kenya were the level of receipt of antenatal care from a professional health

providers was at 91.2% among married compared with 80.8% of single, and in Nepal (44.2% versus 24.75%). These findings are supported by other studies in India that found a low utilization of antenatal care services among young never married (Singh, Rai, Alagarajan and Singh, 2012), and these findings are consistent with those found by (Mekonnen and Mekonnen, 2003).

With respect to religion in Guyana Christians were more likely to use health facilities for delivery compared to (Hindus and Muslims). In Haiti religion did not impact the use of professional health providers at delivery.

5.2 Socio-demographic and socio-economic information and use of professional health provider for delivery care

With respect to the socio economic and demographic indicators and use of professional health providers for delivery in all six countries, table 3 reveals that young mothers from the richest and rich household wealth quintile were more likely to be assisted by professional health providers for delivery care. There were a huge gap between young mothers on the upper index of the wealth index and those at the lower index in terms of professional health use at delivery. These findings are consistent with that found by (Mills, Williams, Adjuik, and Hodgson, 2008) that showed that women on upper index of the wealth quintile are more likely to sought professional delivery assistance than those on the lower index.

Education level determines young mothers' use of professional health providers for delivery, as it was found that young mothers with secondary education were more likely to be assisted by professional health providers compared with young mothers with no education. These findings are consistent with a finding reported in a study by Hale, DaVanzo, Razzaque, and Rahman (2009), who found that educated women are aware of the benefits of health care and are more likely to use health services. This can be explained by the fact that education improves the ability to afford the cost of health care, and their enhanced level of autonomy results in improved ability and freedom to make health-related decisions, including choice of which maternal services to use (Celik, 2000; Raghupathy, 1996). For instance in Kenya the use of professional health providers for delivery was determined by the richest and richer household wealth quintile, marital status, urban place of residence, and secondary and higher education. Even though the Ministry of Health abolished the payment of fees in all public

maternity hospitals and clinics in Kenya to ensure that all pregnant women are safe and that they are getting quality health services (Carrin, James, Adelhardt, Doetinchem, Eriki,

Table 8 Distribution of young women who had a live birth in the five years preceding the survey by personnel providing assistance during delivery and by country for the most recent DHS 2005-2010

The use of professional health providers for delivery care by country						
Variable	Kenya 2008-9	Ethiopia 2005	Nepal 2006	Bangladesh 2007	Haiti 2005-6	Guyana 2009
Age						
15-16	56.4	13.52	29.4	14.5	48.4	83.3
17-18	45.8	12.94	28.7	14.6	29.6	89.2
19	56.7	12.05	19.5	19.21	31.25	86.4
Level of education						
No education	26.3	6.05	13.7	2.02	16.7	-
Primary	47.6	21.05	21.0	8.62	27.5	82.8
Secondary	74.5	52.0	41.2	23.69	52.15	88.7
Wealth quintile						
Poorest	23.0	3.4	7.4	6.64	12.7	77.4
Poorer	34.6	3.7	15.6	5.4	16.7	92.1
Middle quintile	56.4	0.0	20.8	11.9	39.0	100.00
Rich	80.3	13.50	28.6	23.9	53.22	100.00
Richest	71.4	41.02	64.3	37.8	57.1	
Place of residence						
Rural	44.6	5.6	16.9	10.28	22.2	85.4
Urban	77.4	54.6	52.2	30.73	47.1	100.0
Marital status						
Single	50	22.41	-	25.00	30.9	86.6
Married	52.9	11.47	24	15.96	32.72	87.6
Number of women	N= 255	N= 441	N= 321	N=753	N= 301	N= 173

denHomborgh, Kirigia, Koemm, Korte et al., 2007; UNDP, 2012), nearly half (47%) of young mothers in Kenya are still giving birth without the presence of skilled birth attendants. This can be explained by high inequity in the health system in Kenya (Chuma and Okungu, 2011; Luoma, Doherty, Muchiri, Barasa, Hotfler, Maniscalco, Rosalind, Ouma, and Maundu, 2010). Other explanations that include the high level of poverty, difficulty of access to health facilities and poor a health system (Ahmed, Hossain, Chowdhury, and Bhuiya, 2011; IRIN, 2012).

With regard to marital status in Guyana, Kenya, and Haiti both married and single women had some level of use of skilled health providers at delivery except for Ethiopia, Nepal and Bangladesh where single young mothers were more likely to use skilled health providers than

married women. These findings are supported by a systematic study that found marital status among factors that influenced antenatal care in developing countries (Simkhada, van Teijlingen, Porter, and Simkhada, 2008).

With respect to religious affiliations the results of this study reveals that in Guyana Hindus and Muslims 100% were more likely to use professional health providers for delivery compared to Christians 84.4%. In Bangladesh religion did not play a big role. All religious in Haiti exhibit a similar rate ranging between 31.9% and 34.6% respectively. In Nepal Hindus were 24.2% likely to use professional health providers than were (Bundist, Muslims, Kirats and Chretians). In Kenya Roman Catholics were more likely than Muslims to deliver with professional health assistance (see table 1.2, 2.2, 3.2, 4.2, 5.2 and 6.2)

Table 9 Distribution of young women who had a live birth in the five years preceding the survey by place of delivery and by young mothers characteristics and by country, DHS 2005-2010

Variables	The use of health facilities for delivery care by Country					
	Kenya 2008-9	Ethiopia 2005	Nepal 2006	Bangladesh 2007	Haiti 2005-6	Guyana 2009
Age						
15-16	56.4	13.52	29.4	14.5	38.70	77.80
17-18	44.2	12.95	31.3	13.8	29.60	86.50
19	55.8	11.36	23.4	21.8	30.46	82.70
Level of education						
No education	26.3	3.40	15.3	2.02	16.70	-
Primary	45.90	3.70	25.0	9.05	26.50	86.20
Secondary& higher	74.51	0.00	45.4	24.4	49.29	83.80
Wealth quintile						
Poorest	23	3.40	8.8	7.44	11.40	69.00
Poorer	32.66	3.70	15.6	6.00	16.70	94.70
Middle quintile	56.4	0.00	24.7	12.50	39.00	100.00
Rich	75.4	13.50	37.1	23.90	49.98	100.00
Richest	71.4	39.97	64.3	38.68	54.30	
Place of residence						
Rural	43.1	5.28	20.0	10.32	20.00	81.5
Urban	77.4	54.65	55.2	32.60	47.10	100.0
Marital status						
Single	47.90	22.41	33.3	25.0	29.63	81.6
Married	52.10	11.27	27.1	16.5	31.36	85.0
Number of women	N=255	N=441	N=321	N=753	N=301	N=173

With regard to educational levels of women, the study reveals that home delivery was frequently found among young women with no education and with primary education, while young mothers with secondary and higher education are more likely to deliver at health facilities in all countries. The higher level of home delivery was found among uneducated young mothers in all the six countries ranging between 50% and 93.56% respectively. These results show that education is positively associated with the use of health facilities for delivery and this is in accordance with the findings from other studies by Ciceklioglu, Soyer, and Ocek, 2005; Golddani, and Bettiol, 2004; Celik and Hotchiss (2000). They are also in conformity with another study that reported that no educated women are likely to deliver their babies at home or in no medical settings (Alexandre, Saint-Jean, Crandall, and Fevrin, 2005). These results can be explained by the fact that education increases a young mother's autonomy; therefore it may influence the decisions regarding issues such as the use of professional health providers as well as prenatal facilities (Reynolds, Wong, and Tucker, 2006). Furthermore the use of institutional settings for delivery was determined by the geographical location such as urban and rural areas. These findings can be explained by a study done by Gage and Clixte (2006) when they demonstrated that the use of delivery services and care seeking during pregnancy are constrained by geographical locations and distance from the nearest hospital.

Regarding urban-rural place of residence, a remarkable gap was found in Ethiopia, Bangladesh, Nepal and Haiti. Regarding Ethiopia, this can be explained by the influence of traditional practices (Mekanomen and Mekanomen, 2002). This finding is supported by Stephenson, Baschieri, Clements, Hennink, and Madise (2006) when they found that urban residence augmented the likelihood of delivery of child in a health facility in Malawi, Tanzania, and Ghana. In addition, this finding is consistent with that of Awoke, Muhammed, and Abeje, (2013) who confirmed that rural mothers were less likely to give birth at health facilities compared to urban mothers. Furthermore, this finding is in concordance with the work of Say, and Raine (2007) conducted in developing countries. This indicates that the use of maternal health care varied greatly both within and between countries and, urban or women in higher wealth quintiles were usually more likely to use health facilities for delivery than rural and poor women.

Young married, in Bangladesh, Ethiopia, Nepal and Guyana were less likely to use health facilities for delivery. These findings are supported by a study done by (Onah, Ikeako, Iloabachie, 2006). In Kenya, and Haiti married were likely to use health facilities for delivery

than single. Furthermore, age, and planned pregnancy didn't play an important role among you women regarding the use of health facilities for delivery care in all six countries.

With respect to religion in Guyana Hindus and Muslims 96.3% were more likely to use health facility for delivery compared to Christians 81.3% and in the rest of countries religion did nor play a big role in influencing young mothers' use of health facilities for delivery (see table 1.3, 2.3, 3.3, 4.3, 5.3, and 6.3)

5.3 Place of delivery and professional health providers assistance at delivery

Figure 1 presents the percentage of young mother by place of delivery and professional health providers assistance at delivery by study countries. The data shows that deliveries in institutional settings were likely to be assisted by professional health providers (such doctor, nurse, and midwife) in all six countries compared with home delivery. These findings are supported by Garces, McClure, Chomba, Patel, Pasha, Tshetu, Esamai et al., (2012) who demonstrated that home births were often found attended by non-professional health providers such as illiterate women or those with little formal training, and most had few of the skills access to tests, medical and equipment that are necessary to reduce maternal, foetal or neonatal mortality.

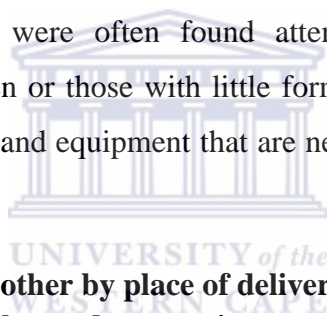
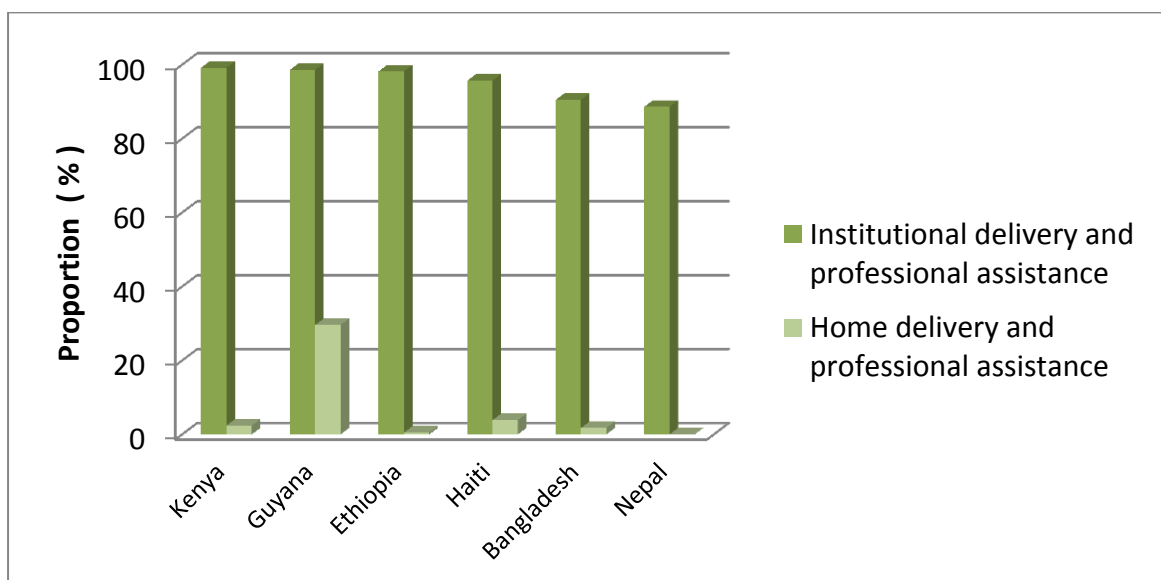


Figure 1 Percentage of young mother by place of delivery and professional health providers assistance at delivery by study countries



Source of data: study analysis (DHS).

5.4 Problem in accessing health facilities

Figure 2 present the percentage distribution of young mothers by reason of home delivery and by countries. It is documented that where health services are present, there are many factors that may cause women not to use the services, particularly when the health concern is related to the decision seeking for place of delivery. Information on such factors is particular important in understanding and addressing the barriers women face in seeking care during pregnancy and the time of delivery. Thus the present study looked at the challenge that limited young mother's access to health facilities for delivery and the factors that influence the reasons of not using institutional settings for delivery. Young mothers were interviewed about the reason for home delivery using the DHS women questionnaire but only Kenya, Nepal, Guyana, Haiti and Ethiopia had the data available on women reporting a home birth gives the reason for not using a health facility for delivery.

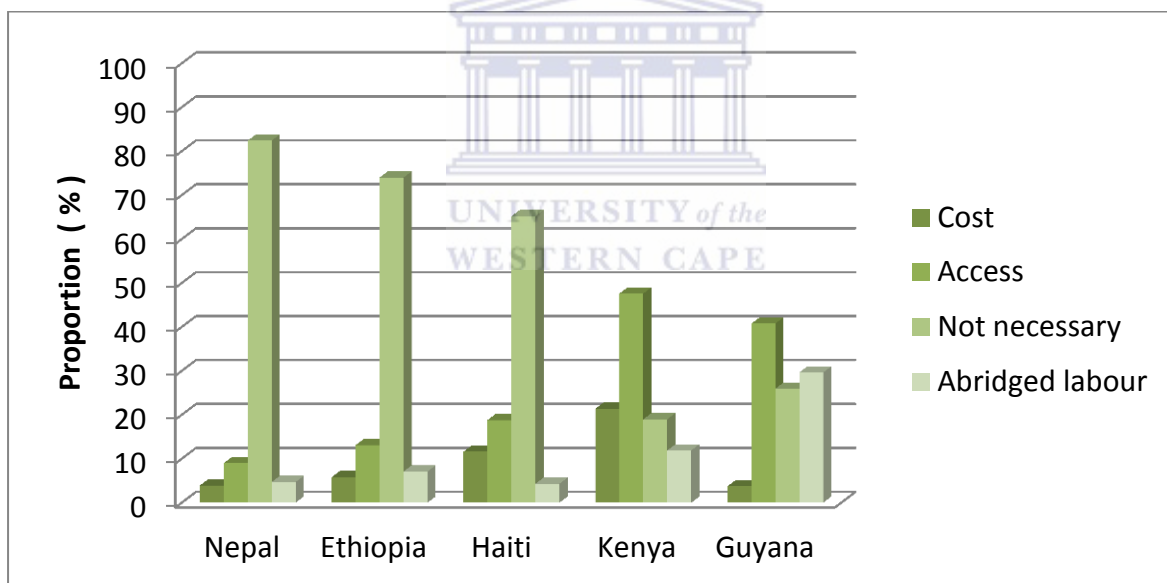
Women who were knowledgeable about the importance of health services were more likely to utilize health facilities for delivery compared to those with no knowledge. However, delivery in health facilities was deemed "not necessary" (defined as husband did not allow, family did not think necessary, not customary) were the most frequently mentioned reasons for not delivering in health facility in Nepal, Ethiopia, and Haiti, ranging between 65.2% and 82.4% respectively. These results are supported by those of other studies that demonstrated that lack of knowledge and importance of services as a deterrent of young adolescents' use of health facilities for delivery (Sendderowitz, Hainsworth, and Solter, 2003). For instance, in a study conducted in Ethiopia by Teferra, Alemu, and Woldeyohannes (2012) found that closer attention from family members and relatives was the most common reason for home delivery. "Access" (defined as facility close, too far, did not trust facilities, no transport, did not know where to go, no female providers) were the main problem of not using health facilities for delivery in Kenya and Guyana.

This finding is supported by Some, Sombie, and Meda (2011) when they demonstrated that distance from the health facility is a deterrent for women delivering in health facilities. This finding is also supported by Hounton, Chapman, Menten, deBrouwere, Ensor, Sombié, Meda, and Ronsmans (2008) when they demonstrated that in a district of Burkina-Faso where the level of facility-based intervention was greater, the increase of rate in institutional births was higher. Furthermore, this finding is consonant with that of Mills, Williams, Adjuik, and Hodgson, (2008) who reported that the community perceived access to care was strongly

associated with use of health professionals for delivery. Thus, difficulty in getting to health facilities or inability to afford transport might have deterred some young women from seeking professional assistance. These findings are also supported by the argument that access may have an impact on the use of health services when the quality of services offered is high (Agha and Carton, 2011). In Tanzania the distance to the health facility was a significant determinant of type of delivery care (Mpembeni, Killewo, Leshabari, Massawe, Jahn, Mushi, and Mwakipa, 2007).

Financial barrier to utilization of health facilities for delivery remains substantial in Kenya 21.2% % of young women who did not have their last birth in a health facility cited the high cost of care as the reason for not doing so, followed by Haiti with 11.65%. These findings are consistent with reasons found in Pakistan (Agha and Carton, 2011) (see figure 2).

Figure 2 Percentage distribution of young mothers by reason of home delivery and by countries

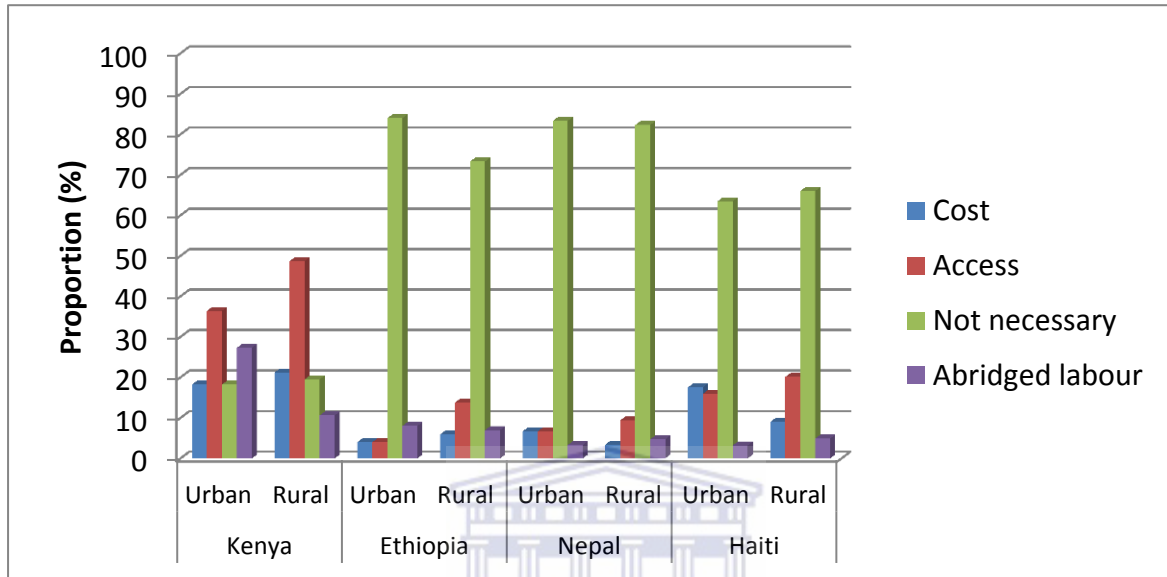


Source of data: study analysis (DHS)

When examining for the reason of home delivery by place of residence, the results show that in urban Kenya access was cited as a reason for not using health for delivery at 36.4% compared with 48.7% in rural areas. In Ethiopia it was cited at 4% in urban and 13.8% in rural areas. In Nepal it was cited at 6.7% in urban and 9.4% in rural areas and Haiti 15.9% in urban and 20.1% in rural areas. There were differences between urban and rural areas for young mother’s reason for home delivery. In Guyana the data was not enough to cross

tabulate with place of residence. As for Bangladesh the data on young mothers' reason for not deliverer at health facilities was available (see figure 3).

Figure 3 Percentage distribution of young mothers by reason of home delivery and by place of residence by countries



Source of data : study analysis (DHS)

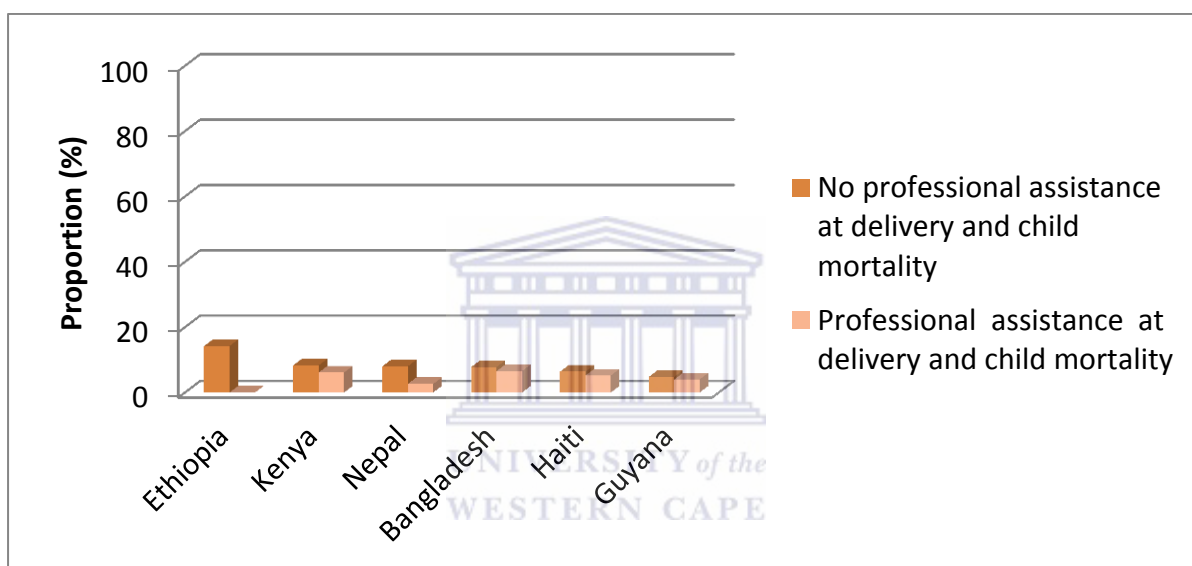
Those findings are consistent with results found in Nepal by (Thatte, Mullany, Khatry, Katz, Tielsch, and Darmstadt, 2009) which showed that health services are still under-utilized due to cultural barriers, poor access, perceptions of poor quality, higher cost, and a preference for care within the community.

5.5 Safe delivery and child mortality

Giving birth in a health facility under the care and supervision of trained health care providers promotes a child's survival and reduces the risk of maternal mortality (Stephenson, Baschieri, Clements, Hennink, and Madise, 2006). This argument is supported by the findings of this study that show that in all six countries children whose mothers were assisted by non-professional health providers were more likely to die compared with children whose mothers were assisted by professional health providers. These findings suggested that the use professional health providers for delivery care have a positive impact on child mortality. For instance in Kenya the rate was 6.1% of children of who mothers were assisted by professional health providers compared to 8.3% of children of who mothers were assisted by nonprofessional at delivery, in Nepal 2.6% versus 8%, in Haiti 5.2% compared to 6.6%. In

Ethiopia the rate of child mortality was 0% among children of who mothers assisted by professional health providers than 14.2% among children of who mothers were assisted by professional health providers. This high rate of child mortality among young mothers' children in Ethiopia can be explained by unavailability of skilled health providers as the results of this study show that 14.2% of children whose mother were assisted by nonprofessional health providers were more likely to die suggesting that they did not get skilled assistance (cf. figure 4).

Figure 4 Percentage of young mothers by birth assisted by professional health providers by child mortality and by countries per 100 respondents



Sources of data: study analysis (DHS)

With respect to the influence of health facilities on child mortality, the results found that babies delivered at home were more likely to die than those delivered in health facilities. More surprisingly in Ethiopia the rate of child mortality was 14.2% among children delivered at health facilities compared to 0% of children delivered at home. This suggests a 0.142 probability of under reporting of dead born at home and dead very young, followed by Nepal 2.3% versus 8.54% and in Haiti 4.3% compared to 6.8%. In Kenya the rate was 5.4% compared to 7.2% of children delivered at home. (Cf. figure 5). These findings are supported by a study done in Nepal which demonstrated that delivery in the home under unhygienic condition, increases the likelihood of pathogenic microorganisms entering the corstump of the neonatal or birth canal of the mother (Mullany LC, Darmastad GL, Katz J, Khatri SK, LeClerq SC, Adhikari RK et al 2007). Another study in Egypt on the impact of clean delivery-kit use on the newborn umbilical cord and maternal puerperal infections showed that

birth in urban areas were less likely to have umbilical cord infection compared to neonates born in rural areas, even after adjusting for the use and place of delivery. This could possibly be attributed to cord care and hygiene practices (Darmstadt, Hassan, Balsara, Gipson, and Santosham, 2009).

These findings are consistent with that of Stephenson, Baschieri, Clements, Hennink and Madise (2006) when they reported that birth in health facilities attended by skilled health providers is associated with lower rates of maternal and child mortality. The high probability of being among children of mothers who deliver at home can be explained by the fact that midwives do not have bags of breakup equipments when engaging in home delivery. This statement is supported by a study done by Garces, McClure, Chomba, Patel, Pasha, Tshefu, Esamai et al., (2012) that demonstrated that in developing countries most home birth attendants did not have basic equipment such as blood pressure apparatus, stethoscopes, infant bags and mask manual resuscitators.

The unexpected result was the higher level of child mortality among those young mothers who delivered their babies in health facilities in Guyana and Bangladesh. This can be explained by the lack of professional health providers at facilities and lack of appropriate maternal for maternity care.

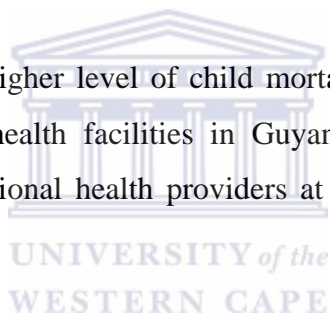
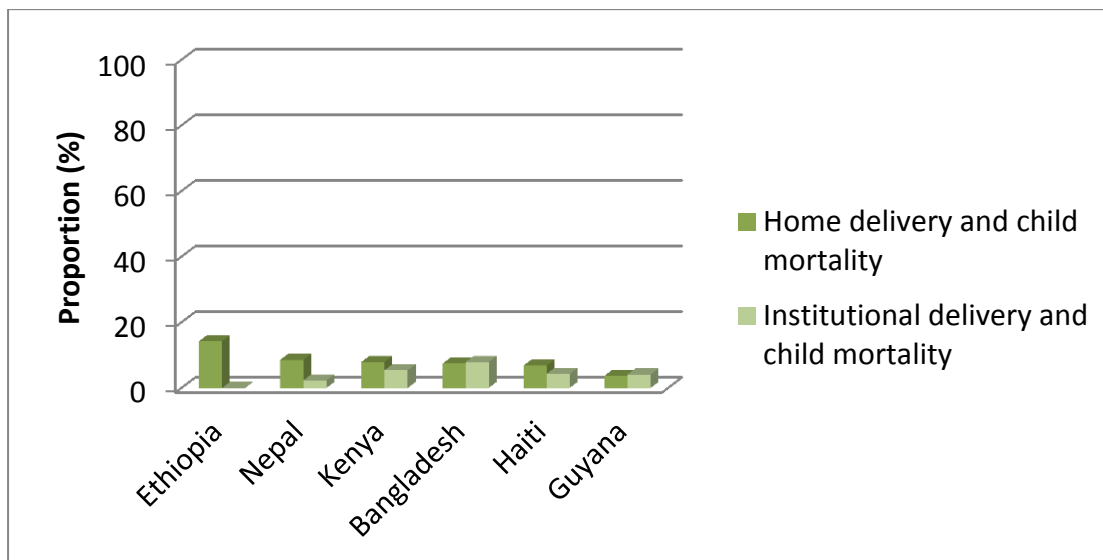


Figure 5 Percentage of young mothers who had an institutional delivery by child mortality and by countries



Source of data: study analysis (DHS)

5.6 Level of the use of professional health providers and health facilities by countries

Figure 6 summarises the information related to young mother's use of professional health providers for delivery care, prenatal care and the use health facilities for delivery care by countries. Young mothers were interviewed in order to collect information about the personnel who provided antenatal care during pregnancies, the person assisted with delivery care, and the place of delivery.

The main results were that in Kenya, Guyana and Haiti young mothers were much likely to receive prenatal care from professional health providers such as doctors, nurses and midwives during pregnancy ranging between 83.20% and 87.60% respectively. This study found a low level of professional health assistance during delivery in Nepal and Bangladesh; and the lowest level was found in Ethiopia at 14.4% of antenatal care provided by professional health providers. This low rate of professional health providers use during pregnancy in Ethiopia can be explained by a weak health care system and infrastructure (Chaya, 2007), or due to the fact that traditional medicine is given high priority and is considered an integral part of the health system in Ethiopia (Woldemicael and Tenkorang, 2010). Therefore, many rural Ethiopians are still attached to traditional practices and they give birth at home (Irin, 2013). The higher level of use of skilled health providers in Kenya could be due to the fact that Kenya has a strategy called the Kenya Essential Package for Health (KEPH) assumed to reduce fragmentation and improve continuity of care, and this strategy emphasizes the inter-connection of the various phases in human development, including attention during pregnancy to improve the chances of safe delivery (Kenya Health system, 2005-2010). In Guyana the health care system is highly decentralized and the country has some key national frameworks such as the national Health Sector Strategy 2008-2012 which provides strategies and direction to the ways in which the nations health systems and services are organized and delivered (Pan America Health, 2009; WHO, 2011).

As for Kenya, the Ministry of Health stipulated that health care at dispensary and health centre level be free for all citizens. In 1989 the use of fees was introduced and abolished in 1990 then reintroduced in 1992, and in June 2004 the user fee system was considerably altered, when the Ministry of Health stipulated that health care at dispensary and health centre level to be free for all citizens, except for a minimal registration fee in government health facilities (Carrin, James, Adelhardt, Doetinchem, Eriki, den Hombergh, Kirigia, Koemm, Korte et al., 2007) this encouraged women to use health services. These findings

were confirmed by a study done in Kenya by Mwabu, Mwanzia, and Liambila (1995) who showed that during the period of cost-sharing in public clinics, attendance dropped by about 50%, and this drop encouraged the government to suspend the fees for about twenty months. The same study explained that over the seven months after suspension of fees, attendance at government health centres increased by 41%. The abolition of fees in all public maternities units and clinics in Kenya aimed to ensure that all pregnant women are safe and that they are getting quality health services (UNDP, 2012). The lower level of professional health providers' use for antenatal care among young mothers in Nepal could be due to the shortage of skilled health providers, and the weak health system and limited access to basic maternal health care through a poorly developed transportation system (Bidya, 2008). This can also be attributed to a weak health system in Nepal (Witter, Khadka, Nath, and Tiwari, 2011). (cf figure 6).

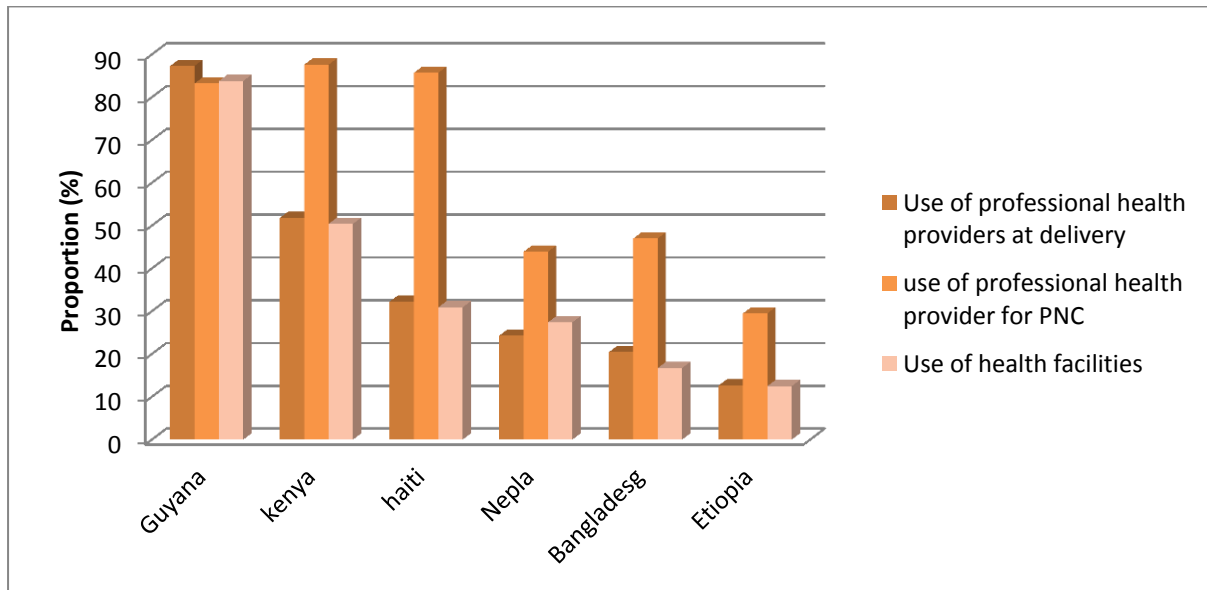
The same figure 6 present data on young mothers' use of professional health providers at delivery. It is well documented that the presence of professional health providers at delivery is critical to avoid serious complications and receive treatment early when the situation can still be controlled Donnay (2000). In general, the pattern of birth attendance for women at delivery is similar to their use of health facilities. This study found a big difference across countries in the use of professional health providers at delivery. Guyana exhibits the highest level of young mothers who reported having been assisted by skilled health providers at delivery followed by Kenya, Haiti, Nepal, Bangladesh and Ethiopia. However, Ethiopia was the country with the lowest rate of professional health providers delivery with only 12.65 %. This can be explained by unavailability of health facilities (Fikre, Addis, and Demissie, 2012) and a strong attachment to traditional practices that normally accompany home births especially in rural areas in Ethiopia (Woldemicael and Tenkorang 2010; Irin, 2013). These findings are consistent with those reported in a study done in Ethiopia by Teferra, Alemu and Woldeyohannes (2012) who found that 12.1% delivered in health facilities, and of 87.9% gave birth at home. 80.0% of them were assisted by family members and relatives. Furthermore, a study by (Rhaman, 2006) demonstrates a poor implementation of health sector policy, planning and action in Bangladesh.

This study has investigated the level of young mother's use of health facilities for delivery care. The results reveal that the highest level of use of institutional settings for birth delivery was found in Guyana, followed by Kenta, Haiti, Nepal and Bangladesh, and the lowest level was found in Ethiopia (cf figure 6).

This can be explained by the overall situation of a poor health system in Ethiopia (Chaya, 2007), and poor implementation of health sector policy, planning, and action (Rhaman, 2006). This finding is consistent with a finding of another study by Magadi, Madise, and Rodrigue (2000) which demonstrated that teenagers were more likely to deliver at home than in health facilities. And this can be explained by the fact that in most case teenagers are under supervision of parents mother in-laws or husbands, and they do not have the autonomy of moving or seek care themselves and they have to be accompanied by a relatives. This claim is supported by a study done in Nepal by Simkhada, Porter, and Van Teijlingen (2010) that showed that mothers in-laws played a major role in their daughters' in-laws decision making to seek health care. Moreover, the higher level of institutional delivery in Guyana could be due be to the fact the Ministry of Health took health as a right of every citizen and all women have rights to deliver in public health facilities free of charge. Indeed, this encourages women and increases the level of health services utilization in Guyana (Pan America Health, 2009). As for Kenya despite the effort made to abolish maternity and clinic fee for birth delivery; 50% of young mothers still deliver their babies at home (Carrin, James, Adelhardt, Doetinchem, Eriki, den Hombergh, KIrigia, Koemm, Korte et al., 2007; UNDP, 2012). Bangladesh, Nepal and Haiti have the same level of those young mothers who reported having delivered their babies at health facilities ranging between a low of 16.7% to a higher of 30.89%. The majority of births delivered at home were found among the poorer in all six countries.

This study confirms previous research that found that most poor women in developing countries give birth at home (Montagu, Yamey, Visconti, Harding, and Young, 2011). Also, it appears to be consistent with previous findings that showed that poor people have less access to health services since they lack financial resources or information and this can create a barrier to accessing services (Peters, Garg, Bloom, Walker, Brieger and Rahman, 2008); compared to wealthier women who are likely to deliver in health facilities. These findings are also consistent with those reported by Guliani, Sepehri, and Serieux, 2012; Rahman, Mosley, and Akhter (2008) when they found that women from wealthier households were significantly more likely to deliver in a health facility than women from poorer households

Figure 6 Percentage of young mothers' use of professional health providers and health facilities for delivery care by study countries



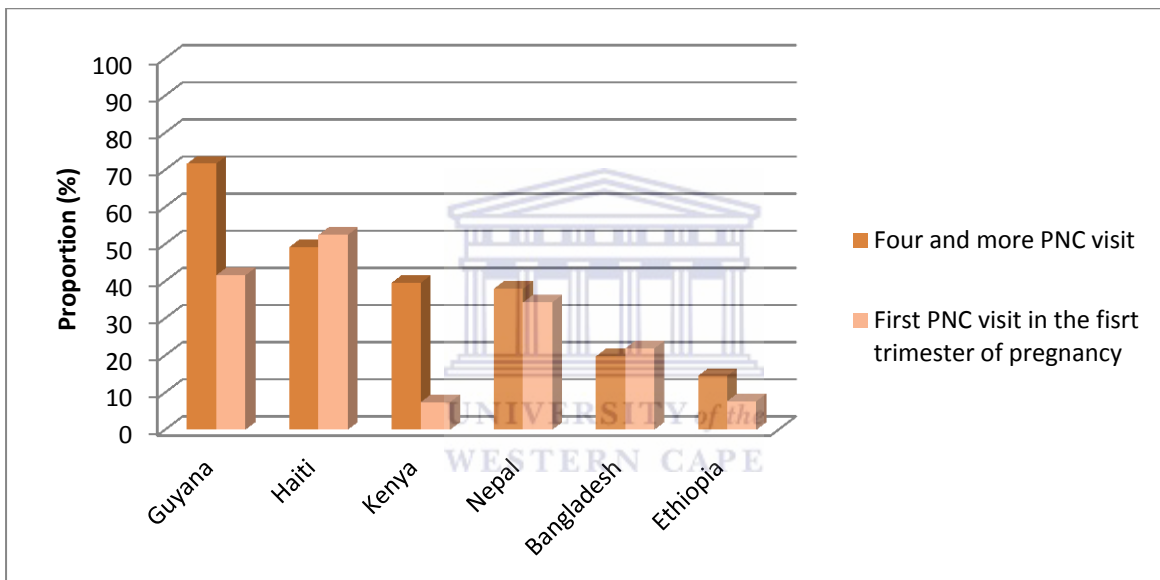
Source of data: study analysis (DHS)

This study has examined the frequency of prenatal care visits made by young mothers during pregnancy and found that there were a big differences among studied countries in their receipt of adequate number (four or more) of antenatal care recommended by the World Health Organization (WHO, 2003; Okoli, Abdullahi, Pate, Abubakar, Aniebue, and West, 2012). Guyana came first with the highest level of those who reported four and more antenatal care visits, followed by Haiti, Kenya, Nepal, Bangladesh and Ethiopia (cf figure 7).

With respect to timing of antenatal care, it is well documented that early detection of problems in pregnancy leads to more timely referrals in the case of women in high-risk categories or with complications (Garrido, 2009). Despite the benefits of early timing of the first antenatal care visit, the majority of young women delayed to seek antenatal care in all six countries. This finding is consistent with the findings of Ochako, Fotso, Ikamari, and Khasakhala (2011) who found that a large percentage of young pregnant women do not receive antenatal care during their first trimester as is recommended by the WHO., which may affect the type of assistance they receive during delivery. Receipt of PNC in first trimester was found higher in Haiti, followed by Guyana, Nepal, Bangladesh, Ethiopia and Kenya demonstrated an extremely low level of receipt of antenatal care in first trimester at 7.45% and 7.7 % respectively. These results can be explained by an overwhelming majority of young women in Kenya 62.72% who received antenatal care in the second semester. These

findings are consistent with a study done in Kenya where it was reported that only 14% started antenatal care in the first trimester, the majority 64% started in the second trimester and 23% in the third trimester (Ouma, van Eijk, Hamel, Sikuku, Odhiambo, Munguti, Ayisi, Crawford, Kager, and Slutsker, 2010). Likewise Jewkes and Mvo (2001) revealed that many women started antenatal care in their second and third trimesters. Whereas in Ethiopia 69.5% did not receive any care at all. These findings are consistent with the findings of Ochako, Fotso, Ikamari, and Khasakhala (2011). (cf figure 7).

Figure 7 Percentage of young mothers who make four and more PNC visit, and first PNC visit in the first trimester of pregnancy (less than four months) by countries per 100 respondents



Source of data: Study analysis (DHS)

CHAPTER SIX: CONCLUSIONS AND RECOMMENDATIONS

This chapter is the last of this study, it presents the conclusion arising from the discussion of the findings and attempts to answer the research questions outlined in chapter one. This is followed by recommendations, which are grounded in the findings of the study and aspects for future research are highlighted.

6.1 Conclusion

Regarding the methodology used, this study used two main approaches, (univariate and bivariate) in order to analyze the factors that are likely to influence young mothers' use of professional health providers and health facilities for delivery care in the developing world so as to achieve the Millennium Development Goals.

With descriptive approaches, this study investigated young mothers' level of health services utilization and with cross tabulation this study explored differentials that may exist in the context of access and use of prenatal facilities and maternal variables. The overall objective was to compare the use of health facilities, the use of health providers and the challenge observed by young mothers in accessing health facilities. Differences in access have been discussed. Moreover, the socio-economic and demographic factors that can impact or allow access and use of health services have been discussed. By comparing the results of KDHS 2008-9, EDHS 2005, BDHS 2007, NDHS 2006, NDHS 2006, and GDHS 2009 data the variations have been presented.

The study main results are that, place of residence, education levels and households' wealth quintile are the factors influencing the use of professional health providers and health facilities for birth delivery. These variables reveal that a high proportion of wealthy, educated and urban young mothers were more likely to use health facilities for delivery and professional health providers during pregnancy and for birth delivery than poorer women, uneducated and those from rural areas. These findings suggest that these factors cited are positively associated with access and use of health facilities for delivery and should be the target of interventions aimed to increase the use of prenatal facilities and skilled health providers in these countries.

Furthermore, this study looked at the reasons for not delivering at health facilities with a professional health provider. It succeeded in identifying a number of factors influencing accessibility to health facilities for delivery care that should be the target of interventions that

aim to increase the use of health facilities and professional health providers. It also highlighted that knowledge about the relevance of prenatal health services is the strongest predictor of use of health facilities for delivery. Therefore, policy makers should raise awareness about the relevance of delivering in health institutions assisted by professional health personnel and the implementation of policies. More effort should be given to improving accessibility of the services especially physical accessibility in these areas. Access and use of health facilities related variable were investigated through variables such as cost, access, not necessary, and abridged labour, use of professional health providers for delivery and antenatal care and use of health facilities for delivery. This was done in order to investigate young mothers use and accessibility to health facilities and the various socio-economic and demographic factors determinant of such services. Access, defined as facility close, distance, the quality of services at facilities did not trust facilities, problem transport, did not know where to go, concern about the gender of providers was the main problem in Guyana and Kenya. However, knowledge about the importance of health services was found to be the strongest reason cited for home delivery in Haiti, Nepal, and Ethiopia.

The results also highlighted that the child of a mother who was assisted by a non-professional health provider had a higher probability of dying before age one than compared with those assisted by a professional health provider at delivery. Similarly with a child delivered in a non-institutional setting. In fact children of mothers who reported having delivered at health facility and those who reported being assisted by a professional health providers at delivery were more likely to be alive compared to children of mothers who reported being delivered at home and those assisted by non-professional health providers at delivery. These results confirmed the hypothesis stated in the first chapter.

This study shows that the use of health facilities for delivery and professional health for delivery were found better in Guyana and worse in Ethiopia. The use of health services was very low in Ethiopia due to the lack of accessible to and availability of health facilities, poor socio-economic status and low level young mothers perceptions of quality of care offered at health facilities, availability of professional health provider, distance to health facilities problem transport and knowledge of necessity of using health facilities were identified as strong predictors of health services utilization. These findings suggested that providing a good quality of health services at facilities level, reducing barrier to use of services, improving accessibility to prenatal facilities, improving young mother socio-economic status

and increasing knowledge of the necessity of using health facilities and health provider during and at birth delivery and can be regarded as a model of access and use of health facilities for these six countries.

Rural young mothers were less likely to use the services and this means that health care programmes should be expanded and intensified in the rural areas, along with culturally appropriate education campaigns. Further to this, young mothers should be provided with life skills (including vocational training) and sexuality education to increase their autonomy, mobility, self-esteem, and decision-making abilities. Policy maker should address this issue by strengthening young women's education given that education was found to be a determinant of delivery in health facilities and use the professional health providers. This finding suggests that improving educational opportunities for young mothers may have a large impact on improving the use of such services. This is however a long term investment and as an alternative the short term health program needs to focus on attracting those young mothers with less or no education to use services.

In Ethiopia, Nepal, and Bangladesh single young mothers were likely to deliver their babies at health facilities and to be assisted by skilled providers. Whereas in Kenya, Guyana, and Haiti both married and single had similar levels of institutional deliveries and professional health providers. It is therefore imperative to target these two groups (married and unmarried young mothers) during education campaigns (Mekonnen, and Mekonnen, 2003).

The present study has some limitations such as young mothers who had only one live birth in the five years preceding the survey and the way in which they access and use health facilities. Due to the scope of time given for this work this study was not able to capture all dimensions of services received during pregnancy or at delivery. However, this study focuses on use of health facilities for delivery and use of professional health providers and the factors that determine the use of such services as well. Another limitation is that there was not available data on reason for home delivery in Bangladesh. As for Guyana the data on reasons young mother did not deliver at health facilities were available the sample size was too small to bring together with the socio- demographic characteristics to look for the factors that are likely to influence the decision for delivering in a health facility.

In summary the international consensus for improving maternal and child health is that all pregnant women should be assisted by a professional health provider who has the required equipment, drugs, supplies and an adequate referral system in place. These strategies are

referred to as “Skilled birth attendance” and consist of two essential components-skilled health personnel defined in this study as professional health providers and an enabling environment that is an institutional setting also defined as a health facility or a medical setting. We can summarise that a good quality of care perceived at facilities and good manners of health providers, presence of professional health providers at facility, availability and accessibility of health facilities play an important role in young mothers’ use of health facilities for delivery care and professional health providers.

This study found some socio-economic and demographic factors that influence on use of professional health providers. They include education levels, economic status, place of residence marital status and religion. Furthermore, the results of this analysis show that institutional care seeking for child birth is currently determined by community access to health facilities, economic status, education and place of residence in all six countries. However, to improve coverage of health facilities which provide skilled delivered care, there is need to raise the status of women in terms of education and socio-economic status, and to improve provision of health education to women especially on the importance of delivering at health facilities with assistance of professional health providers is also important to intensify individual counselling of women on hospital delivery and on birth preparedness.

6.2 Recommendations

- Policy regarding young women’s education should be strengthened since education is a strong predictor of factors which impel women’s participation in health activities and has a large impact on improving the use of health services.
- The inequality regarding the use of professional health providers and health facilities may impact on those from poorer background and rural areas. Policy makers should take to in account rural young mothers in regard to creating opportunities to deliver at health facilities.
- Access to delivery care services in Haiti, Nepal, Bangladesh, and Ethiopia need to be improved by ensuring young women have full access to health facilities such delivery at health facilities and use of skilled providers.
- Promoting to young women friendly health services that are available, accessible, and affordable, can encourage each young mother to use the health services.
- In some developing countries the vast majority of births still take place at home without skilled care. Therefore, there is a need for policies to focus on factors such as

insufficient health infrastructure, and barriers to access to health facilities, including costs.

- Empower young women economically and socially and help them secure live-hoods may increase their decision making power and improve the demand for health services.
- It is also important to promote health programmers that engaging young women partner and family members in order to improve their knowledge about the importance of birth delivery in a health facilities.

6.3 Future research

Our study provides a comparative analysis of Demographic and Health Survey data on access and use of professional health providers and institutional settings for delivery. Additional analysis of existing data sets will provide more detailed information for individual countries, both on young mother's health-seeking behaviour for maternal health services, and on the vaccination status of children and important childhood illnesses and their treatment among young mothers aged fifteen to nineteen years old. At the same time, more targeted primary research on this topic is still needed; particularly operations research that can measure the quality of services received by young mothers at antenatal care, at delivery and post natal care as the scope of time didn't allowed as to use all these aspect.

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