FACTORS AFFECTING UTILIZATION OF HOSPITAL DELIVERY SERVICES AT GARISSA COUNTY REFERRAL HOSPITAL, KENYA

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Factors Affecting Utilization of Hospital Delivery Services at Garissa County Referral Hospital, Kenya

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DECLARATION

This thesis is my original work and has not been presented for a degree in any other university.

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DEDICATION

This thesis is dedicated to my wonderful wife Shariffa Nur and children Ismail, Abdilatif, Abdirahman, Abdiqalaq, Jamila, Salma, Adan Abdille and Abdille Nur Farah for their endless love, support and encouragement. Thank you for giving me a chance to prove and improve myself through all my walks of life. I love you.

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ABBREVIATIONS AND ACRONYMS

AIDS	Acquired Immunodeficiency Syndrome
ANC	Antenatal Clinic
BEMOC	Basic Emergency Obstetric Care
CORPS	Community Own Resource Persons
DANIDA	Danish International Development Agent
DFID	International Development
DHMT	District Health Management Team
DMOH	District Medical Officer of Health
EMOC	Emergency Obstetric Care
FP	Family Planning
HIV	Human Immunodeficiency Virus
KNBS	Kenya National Bureau of Statistics
KM	Kilo Meter
MCH	Mother Child Health Clinic
MDG	Millennium Development Goals
MIP	Malaria in Pregnancy
MOH	Ministry of Health

MOP	Ministry of Planning
NEP	Northeastern Province
OBA	Output Based Approach
PGH	Provincial General Hospital
PMTCT	Prevention of Mother to Child Transmission
PHMT	Provincial Health Management Team
SPSS	Statistical Package for Social Science
TBA	Traditional Birth Attendant
UNFP	United Nation Population Fund
UN	United Nation
UNICEF	United Nation Children Fund
WHO	World Health Organization

DEFINITION OF OPERATIONAL TERMS

Skilled deliveries: These are deliveries conducted by health workers who are trained on midwifery skills. These are nurses, clinical officers, doctors, midwives.

Skilled attendant: Attendance by health workers who are trained on midwifery to women during pregnancy, deliveries and after deliveries (postnatal)

Hospital deliveries: These are deliveries that are conducted within hospital set-up

Home deliveries: Deliveries that are conducted outside the hospital

Maternal mortality: This iseath that occurred to a woman who is pregnant or within 42 days after termination of pregnancies that is aggravated by the existence of the pregnancy but not accidental or incidental

Utilization: This is the act of using the available service that is provided by the health facility

Health Workers: These are all staff who are working at the provincial general hospital who contribute provision of deliveries services regardless of their cadre and qualifications.

ABSTRACT

Reducing maternal mortality remains one of the targets of the Sustainable Development Goals that has not been achieved in sub-Saharan Africa. While there is evidence that institutional delivery and skilled attendance are essential in decreasing maternal and neonatal mortality, majority of women in low income countries continue to deliver at home. The 2014 Kenya Demographic and Health Survey indicated that 92% and 65.9% of women in Kenya and the former North Eastern Province, respectively, received Antenatal Care from a medical professional yet, only 17.3% of births are delivered in a health facility compared to 82.7% home deliveries in NEP. The main objective of this study was to determine factors affecting hospital delivery utilization among women attending Garissa level 5 hospital**.** This cross-sectional study enrolled 410 women who had given birth in the previous one year. Data was collected using questionnaire which was administered to the study population and three focus group discussions consisting of 12 participants were conducted using a guide. Data from questionnaire was entered and analyzed using SPSS version 18 while qualitative data in form of notes were analyzed manually based on themes generated from responses in line with the study objectives. Chi square was used to determine associations with variables. Its results are presented in form of tables, percentage and graphs. Findings from FGD are presented in verbatim form. Proposal for this study got ethical approval from KEMRI ethical committee. Participants were requested to give informed consent prior to their acceptance to participate in the study. The mean age of these 338 women who responded was 27.03 (SD± 4.66) years ranging from 17 to 48 years. The majority of the women (71.6%) were aged between 21 to 30 years, 32.8% had tertiary level education, 86.1% were married, 62.4% attended the GCRH for antenatal care services, and 56.2% were currently pregnant. About three quarters (76.3%) had previously delivered at the GCRH. In multivariate analysis, women who were nulliparous (OR 0.2, 95% CI 0.09 to 0.6), had delivered in the hospital in the previous 2 years (OR 12.8, 95% CI 5.1 to 32.4) or 3 years (OR 13.1, 95% CI 4.9 to 34.4) or those who liked the cleanliness of the hospital (OR 1.9, 95% CI 1.1 to 3.7) and appreciated hospital due to availability of medical supplies (OR 1.8, 95% CI 1.1 to 3.3) were independently associated with hospital delivery. From FGDs, previous hospital experience, parity and socio-cultural norms had a significant influence on Utilization of hospital delivery. In conclusion, a high proportion of women from Garissa County; an arid, marginalized and hard to reach region in the North Eastern Kenya, are increasingly delivering at the hospital. If issues that improve women's rating of the hospital such as ANC, hospital cleanliness, equipment and medical supply availability and improved privacy are tackled, this region is poised to record one of the highest up take of hospital delivery in Kenya.

CHAPTER ONE

INTRODUCTION

1.1 Background information

In Sub-Saharan Africa, a woman's risk of dying from complications of pregnancy and childbirth over the course of her lifetime is 1 in 22, compared to 1 in 7,300 in the developed world (UN, 2008; Filippi *et al.*, 2006). Key elements to improve outcome are to promote antenatal care and delivery with assistance of a skilled health worker (UN, 2008; WHO, 2004). World Health Organization (WHO) defines skilled delivery as deliveries conducted by health professionals (medical doctors, nurses, clinical officers and midwives) trained on Basic Emergency Obstetric Care (BEmOC) (WHO, 2005). These deliveries could either be hospital or home based, but conducted by qualified health worker who meet the minimum standard in maintaining hygienic conditions. Sub-Saharan Africa has made little progress and remains to have a low coverage of skilled attendance at delivery (UN, 2008).

Reducing the global burden of preventable maternal, neonatal and child deaths is currently a major focus for the global health community (Hogan *et al*., 2010). Despite the WHO's Safe Motherhood Initiative, the 2014 Kenya Demographic and Health Survey (KNBS, 2014) showed that only about 61.2% occurred in hospitals assisted by skilled health personnel. Further, the report shows that only 29.2% births in Garissa County in the North Eastern part of Kenya were delivered in a health facility (KNBS, 2014). Consequently, maternal mortality rates in Kenya are ranked top 18 highest in the world at 360 deaths per 100 000 births (WHO, 2015).

Skilled birth attendance (SBA), readily accessible appropriate care in case of complications and effective postnatal care within the first 24 hours of delivery are strategies that can improve perinatal outcomes for mothers and babies (Filippi *et al*., 2006; Adegoke & van den Broek, 2009; Liambila *et al*., 2014; Adebowale & Udjo, 2016). Despite the concerted efforts in sub-Sahara Africa to increase the

proportion of deliveries conducted by SBA, non-SBA, who include traditional birth attendants (TBAs), neighbors and self, continue to play an important role during child birth (Liambila *et al*., 2014). In the 2014 KNBS, about 19.1% and 55% of all deliveries in Kenya and in Garissa County were conducted by TBAs (Liambila *et al*., 2013; KNBS, 2014). Consequently, maternal mortality death was highest in the Kenya at 510/100,000 which was an increment from 2003 KNBS of 414/100,000 (KNBS, 2009). About 68.6% of these deaths occurred in the marginalized arid part of Kenya with Garissa County accounting for 55% of these deaths (KNBS, 2015). In sub-Saharan Africa the maternal mortality ratio in the same period was estimated at 546 per 100,000 in the period 1990 and 2015 (WHO, 2015).

In common with other regions of Africa, despite the increased child birth and complication awareness, a significant proportion of mothers in developing countries still deliver at home unattended by skilled health workers (Montagu *et al*., 2011; Liambila *et al*., 2014). Some of the reported factors associated with unsupervised deliveries include maternal age, parity, education level, marital status, family size, household wealth, community health infrastructure, region, rural/urban residence, available health facilities, and distance to health facilities (Hogan *et al*., 2010; Gabrysch *et al*., 2011; Ochako *et al*., 2011; Kitui *et al*., 2013; Liambila *et al*., 2014; Adebowale & Udjo, 2016). The reasons for delivering at home between and within countries also vary widely (Sobel *et al*., 2010; Montagu *et al*., 2011).

The key pillars to achieving safe motherhood can only occur in a controlled hospital environment, with good hygienic conditions, skilled personnel and the availability of resources to manage any obstetric complications. Despite increased Kenyan government financial support due to devolution since 2010 and by other international programs such as the United Nations Development Programme (UNDP) and United Nations Children Fund (UNICEF) there is little evidence of fundamental change in Kenyan maternal health statistics especially in the North Eastern part of Kenya (KNBS, 2015). Identifying community hospital deliveries awareness, practices and attitudes constitutes an important entry point

for behavior change (National Institute for Health and Clinical Excellence, 2007). This study was conducted to evaluate views of women; pregnant and non-pregnant receiving various services at Garissa Provincial General Hospital (GCRH) on the attractions of and deterrents to hospital-based deliveries. The GCRH is located in an arid, marginalized and insecure part of North Eastern Kenya.

1.2 Problem statement

Skilled delivery is one of the strategies advocated for to reduce the unacceptably high maternal mortality in the developing countries like Kenya (UNFP, 2002). Low skill attendances during delivery is correlated with the higher maternal death globally and sub-Sahara Africa is most affected (Lawson, 2003). Although significant efforts have been made to improve the skilled delivery services in Kenya, there is still underutilization of hospital delivery with only six in ten live births were delivered in a health facility, 46% in the public sector and 15% in the private sector. Still more than one-third of births (37%) were delivered at home (KNBS, 2014). The evidence from the KNBS 2014 showed very low hospital deliveries among the pregnant mothers of NEP, with about 29.2% of mothers delivering in health facilities compared with 61.2% nationally (KNBS, 2014). While about half of pregnant women in Kenya receive at least four ANC visits, only 11% receive 4 ANC visits in the NEP (KNBS, 2014). According to KNBS (2014) 45% women in Kenya deliver in a health facility and about 42% assisted by skilled health personnel. In NEP only 17% of the pregnant women deliver in health facilities with 32% of the deliveries being assisted by health professional. Accordingly, North Eastern Kenya had the highest maternal mortality rate in the country with estimates from UNICEF/WHO suggesting more than 1,000 deaths per 100,000 live births per year. This is twice the national maternal mortality ratio (KNBS, 2014).

Although the Garissa county is served by a number of health facilities, including the Provincial general hospital, Iftin sub-district hospital among others, it has a low coverage of hospital deliveries. Increasing the proportion of babies that are

delivered under supervision of health professionals is an important factor in reducing the health risks to both the mother and the baby. Proper medical attention and hygienic conditions during delivery can reduce the risks of complications and infection that can cause morbidity and mortality to either the mother or the baby (WHO, 2004).

1.3 Justification

North eastern region of Kenya had the lowest hospital delivery but good utilization of ANC services (KNBS, 2014). A comparison between ANC and hospital delivery within Garissa level 5 hospital reveals a big disparity. Similarly, the region had highest maternal mortality which has been shown to correlate with the low utilization of skilled delivery. Skilled delivery is one of the proven strategies within the safe motherhood concept in reducing maternal death and therefore seeking client perspective is vital as their views will go a long way in improving maternal services (Lawson *et al*, 2003). This is more so in a community like the Somali which is conservative in their culture and who may not otherwise get other forums to air their concerns. The involvement of the communities in planning of any health service delivery is imperative (Witter *et al*, 2003). This will increase their participation and will create the ownership to foster improved utilization of the planned services. Given the lack of immediate need demonstrated for preventive care by the communities, maternal services as preventive measure is particularly important in involving the community (Witter *et al*, 2003).

1.4 Significance of the study

Achieving safe motherhood can only occur in a controlled hospital environment, with good hygienic conditions, skilled personnel and the availability of resources to manage any obstetric complications. Despite increased Kenyan government financial support due to devolution since 2010, and further support by other international programs such as the United Nations Development Programme (UNDP) and United Nations Children Fund (UNICEF) there is little evidence of fundamental change in Kenyan maternal health statistics especially in the North

Eastern part of Kenya [KDHS, 2014]. The rate of hospital deliveries is also low. Therefore, identifying community hospital delivery awareness, practices and attitudes constitutes an important entry point for reducing maternal mortality rate and infant mortality (National Institute for Health and Clinical Excellence, 2007).

1.5 Research questions

1. What is the proportion of women utilizing antenatal services at GCRH?
2. What are the socio-cultural factors influencing utilization of hospital deliveries at GCRH?
3. What are the economic factors influencing the utilization of hospital delivery services at GCRH?
4. What is health facility-based factors influencing utilization of hospital delivery services at GCRH?

1.6 Objectives

1.6.1 General objective

To determine factors affecting non-hospital delivery among women attending GCRH

1.6.2 Specific objectives

1. To determine the proportion of women utilizing antenatal services at GCRH
2. To determine the social-cultural factors affecting the utilization of hospital deliveries at GCRH
3. To determine economic factors influencing utilization of hospital delivery services at GCRH
4. To determine the health facility-based factors influencing utilization of hospital delivery services at GCRH

CHAPTER TWO
LITERATURE REVIEW

2.1 Background

Pregnant women need a continuum of care to ensure the best possible health outcome for them and their newborn (WHO, 2004). The report sees the skilled attendants, which are considered accredited health professionals only, at the center of this continuum of care. However, accessibility of these maternal health care services is a major challenge. Access is considered to have at least five different components: physical availability of services, distance, economic costs, social and cultural factors and the quality of services (WHO, 2003). From the literature, it may appear there is a huge discrepancy between attendances of two essential components of care: the antenatal care and institutional delivery services. However, a closer look at the level of antenatal care services puts it in a different perspective and may question the quality of these services as well. Despite a relatively high utilization of 92%, very few women start antenatal care during the first trimester. In Malawi only 8% of the pregnant women have a first visit in the recommended first trimester (NSO, 2005). The WHO (2003) also recommends at least 4 visits during pregnancy, but only 57% of the pregnant women in Malawi have managed to do so (NSO, 2005). These challenges are found in many other African countries as well (Magadi *et al*., 2007; UN, 2008; WHO, 2003). It illustrates that the gap between antenatal care and institutional delivery may well depend on the utilization of the first visit in the recommended first trimester. The odds of delivery with a skilled birth attendant are higher when a woman attends more antenatal visits (Mills *et al*., 2008; WHO, 2003).

The above figures may also indicate that the quality of antenatal care services is inadequate, which might be another reason why women end up refraining from institutional delivery. The WHO (2003) argues though that most monitoring tools, like surveys used at national level, are not well equipped to assess whether the antenatal care services meet the standards, because they merely use descriptive statistics and do not asses in-depth the perceptions of service

providers and users. A few studies have tried to assess the quality of these services. Stekelenburg *et al*., (2004) described in a cross-sectional descriptive study that health education on risk factors and information on the expected date of delivery are not always received. Gage (2007) underscored the importance of these informational barriers in rural Mali. Through multilevel logistic regression models, lack of counselling about pregnancy complications and not knowing where to go came out as significant factors that affect the likelihood to deliver at a health facility. However, as much as the content of antenatal care services has been found inadequate, it does not necessarily mean that it forms the reason why women refrain from attendance. Stekelenburg *et al*., (2004) showed that women in rural Zambia actually still appreciate the maternal health services, but found no association between perceived quality and use of the services. Although these findings should be considered context specific, it shows the importance to assess the perceptions of quality of services in good detail, in relation to the health seeking behaviour of women in this study.

The quality of the institutional deliveries may be a factor as well. The number of facilities that are equipped to offer basic emergency obstetric care services (BEmOC) is still inadequate in Kenya (Leigh *et al*., 2008). That does not mean though that facilities without BEmOC services do not conduct deliveries. Increasing the number of BEmOC sites will therefore not increase the number of sites where deliveries take place, but it will at least equip facilities to improve the quality of services, which in turn may lead to increased attendance. However, Gage (2007) did not find a significant effect of the availability of these services, but argued that it is the ability to access services that matters.

Quality of services is also determined by staff performance. Lack of human resources may be a factor that leads to hampering quality. A study by Mathole *et al*., (2005) described how health workers in Zimbabwe acknowledged that the interaction with the users is not always sufficient, due to workload and subsequent stress. In-depth interviews with Mozambican midwives in Maputo identified similar barriers, also due to an unsupportive environment (Pettersson *et*

al., 2006). The WHO (2004) reiterates the importance of a functional health system, as an enabling environment for the skilled attendants to perform.

2.2 Factors influencing utilization of maternal health services

Several studies looked at the demand side factors affecting access to maternal health services.

2.3 Maternal age and parity

The effect of age of the mother has been described in several studies, but with mixed findings. Stanton *et al*., (2007) showed in an overview of population-based surveys a decrease in skilled attendance with age while Lindstrom and Muñoz-Franco (2006) describe the contrary. This different outcome may actually be caused by considering parity as cofounding factor. Increased parity has been described to have a negative impact on institutional delivery (Simkhada *et al*., 2008; Stanton *et al*., 2007). The WHO (2003) concluded that the differences are more marked for parity, except in Sub-Saharan Africa, where the differentials across both age and parity are small.

2.4 Physical barriers affecting utilization of hospital deliveries

Physical barriers, like distance and lack of transport, negatively influence access to health services in Africa (Gage, 2007; Mills *et al*., 2008; Stekelenburg *et al*., 2004). The factors appear to be applicable for both antenatal care visit and institutional delivery, although they seem to be a smaller burden for attending antenatal care services. Gage (2007) showed from national survey data in Mali that distance to a health facility affected the use of delivery services, but not the use of antenatal care. This finding may well explain the discrepancy between utilization of antenatal care and institutional delivery. Therefore, it was interesting to try to understand from the perception of women in this study how physical barriers affect attendance.

Unavailability of maternal services especially in rural communities is said to adversely contribute to delay in accessing emergency services. Lack of proper

transport system, poor road infrastructure and lack of communication network in most of developing countries negatively impact on maternal health (Lawson *et al.*, 2003). While distance between health facilities in most part of Kenya is within than 5kms, that of northern region is said to be a real challenge so much so that community has to trek a long distance to access health care (Mureithi and Mwanthi, 2005). Mean distance to reach a static health facility in Northeastern is estimated to be over 10kms though most of the rural population travels longer distance to access health facility (Bousery *et al.*, 2009). This is compounded by poor road infrastructure, poor communication network, lack of referral system and inadequate community mobilization. The nomads are the most affected as they roam around looking for pasture and water for their animals and there are no proper mechanisms to meet their health care needs (Bousery *et al.*, 2009).

2.5 Socio-economic factors affecting utilization of hospital deliveries

Financial barriers have been described by several studies (Gage, 2007; Mills *et al*., 2007). However, some of these study findings cannot be generalized, since not all countries apply user fees to maternal health services. Nevertheless, indirect costs need to be considered. Despite free maternal health services in Kenya, resources are needed to reach and stay at a health facility. Transport should be considered a cost factor and hospitalization still bears costs, where relatives are required to look after the woman and will have to stay nearby.

Many studies associated high cost of medical care with reduced utilization of health services. This is exacerbated by high poverty rate in the developing world. Introduction of cost-sharing in Kenya in the late 1980s reduced significantly the use of many important services (Collins, *et al.*, 1996). Fee for services acts a powerful deterrent to maternal care, especially among the poor and greatly contribute low coverage (Lawson *et al.*, 2003, Witter *et al.*, 2003). In Northeastern, the issue of cost is very important because of high poverty index among the community (Boursery *et al.*, 2009). Cost for service is already said to be affecting the provision of health care especially in rural area in NEP (Ganga-Limando *et al.*, 2006). Apparently, interventions like Output based Approach

which was supported by UNICEF was expected to remove maternity charges from the client in northern region of Kenya. However, there could be other costs that are incurred by the clients - directly or indirectly- that also affects the utilization of maternity services.

Socio-economic factors may form another barrier to accessing maternal health services. A higher social status and wealth of the women have a positive impact on the use of maternal health services (Magadi *et al*., 2007; Mills *et al*., 2008). Urban residence is also positively related to maternal health services (Gage, 2007; Lindstrom and Muñoz-Franco, 2006; Magadi *et al*., 2007). The level of education of women shows a positive effect on utilization of maternal health services as well (Magadi *et al*., 2007; Mills *et al*., 2008). Only Gage (2007) did not find a significant effect on the use of institutional delivery, which could be confounded by a high influence of area-level factors like distance. Some studies have showed that women's autonomy is an important factor that influences accessibility (Gage, 2007; Mills *et al*., 2008; Simkhada *et al*., 2007; Stephenson *et al*., 2006). One study showed it even after controlling other socio-economic factors (Bloom *et al*., 2001). However, Stekelenburg *et al*. (2004) also concluded that women who make their own decision have a higher change to deliver at a health facility, but interestingly they did not find a correlation with the percentage of institutional deliveries, but rather linked it to factors like education and formal employment. Nevertheless, social pressure seems to have an influence on women's choice of delivery, as was also described in qualitative studies in Angola (Pettersson *et al*., 2004) and Uganda (Amooti-Kaguna and Nuwaha, 2000). Further exploration was required to investigate how and which social structures affect the decision of women on their choice of delivery.

2.6 Cultural and traditional factors

Religion and cultural beliefs have received less attention. Simkhada *et al*., (2008) found varying impacts of religion in different African countries, which seem to be context specific. Mills *et al*., (2008) only found that Muslims are more likely to use services compared to women with no religion. The role of traditional birth

attendants (TBAs) has received varying priority. Studies in Uganda and Zambia found that the community still regards them highly (Amooti-Kaguna and Nuwaha, 2000; Stekelenburg *et al*., 2005). Although these beliefs cannot be generalized, it would be interesting to explore the perceptions of women in Kenya as well, in particular now that the use of TBAs has been discouraged by government (MoH, 2005).

Women in northeastern province equally encounter considerable problems that stems from cultural practices which make them more vulnerable than men. They have less access to general health care including reproductive health, education - both formal and informal as well information (Ganga-Limando *et al.,* 2006). Essentially, this means few skills, little decision making- making power and no control over income (Bousery *et al.*, 2009). Some studies claim the Somali women are subordinate to men in virtually all aspect of their life to the extent that the health of the pregnant mother and unborn baby largely depend on the husband (Bousery *et al.*, 2009). All these affect their ability to make prompt decision to access health care including during emergency.

Religion plays an important role on the behavior of the individual. Some writers blamed religious belief and practices for restricting the role of women in social activities that pessimistically impact on their health (Lawson *et al.*, 2003). Most of the factors discussed above like low education, decision making and economic empowerment which all contribute the low status of women have also religious links. In northern region of Kenya this is very important as religion play a pivotal role in not only the health of the individual but many spheres of the individual life. This is considerably more so among the women in the Somali. Religion dictate the interaction between men who are majority health providers including the maternity services and the client –this case the women who are seeking the services

2.6.1 The role of traditional birth attendant

Many African countries previously encouraged the traditional birth attendant (TBA) to conduct deliveries after specialized training. However, though some

success has been reported on reduction of neonatal tetanus through cord care, they have no impact on reduction of maternal death and therefore cannot replace the midwives (Lawson *et al.,* 2003). TBA is embedded in many Africa culture and cannot easily be wished away especially in the rural set ups where the practices are popular. Studies in north eastern Kenya, most of mothers trust the traditional birth attendant over health facilities during deliveries, though the trend seems to be changing especially in the urban centers (Boursery *et al.,* 2009). However, there are strong indications that most mothers understood and embraced the importance of antenatal and immunization services (Bousery *et al.,* 2009). Some argue that the existing facilities were not catering the need of mothers as maternal service was unavailable because of many factors including the basic design of health facilities model (Ganga-Limando *et al.,* 2006).

2.7 Summary of literature review and research gaps

The general factors affecting use of health facilities by pregnant women are generally known. These include quality and cost of services offered by the facilities, scarcity of health facilities and distance to be covered to reach them, socio demographic and economic factors of the mothers, cultural barriers, and religious barriers among other factors. However, specific factors differ among communities. In this respect there is very little documented information about factors affecting hospital deliveries among the communities in the semi-arid parts of north eastern Kenya.

2.8 Conceptual Framework

Figure 2.1 details an analysis of the factors that affect utilization of delivery services. These include maternal centered factors such as culture, religion, beliefs and preference of TBA. The second category are health facility-based factors including quality of the services, fees charged, and distance to the facility.

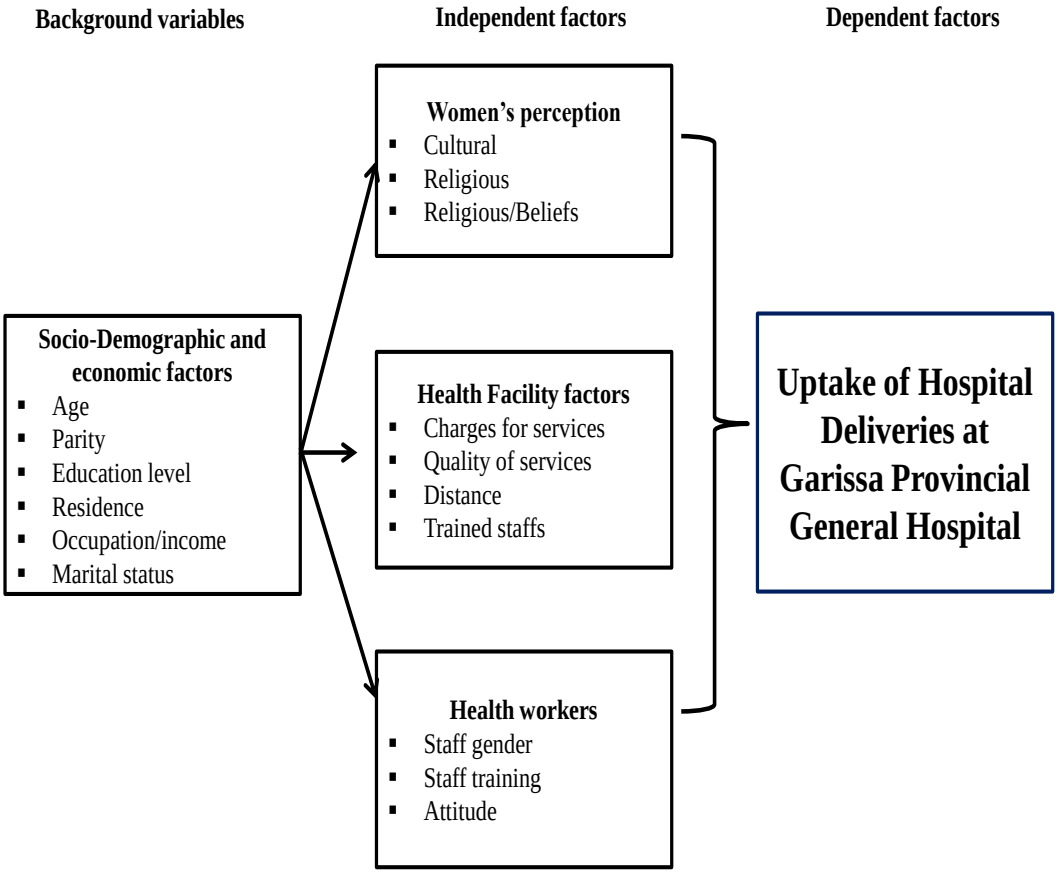

Figure 2.1: Factors affecting Utilization of Hospital deliveries

CHAPTER THREE
MATERIALS AND METHODS

3.1 Study area

The study was conducted at Garissa level 5 hospital situated in Garissa town, about 400kms north east of Nairobi. It has population projection of 141,889 (2009 census), but believed to be having much higher population. The county is administratively divided into 7 locations and 80 villages with a total of 23,629 households (MOP, 2009). Central Division has the highest population and is divided into 7 sub locations namely Township, Galbet, Waberi, Boul-Argy, Medina, Korakora and Iftin sub-location. The county is predominately inhabited by Somalis who profess the Islamic faith. Like any part of NEP, the district economic activities consist of nomadic pastoralism (32%) and semi-pastoralism (57.1%) (Bousery *et al.*, 2009). The Kenya economic survey (2007) estimates more than 70% of Garissa residences are living below the poverty line. The hospital is the only level 5 Hospital in the northern region of Kenya. It is a referral centre for the 3 counties of northern region plus some neighboring counties. It also acts as teaching hospital for various medical cadres like nurses, medical doctors and clinical officers. In recent years the hospital expanded tremendously thanks to supports from many partners especially DANIDA which constructed many new structures and renovated many more. The government also boosted the staffing level particularly specialist in the medical field. The maternity ward benefitted immensely from DANIDA project as it got a facelift. Other partners like UNICEF also assisted in many ways including output-based approach fund which is meant to make delivery service free. Though still there is shortage of staff in the hospital, the maternity is far much better than what it was few years back. A gynecologist heads the ward now which was unimaginable few years back.

3.2 Study Design

This was descriptive cross-sectional study using both qualitative and quantitative methods. .

3.3 Study population

The study targeted women of reproductive age group 15-49 years. These included all pregnant women and non-pregnant women.

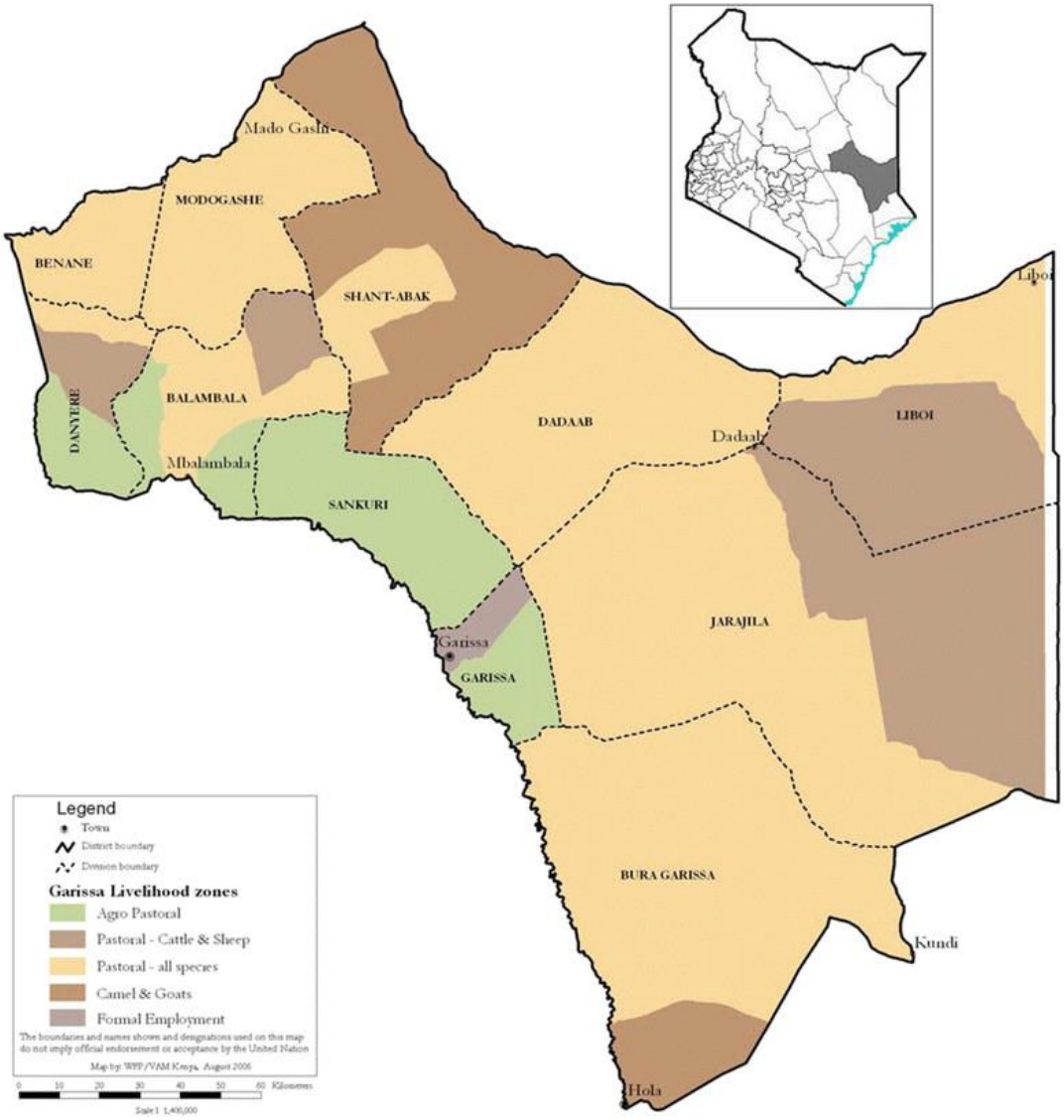

Figure 3.1: The map showing the location of study site and its environment

3.4 Sampling

3.4.1 Sample size determination

The following formula was used for sample size determination:

$$n = \left(\frac{z}{m}\right)^2 p(1-p)$$

Where,

- z is the critical value based on the desired confidence level (e.g., z = 1.96 for 95% confidence level);
- m is the margin of error or precision of the estimate in this case m=0.05.
- p is the estimated value of the proportion of women who delivered a PGH (p = 0.14 referring to a prevalence of 14%) (GCRHA, 2009).

Substituting

n = {1.96 X 1.96 X 0.41(1-0.41)} /(0.05 X 0.05)

n = 372.

Adding 10% to cover for non-response rates and missing data makes a total of 410 women. This was distributed equally among 205 pregnant women attending maternity unit and 205 non-pregnant women who had given birth before attending other services such as family planning.

3.4.2 Sampling procedure

All pregnant women attending the maternity clinic in who consented to the study were consecutively enrolled into the study. This constituted 70% of the sample size (representing the ANC coverage at PGH in 2009). Other women who went for other services, including immunization services and family planning clinics and had previously used maternity services in at GCRH and those who were currently in the maternity were also enrolled. Those other women constituted

30% of the sample, with 15% being those who had gone for immunization services and 15% those who were in the maternity ward. In each category, consecutive sampling was applied till the required number of respondents were achieved.

3.4.3 Inclusion criteria

The study included women who consented to participate in the study and were of childbearing age (15-49 years)

1. Had delivered in the previous two years
2. Had lived in the study area for at least two years
3. If not pregnant, had previously used maternity services at the GCRH, and were currently attending the immunization or FP clinics

3.5 Data collection

3.5.2 Structured interviews using questionnaires

Data were collected using structured face to face questionnaires (Appendix 1) which were pre-tested among a few participants. This ensured validity and reliability of data collection tools. Both open and close ended structured questionnaire were administered to the individual women attending the clinic. Those in maternity were also subjected to a similar questionnaire through an exit interview after the participant had been discharged from the ward. This study was explained to the nurse and medical in charge who then explained to women meeting the inclusion criteria for enrolment.

3.5.2 Focus group discussions

In the ANC clinic, some women were purposively chosen for Focused Group Discussion on selected days so as they did not have to participate the in the study twice. A convenient number of 2 FGDs consisting of 12 participants were carried out using questionnaire guide (Appendix 2). These discussions were audio taped as well as handwritten notes taken. The FGDs were stopped depending on

saturation point of the issues being probed. The groups in the FGDs were selected to reflect the compositions including; the youths aged 15 – 25 years; adults aged 26 – 36 years and the elders 37 – 49 years. The age grouping was done to eliminate fear of participation by others not within the age group (culturally, the younger women in Garissa do not give information when elder women are present) and to be able to compare the response across different age groups.

3.6 Data Management

All subjects were assigned a subject identification number (SID). All data entered into the study databases were de-identified and only associated with a SID in password protected files. A double entry system for the data was maintained so as to capture all the collected data. All the electronic data and the paper research records were kept in a password protected folder and in locked filing cabinet respectively located in a restricted-access room at the GCRH.

3.7 Statistical Analysis

Data were presented in frequencies and percentages using tables and charts. Chi-square was used to test for significance among qualitative data such as distribution of proportion of women utilizing hospital delivery services. To determine factors influencing Utilization of hospital delivery services; the overall proportion of women utilizing hospital delivery services were determined for the entire group of women. In bivariate analyses, odds ratios (OR) and 95% confidence intervals (CI) for the association between utilization of hospital delivery services and socio-cultural, demographic, economic or behavioral characteristics were calculated using Poisson regression. In multivariate analyses, a manual backward elimination approach was utilized to reach the most parsimonious model, including factors that were independently associated with Utilization of hospital delivery services at the significance level of $p = 0.05$. All statistical analyses were performed using Stata version 11 (StataCorp. LP, College Station, USA).

3.8 Ethical considerations

The research protocol was presented for scientific and ethical approvals by the Scientific Steering Committee and the Ethical Review Committee of Kenya Medical Research Institute (KEMRI) prior to commencement of field activities (KEMRI\SCC\No. 2661 Ref: KEMRI/RES/7/3/1) and approved on February 28, 2014 (Appendix 5). Written informed consent was obtained from each participant. Confidentiality was maintained by assigning all participants with a unique identification number and all paper research records stored in a locked cabinet stationed in a secured room only accessible to the principal investigator. This research adhered to the STROBE guidelines for observational studies as outlined at: http://www.strobe-statement.org.

CHAPTER FOUR
RESULTS

4.1 Socio demographic characteristics

In this study, all the 338 recruited participants responded to the structured questionnaire (100% response rate). As shown in Table 4.1, the mean (±SD) age of the participants was 27.03 ± 4.66 years ranging from 18 to 48. The majority (71.6%) of the participants were aged between 21 to 30 years, 32.8% had tertiary level of education, while 86.1% were married. Further, 54.4% of the participants were unemployed while 62.4% attended GCRH for ANC services. More than half (56.2%) were currently pregnant with 60.9% having had between 1 to 3 live births.

There were forty (40) participants (11.8%) who did not have formal education while those who had only studied up to primary level were 82 (24.3%) and those with some secondary education were 105 (31.1%).

The marital status as a demographic measure was divided into four categories whereby one was either single, married, divorced or widowed. Divorced and/or widowed participants were the least represented in this respect with their number only totaling to 10, which was a paltry 3% of the entire population. Those who were single accounted for 10.9% of the entire population. The singles were 37 in number while those who were married were 291 in number.

Only two religions were represented among the respondents; these were Christians and Muslims, and the majority were Christians (n=253, 74.9%), while Muslims accounted for 25.2% of the population (n=85).

Table 4.1: Demographic characteristics of study population

Variables	Frequency	Percentage
Age		
Mean (± SD)	***27.03***	***(± 4.66)***
Median (IQR)	***27***	***(24-30)***
Range	***30***	***(18-48)***
<20	25	7.4
21 - 30	242	71.6
31 - 40	68	20.1
41 - 50	3	0.9
Education level		
Primary	82	24.3
Secondary	105	31.1
Tertiary	111	32.8
Non-Formal	40	11.8
Marrital status		
Single	37	10.9
Married	291	86.1
Divorced/Widow	10	3
Religion		
Christian	253	74.9
Muslim	85	25.2
Occupation		
Employed	91	26.9
Self employed	63	18.6
Unemployed	184	54.4

4.1.1 Reasons for attending the facility

Among the reasons for attending facility were antenatal care, delivery, prevention of mother to child transmission, family planning and other treatments. The highest number of patients were those seeking antenatal care (n=211, 62.4%) while the lowest number was that of patients seeking PMTCT care (n=14, 4.4%) those women who were seeking family planning services were slightly more than those seeking other forms of treatment. Only 36 women were seeking other treatments and this accounted for 10.7% of the entire population while those who

visited the hospital for family planning services were 49 in number and they represented 14.5% of the population under study (Figure 4.1).

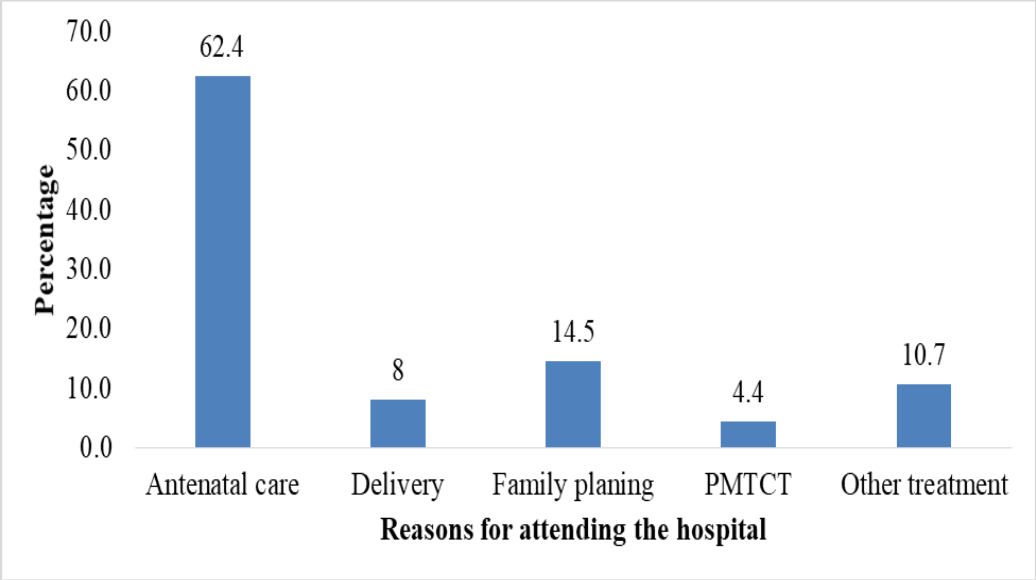

Figure 4.1: Distribution in the reasons for attending the hospital

4.1.2 Participants parity

The mean number of live births was 2.71 with a standard deviation of ±1.91. The median number of births per woman was 2 live births while there was a range of between zero and seven live births. Most of the participants (n=206, 60.9%) had between one and three live births while there was a considerable number of women who had more than four live births (n=92, 27.2%). Other women had never given birth at all, and while they were 40 in number, they represented 11.8% of the population (Figure 4.2).

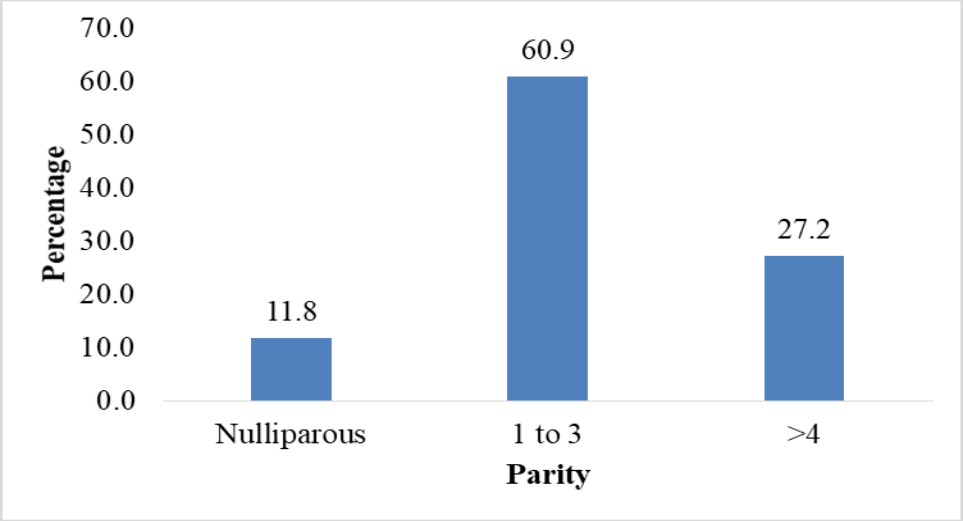

Figure 4.2: Distribution in the parity status among participants

4.1.3 Participants current pregnancy status

Women who were currently pregnant were 190 in number while those who were not pregnant at the time of the study were 148. The latter lot represented 43.8% of the entire population (Figure 4.3).

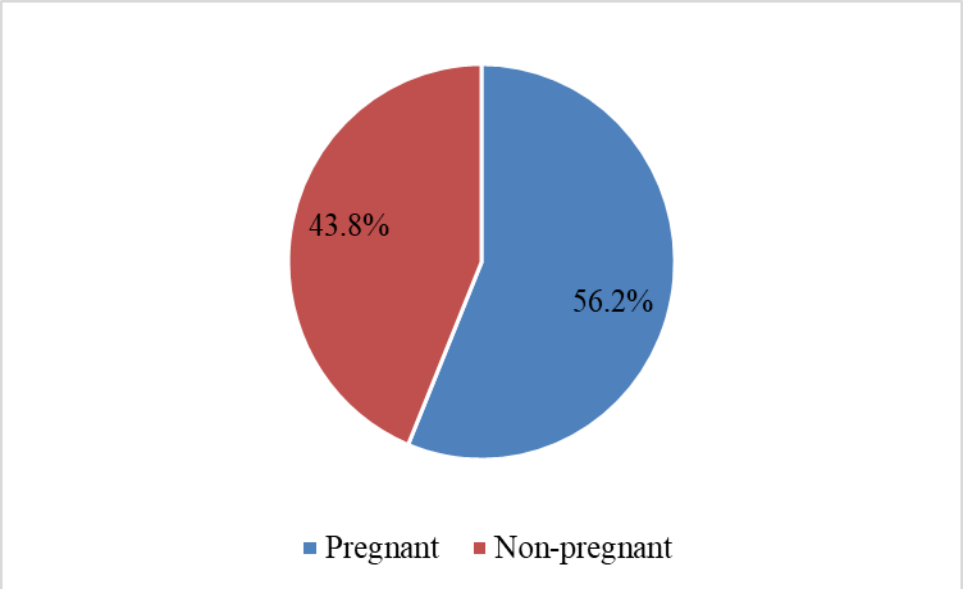

Figure 4.3: Participants' current pregnancy status

4.2 Participant's attributes related to hospital delivery

As summarized in Table 4.2, those who were advised by other people to have their delivery done at the hospital were 292 (86.4%) in number while those whose use of the facility was not led by such advice were 46 in number, representing 13.6% of the study population.

There were 40 participants (11.8%) who felt that their religious beliefs would cause them not to use the midwifery services offered at GCRH while 298 (88.2%) participants felt otherwise.

Majority of the decisions to deliver at GCRH were self-driven. There were 165 (48.8%) women who autonomously decided to deliver at GCRH while those whose decisions to do the same rested with their spouses were 141 in number, representing 41.7% of the study population. There were 17 participants (5%) whose parents made the decision for them to deliver at GCRH and another 15 who had the decision made by friends or relatives. The latter group represented 4.4% of the study population.

Majority 88.2% stated that their cultural beliefs could not deter them from hospital delivery. There were 87% of the women who stated that they would advise other women to deliver their babies at the GCRH.

Majority of the participants (n=238, 70.4%) had no preference for either a girl child or a boy child while 100 participants had such a preference and these represented 29.6% of the population. Most of the participants (n=299, 88.5%) claimed that the gender of their children would not hinder them from seeking services from the GCRH while the minority (n=39, 11.5%) claimed that the gender of their children would prove to be a hindrance to their attending the GCRH.

Table 4.2: Participant's attributes related to hospital delivery

Variables	Sample size	
	No	%
Advice on GPGH delivery		
Yes	292	86.4
No	46	13.6
Belief refrain GPGH delivery		
Yes	40	11.8
No	298	88.2
GPGH delivery decision maker		
Self	165	48.8
Spouse	141	41.7
Parents	17	5
Others (Friends/relatives)	15	4.4
Advice others to deliver at GPGH		
Yes	294	87
No	44	13
Child Gender preference		
Yes	100	29.6
No	238	70.4
Gender hindrance		
Yes	39	11.5
No	299	88.5

4.3 Economic characteristics related to hospital delivery

As shown in Table 4.3, there were 223 participants who came from a distance within 2km away from the hospital while 94 participants came from a distance exceeding 2.1 kilometers away from the facility. Those who came from nearby represented 66% of the participant population while those who were farther placed represented 27.8% of the same population.

Two hundred and eighteen (218) participants had a ward much nearer to them than the GCRH and these represented 64.5% of the population while 35.5% of this population (n=120) had no such facility closer to them than the GCRH.

Of the participants questioned 68.6% (n=232) claimed that they might have opted to use the nearer maternities while 31.4% (n=106) claimed that even with other maternities being nearer than the GCRH they would still consider going to GCRH.

The majority of participants (n=276) used vehicles to reach the facility while the minority (n=26) used other means apart from walking. Those who walked to the facility were 36 in number.

The number of participants who claimed to have received free services from the GCRH was 295 while those who incurred some costs were 12.7% of the population (n=43). Those whose delivery charges were settled by the government numbered 208 (61.5%) while the remainder (n=130, 38.5%) had their bills settled by family members.

Table 4.3: Economic variables related to hospital delivery

Variable	Frequency	Percentage
Distance to GPGH		
0-2 Km	223	66
>2.1Km	94	27.8
Other maternity ward near by		
Yes	218	64.5
No	120	35.5
Would deliver in the nearest maternity		
Yes	232	68.6
No	106	31.4
Mode of transport to GPGH		
Walking	36	10.7
Vehicle	276	81.7
Other mode	26	7.7
Delivery charges		
Free	295	87.3
Some charges	43	12.7
Settlement of delivery charges		
Government	208	61.5
Family	130	38.5

4.4 Participants attributes regarding health facility and health worker characteristics

Table 4.4 summarizes the participants' attributes regarding the health facility and health workers. When questioned about the general attitude of the staff while providing services, majority of the participants (n=132, 39.1%) claimed that the attitude was excellent while a minority (n=1, 0.3%) claimed that the attitude of the healthcare providers was fair. Those who claimed that the attitude was very poor numbered twice those who said the attitude was fair and these represented 0.6% of the participant population. There was also a relatively large number of participants (n=118, 34.9%) who saw the attitude of the staff during delivery to

be very good but those who saw their attitudes to be good (n=42, 12.4%) and those who saw it to be poor (n=18, 5,3%) were considerably much fewer. There was also a low number of participants (n=25, 7.4%) who never gave their views concerning the attitude of the delivery staff.

The said attitude would affect the decision by a majority of the participants (n=243, 71.9%) to consider visiting the GCRH in the future while those who would not be affected by these attitudes numbered only 95 (28.1%).

Table 4.4: Participants attributes regarding health facility and health worker characteristics

Variable	Frequency	Percentage
General staff attitude during delivery		
Excellent	132	39.1
Very good	118	34.9
Good	42	12.4
Fair	1	0.3
Poor	18	5.3
Very poor	2	0.6
Not applicable	25	7.4
Attitude affecting future GPGH utilization		
Yes	243	71.9
No	95	28.1

4.4.1 Duration since previous hospital delivery

Most of the participants 198(58.6%) had given birth at GCRH in the previous 1 to 2 years. There were 55 (16.3%) participants who had previously given birth at GCRH in the last 3 or more years. There were 80(25.1%) women who had never given birth at all at the GCRH (Figure 4.4).

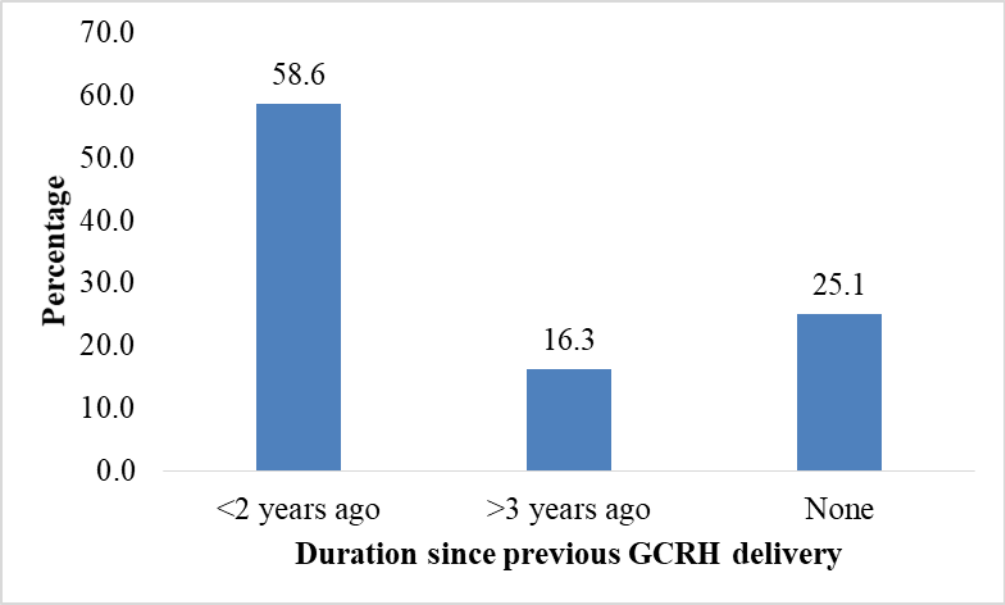

Figure 4.4: Distribution in the duration since previous GCRH delivery among participants

4.4.2 Rating of delivery services

Most of those who had used the facility rated the services as excellent (n=106, 31.4%). Whereas 99 participants (29.3%) gave no rating of their experiences within the facility, those who felt that the services were very good were 89 in number representing 26.3% of the study population. About 1.2% of the participants felt that the services offered at GCRH were poor and these numbered only 4, whereas those who felt that the services deserved a 'good' rating were 40 in number and represented 11.8% of the study population (Figure 4.5).

Figure 4.5: Distribution in the rating of delivery services

4.4.3 Aspect of hospital maternity service liked by participants

The majority of the participants 140 (41.4%) when asked about the aspects of GCRH maternity service they liked, they stated the fact that there was sufficiency of medical suppl. This was followed by 13.3% of the study population who felt that they liked the good services offered at GCRH while 5.5% felt they liked the enforcement of privacy within the hospital. The minority (2.4%) felt that there was short service delivery time while those who liked the good attitude of the staff, the facility cleanliness and social support offered within the facility represented 8.3%, 7.7% and 5.6% of the study population respectively. However, 15.4% of this population did not indicate that they liked anything in the facility (Figure 4.6).

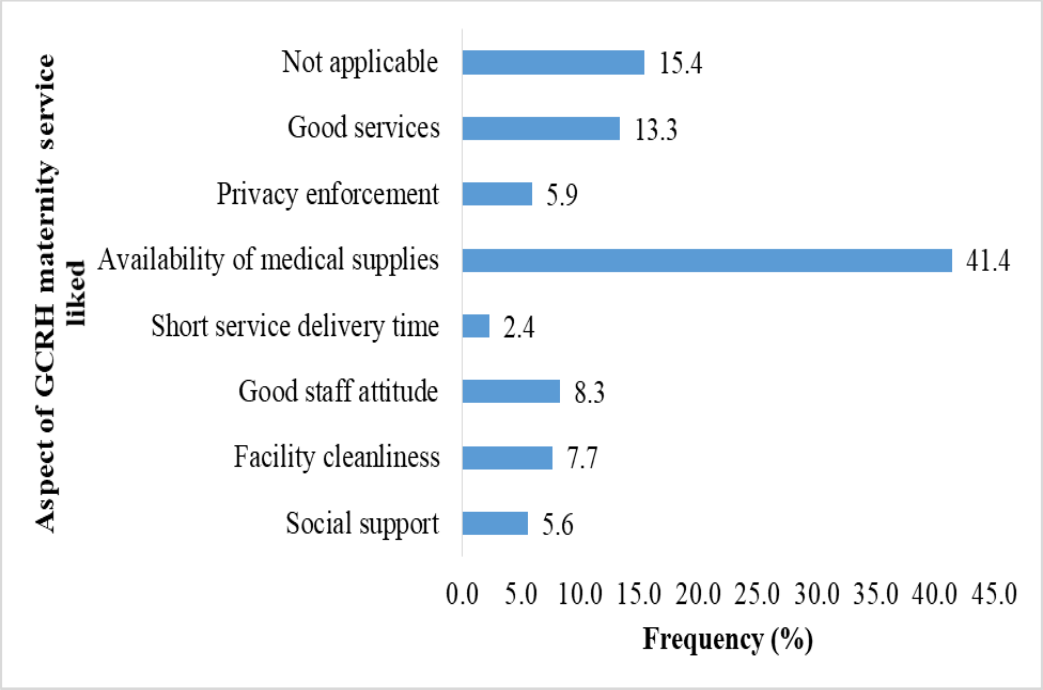

Figure 4.6: The distribution of the Aspect of GCRH maternity services that were liked by the women participants

4.4.4 Aspect of hospital maternity service disliked by participants

Conversely, 19.8% of the same population indicated that they did not dislike anything about the facility while a majority (37.3%) disliked the lack of privacy shown in the facility. A minority (3.6%) felt that the place was unclean and disliked that fact while those who disliked the hospital for poor general services were 6.2%. There was equivocation between those who disliked the poor attitude among hospital staff and those who felt that the service delivery took too long. These both represented 8.6% of the population while those who disliked the hospital for lack of medical supplies and lack of social support represented 9.5% and 6.5% of the study population respectively (Figure 4.7).

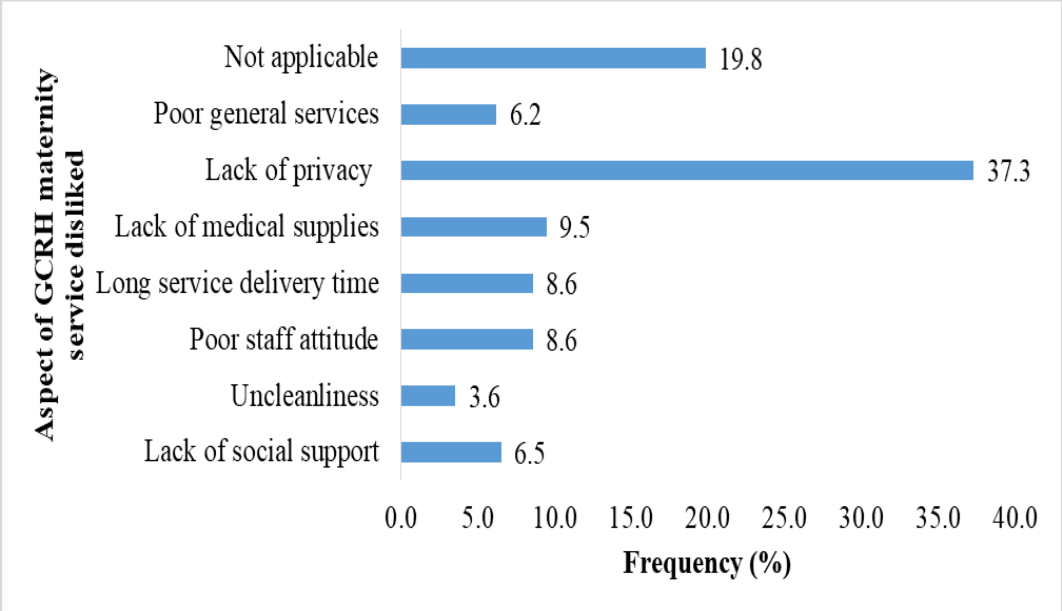

Figure 4.7: The distribution of the Aspect of GCRH maternity services that were disliked by the women participants

4.5 Utilization of hospital delivery services

From the survey, a total of 258 out of 338 (76.3%) participants reported having had previous delivery assisted by skilled health practitioner at the GCRH.

4.6 Factors associated with utilization of facility delivery services

4.6.1 Socio-demographic factors associated with utilization of delivery services

Table 4.5 summarizes the socio-demographic factors associated with utilization of GCRH delivery services. In the bivariate analysis, participants who were of Muslim religion (OR 1.9, 95% CI 1.3–2.7) were more likely to deliver their babies at the GCRH. On the other hand, women who were nulliparous (OR 2.3, 95% CI 1.6 - 6.1) were less likely to utilize GCRH delivery services compared to women who had given birth 4 or more times.

In multivariate analysis (Table 4.5), after adjusting for age, education level, marital status, religion, occupation, current pregnancy status and parity, only nulliparous women (OR 0.2, 95% CI 0.09–0.6) remained significantly associated with delivery at the GCRH.

Table 4.5: Socio-demographic factors associated with the utilization of GCRH delivery services

Variables	Sample size	Hospital delivery		Bivariate	Multivariate
		No	%	OR (95% CI)	OR (95% CI)
Age					
≤ 20	25	14	56	0.6 (0.2 - 1.9)	0.8(0.2 - 3.1)
21 - 30	242	178	73.6	0.7(0.2 - 2.3)	0.8(0.3 - 2.6)
31 - 40	68	63	92.6	0.9(0.3 - 2.9)	0.9(0.3 - 3.1)
41 - 50	3	3	100	Referent	Referent
Education level					
Primary	82	72	87.8	1.2(0.8 - 1.7)	1.1(0.7 - 1.7)
Secondary	105	83	79	1.1(0.7 - 1.5)	1.1(0.7 - 1.8)
Tertiary	111	72	64.9	0.8(0.5 - 1.3)	0.9(0.6 - 1.6)
Non-Formal	40	31	77.5	Referent	Referent
Marrital status					
Single	37	15	40.5	0.6(0.2 - 1.4)	0.7(0.3 - 1.8)
Married	291	236	81.1	1.2(0.5 - 2.6)	0.8(0.3 - 1.7)
Divorced/Widow	10	7	70	Referent	Referent
Religion					
Muslim	253	219	86.6	**1.9(1.3 - 2.7)**	1.4(0.9 - 2.1)
Christian	85	39	45.9	Referent	Referent
Occupation					
Employed	91	74	81.3	1.1(0.8 - 1.4)	1.1(0.8 - 2.4)
Self employed	63	44	69.8	0.9(0.7 - 1.3)	0.9(0.7 - 1.4)
Unemployed	184	140	76.1	Referent	Referent
Currently pregnant					
Yes	190	159	83.7	1.2(0.9 - 1.5)	1.1(0.7 - 1.4)
No	148	99	66.9	Referent	Referent
Parity					
Nulliparous	40	5	12.5	**0.2(0.06 - 0.4)**	**0.2(0.09 - 0.6)**
1 to 3	206	168	81.6	0.9(0.7 - 1.2)	0.9(0.7 - 1.3)
≥ 4	92	85	92.4	Referent	Referent

No - Number; % - Percentage; OR - Odds ratio; CI - confidence interval

4.6.2 The socio-cultural factors associated with utilization of GCRH delivery services

Table 4.6 summarizes the socio-cultural factors associated with the Utilization of GCRH delivery services. Both in bivariate and multivariate analyses, none of the socio-cultural attributes of participants including who advice on place of delivery, beliefs, delivery place decision, offer advice to others, child gender preference and health worker gender preference were found associated with Utilization of GCRH delivery services.

Table 4.6: Socio-cultural factors associated with the utilization of GCRH delivery services

Variables	Sample size	Hospital delivery		Bivariate	Multivariate
		No	%	OR (95% CI)	OR (95% CI)
Advice on GCRH delivery					
Yes	292	227	77.7	1.2(0.8 - 1.7)	1.1(0.7 - 1.6)
No	46	31	67.4	Referent	Referent
Belief refrain GCRH delivery					
Yes	40	35	87.5	1.2(0.8 - 1.7)	1.1(0.7 - 1.6)
No	298	223	74.8	Referent	Referent
GCRH delivery decision maker					
Self	165	127	77	1.9(0.8 - 4.4)	0.9(0.4 - 2.4)
Spouse	141	110	78	1.9(0.9 - 4.4)	1.1(0.4 - 2.5)
Parents	17	15	88.2	2.2(0.9 - 5.7)	0.9(0.3 - 2.9)
Others (Friends/relatives)	15	6	40	Referent	Referent
Advice others to deliver at GCRH					
Yes	294	239	81.3	1.2(0.8 - 1.7)	1.1(0.7 - 1.6)
No	44	19	43.2	Referent	Referent
Child Gender preference					
Yes	100	71	71	0.9(0.7 - 1.2)	0.9(0.6 - 1.2)
No	238	187	78.6	Referent	Referent
Gender hindrance					
Yes	39	32	82.1	1.1(0.7 - 1.6)	1.2(0.8 - 1.8)
No	299	226	75.6	Referent	Referent

No - Number; % - Percentage; OR - Odds ratio; CI - confidence interval

4.6.3 Economic factors associated with utilization of delivery services

Table 4.7 summarizes the economic factors associated with the utilization of GCRH delivery services. Both in bivariate and multivariate analyses, none of the economic factors such distance to the hospital, availability of other hospital in the neighborhood, mode of transportation, the cost of delivery and who settle the delivery charges were found associated with utilization of GCRH delivery services.

Table 4.7: Economic factors associated with the utilization of GCRH delivery services

Variables	Sample size	Hospital delivery		Bivariate OR (95% CI)	Multivariate OR (95% CI)
		No	%		
Distance to GCRH					
0-2 Km	223	167	74.9	1.6(0.8 - 2.9)	1.6(0.6 - 4.2)
≥ 2.1Km	94	81	86.2	1.8(0.9 - 3.5)	1.8(0.6 - 4.9)
Not applicable	21	10	47.6	Referent	Referent
Other maternity ward available					
Yes	218	175	80.3	1.2(0.9 - 1.5)	1.1(0.8 - 1.4)
No	120	83	69.2	Referent	Referent
Would deliver in the nearest maternity					
Yes	232	188	81	1.2(0.9 - 1.6)	1.2(0.8 - 1.5)
No	106	70	66	Referent	Referent
Mode of transport to GCRH					
Walking	36	31	86.1	1.3(0.8 - 2.3)	0.8(0.4 - 1.8)
Vihecle	276	212	76.8	1.4(0.8 - 2.8)	0.9(0.4 - 2.3)
Other mode	26	15	57.7	Referent	Referent
Delivery charges					
Free	295	231	78.3	1.2(0.8 - 1.9)	0.9(0.6 - 1.6)
Some charges	43	27	62.8	Referent	Referent
Settlement of delivery charges					
Government	208	165	79.3	1.1(0.9 - 1.4)	1.1(0.8 - 1.3)
Family	130	93	71.5	Referent	Referent

No - Number; % - Percentage; OR - Odds ratio; CI - confidence interval

4.6.4 Health facility and health workers' factors associated with utilization of delivery services

Table 4.8, summarizes the hospital related factors associated with the utilization of delivery services. In bivariate analysis, participants who were more likely to deliver their babies at the were those who had pervious delivered at the hospital within the last two (OR 14.1, 95% CI 6.2–31.8) or three (OR 14.1, 95% CI 6.1–32.9) years; those who rated the delivery services as either excellent (OR 4.2, 95% CI 2.7–6.7), very good (OR 4.3, 95% CI 2.7–6.7), good (OR 4.1, 95% CI 2.4–6.9) or poor (OR 4.3, 95% CI 1.5 - 12). Further, participants who appreciated health facility that were clean (OR 1.8, 95% CI 1.1–3.1) and those that had sufficient medical supplies (OR 1.7, 95% CI 1.2–2.8); who visited the hospital for antenatal care (OR 1.8, 95% CI 1.3 - 3.1) or delivery (OR 1.9, 95% CI 1.1–3.7) service were more likely to deliver their babies at the hospital.

In multivariate analysis (Table 4.8), only those participants who had delivered at the hospital within the previous two (OR 12.8, 95% CI 5.1–32.4) or three (OR 13.1, 95% CI 4.9–34.4) years or who appreciated health facility that were clean (OR 1.9, 95% CI 1.1–3.7) and those that had sufficient medical supplies (OR 1.8, 95% CI 1.1–3.3), remained associated with delivery at the hospital.

Table 4.8: Facility based factors associated with the utilization of delivery services

Maternal variables	Sample size	Hospital delivery No	%	Bivariate OR (95% CI)	Multivariate OR (95% CI)
Time for previous GCRH delivery					
≤ 2 years ago	198	197	99.5	**14.1(6.2 - 31.8)**	**12.8(5.1 - 32.4)**
≥ 3 years ago	55	55	100	**14(6.1 - 32.9)**	**13.1(4.9 - 34.4)**
None	85	6	7.1	Referent	Referent
Rating of delivery services at GCRH					
Excellent	106	105	99.1	**4.2(2.7 - 6.7)**	1.2(0.7 - 1.9)
Very good	89	88	98.9	**4.3(2.7 - 6.7)**	1.1(0.6 - 1.9)
Good	40	38	95	**4.1(2.4 - 6.9)**	1.1(0.6 - 2.1)
Poor	4	4	100	**4.3(1.5 - 12)**	1.1(0.3 - 3.5)
Not applicable	99	23	23.2	Referent	Referent
Aspect of GCRH maternity service liked					
Social support	19	15	78.9	1.6(0.9 - 3.1)	1.6(0.8 - 3.2)
Facility cleanliness	26	22	84.6	**1.8(1.1 -3.1)**	**1.9(1.1 - 3.7)**
Good staff attitude	28	19	67.9	1.4(0.8 - 2.6)	1.4(0.7 - 2.8)
Short service delivery time	8	7	87.5	1.8(0.8 - 4.2)	1.6(0.6 - 3.9)
Availability of medical supplies	140	121	86.4	**1.7(1.2 - 2.8)**	**1.8(1.1 - 3.3)**
Privacy enforcement	20	17	85	1.9(0.9 - 0.95)	1.5(0.8 - 3.1)
Good services	45	32	71.1	1.5(0.9 - 2.5)	1.4(0.8 - 2.4)
Not applicable	52	25	48.1	Referent	Referent
Aspect of GPGH maternity service liked					
Social support	19	15	78.9	1.6(0.9 - 3.1)	1.6(0.8 - 3.2)
Facility cleanliness	26	22	84.6	**1.8(1.1 -3.1)**	**1.9(1.1 - 3.7)**
Good staff attitude	28	19	67.9	1.4(0.8 - 2.6)	1.4(0.7 - 2.8)
Short service delivery time	8	7	87.5	1.8(0.8 - 4.2)	1.6(0.6 - 3.9)
Availability of medical supplies	140	121	86.4	**1.7(1.2 - 2.8)**	**1.8(1.1 - 3.3)**
Privacy enforcement	20	17	85	**1.9(0.9 - 0.95)**	1.5(0.8 - 3.1)
Good services	45	32	71.1	1.5(0.9 - 2.5)	1.4(0.8 - 2.4)
Not applicable	52	25	48.1	Referent	Referent
Attitude affecting future GPGH utilization					
Yes	243	193	79.4	1.2(0.9 - 1.5)	1.2(0.6 - 2.4)
No	95	65	30	Referent	Referent
Reasons for attending GCRH					
Antenatal care	211	179	84.8	**1.8(1.3 - 3.1)**	1.3(0.7 - 2.3)
Delivery	27	25	92.6	**1.9(1.1 - 3.7)**	1.4(0.7 - 2.9)
Family planing	49	32	65.3	1.3(0.7 - 2.5)	1.3(0.7 - 2.4)
PMTCT	15	8	53.3	0.9(0.4 - 2.5)	1.2(0.4 - 3.1)
Other treatment	36	14	38.9	Referent	Referent

No - Number; % - Percentage; OR - Odds ratio; CI - confidence interval

4.7 Study outcomes based on qualitative methods

The qualitative data from FGDs and KIIs were grouped into different themes which included

4.7.1 Socio-demographic factors

The qualitative analysis from FGDs on the socio-demographic factors affecting hospital delivery utilization showed age, education levels, marital status, household headship as among the key drivers for uptake.

Example in FGD -7 one participant stated

"if you are married young…. many times, you have no control on issues surrounding family size, place of delivery and family spacing…;"

One FGD-2 participant while responding to religion and hospital delivery had this to say *"Islam forbids a couple from choosing to practice family planning and they believe if you attend ANC might be forced to use these methods hence one might not be allowed to delivery at the hospital".*

Another FGD participant said *"the place one gives birth is also determined by your previous births and how many children one has".*

One FDG-4 participant said" *information and having attended some schooling greatly influences the choice of place of birth*".

4.7.2 Socio-cultural factors

Various views were gathered regarding impact of socio-cultural issues on utilization of hospital delivery. Some of the issues pointed out that influences' hospital delivery included, cultural belief, household headship, household decision making, house hold and community decision making process. An FGD participant confirmed;

"That most households headed by grandparents who delivered children at home, often the woman is forced to do the same'

The second FGD participant had this to say *"information including family planning and place of delivery are discussed in non-formal settings including Madrassa and in the family units. So, depending on the decision makers, advisors' that will ultimately determine the place of delivery".*

Third FGD participant said;

"Every woman should deliver to the hospital or even attended ANC only after talking to their husband…should emergency occurs he will be required to stand up and take responsibility".

Fourth FGD participants had this to say;

"Religious beliefs and cultural norms work together to affect discussion let alone utilization of ANC, family planning and place of choice for delivery".

4.7.3 Economics factors influencing hospital delivery uptake

Mixed reactions were presented regarding finances and cost of hospital delivery versus attended by traditional birth attendance. Distance, charges, availability were some of the issues raised

One FGD participant;

"I cannot give birth at the hospital which is far yet I can get the same services here in the village".

The second FGD participant said;

"The cost of transportation, the distance to the hospital is a very big concern here for us"

4.7.4 Health facility factors

Mixed reactions were presented regarding health facility related factors these were influenced by previous experiences, rating of services, reasons for utilization, gender of the staff, attitude and perception of the staff.

One FGD participate stated;

"My initial experience by one of the male staff was not very good…. He was very unfriendly to me and I cannot go back there again".

But a participant in FGD noted;

"Majority of the doctors are males and I don't feel comfortable being attended to by male doctors ".

Another participant in FGD noted;

"Majority of the doctors are not very knowledgeable as our TBA and so I cannot go them".

CHAPTER FIVE
DISCUSSIONS, CONCLUSIONS AND RECOMMENDATIONS

5.1 Discussion

5.1.1 Proportion of women delivering at the hospital

The health status of mothers and children points to the overall economic health of a country (United Nations, 2010). Maternal health is inseparably linked with the survival of newborns. For every woman who dies, another 30 suffer long-lasting injuries and illnesses such as obstetric fistula (UNDP, WHO, UNFPA, and World Bank, 2006). Provision of a continuum of care during pregnancy, labor and delivery, and the postnatal period results in reduced maternal and neonatal morbidity and mortality. Kenya has made progress towards reducing maternal mortality, though insufficient to achieve SDG 5 (KNBS and ICF, 2010). Nearly all maternal deaths can be prevented if mothers could deliver at a health facility under care of skilled birth attendant (NCPDA, 2010). The presence of skilled birth attendant during childbirth in a hygienic environment with necessary skills and equipment to recognize and manage any emerging complications reduces the likelihood of birth complications, infections or death of either the baby or mother. According to the 2008–09 KNBS (KNBS, 2010), more mothers died during childbirth in 2008–09 compared to 2003 (CBS, MOH and ORC Macro, 2004); 488 deaths in 2008–09 vs. 412 deaths per 100,000 live births in 2003. There was not much change on the proportion of women delivering in health facility under watch of a skilled birth attendant from 2003 (42 %) to 2008 (44 %), however in 2014, 62 % of deliveries were attended by skilled birth attendant in a health facility (KNHS, 2015). In Kenya, the 2014 KNBS showed that although, 96% and 74.6% of pregnant women country-wide and Garissa County respectively, had at least one ANC visit during pregnancy, about 37% and 70.8% of deliveries country-wide, and Garissa County, respectively, took place outside health facilities (KNBS, 2014).

The Kenya government has rolled up many interventions and policies to ensure all childbirth is in a health facility and attended by skilled birth attendants. These

policies and interventions include making child delivery in public health facility free since 2013, putting up of a maternal shelter (commonly referred to as 'waiting homes') that is currently underutilized, Output Based Approach (OBA) and the 'Beyond zero campaign' spearheaded by the first lady to stop preventable maternal deaths by providing fully equipped mobile clinic. OBA projects have been running in Kenya since 2006 targeting subsidies for safe motherhood in many parts of the country (Moindi *et al*., 2016). In addition, the County government and the national government via constituency development funds have built new health facilities (Moindi *et al*., 2016). The utilization of antenatal care services (ANC) has been appreciable in the Garissa county, but seems like mothers opt to deliver at home after attending the ANC and later have their babies receive immunizations in the health facilities (KNBS, 2014). Despite these deliberate interventions by the government, it was still not clear why the proportion of women who deliver in GCRH. This study was therefore among the very first to investigate the factors affecting the utilization of hospital deliveries among women of reproductive age attending the GCRH in Garissa County; an arid, marginalized and insecure region in the North Eastern Kenya. The study was conducted two years post the 2013 devolution of political power and economic resources from the central government to the devolved county governments.

Contrary to the previous reports of (36.7%) in 2014 (KNBS, 2014) of hospital delivery in Garissa County, a significant proportion of women (76.3%) in our study had previous delivery assisted by skilled health practitioners at the GCRH. Other than the KNBS which focuses on a wider aspect of health, our study was unique because of its micro-level penetration within the initially marginalized region in the North Eastern Kenya. In other parts of Kenya, varying proportion of women are reported delivering in hospitals assisted by health care professional. In Laikipia and Samburu counties, lower proportion of women deliver at the hospital (Caulfield *et al*., 2016). In Kilifi county, Moindi *et al*., (2016) reported 74 % of the women in the study delivered at hospital during their last pregnancy. Further, our study is in agreement with that of Mwangome *et al.,* (2012), who reported that compared to other regions of Kenya, higher levels of hospital

deliveries (86.5%) was recorded in the coastal part of Kenya (Mwangome *et al*., 2012). In majority (79%) of the respondents delivered in health facilities in Tharaka Nithi county (Gitonga and Muiruri, 2016). On the contrary a lower level (3.1%) hospital deliveries were recorded in Kajiado Central District (Onyango, 2014). Studies done in Pokot county reported Ogolla (2015) reported only 33.3% of women who delivered in a health facility while compared to 66.7% delivered at home. In Nyandarua county based on all the deliveries a mother had prior to the study, the overall proportion of skilled attendance during delivery stood at 48.2% (Wanjira *et al*., 2011). In Western province estimate for deliveries in a health facility was lower at 18% (van Eijk *et al*., 2006).

Compared to other countries, lower (39.5%) hospital deliveries were recorded in Birnin Kudu, North-west Nigeria (Ashimi and Amole, 2015), 57.7% in Ghana (Nakua *et al*., 2015). In Ethiopia, a study found that only 31.5% of the respondents delivered at the hospital (Hailu and Berhe, 2014). In rural Cambodia, 19.8% had skilled attendants present during delivery.

The higher proportion of mothers delivering at GCRH in our study could be due to efforts by Kenya government of increasing hospital access to mothers especially in rural areas. Kenya government in collaboration with other health stakeholders has been carrying out high-level campaign and interventions to reduce maternal mortality in line with SDG 5 (Ogolla, 2015; Moindi *et al*., 2016). In particular, the current first lady is leading a campaign dubbed "Beyond zero campaign", to stop preventable maternal deaths by providing fully equipped mobile clinic to provide medical care during delivery to women who have no access to hospitals (Moindi *et al*., 2016). Further, the difference in the proportion of women delivering at the hospital could be due to the design of these studies. This study recruited women both currently pregnant and those who were not pregnant. Not all of these women, especially the non-pregnant ones, may have provided accurate information (Moindi *et al*., 2016). Other studies only included mothers bringing their babies for immunization services, and might have left out mothers who don't take their babies for vaccination or those who lost their infants in the first six months of life (Ogolla, 2015; Moindi *et al*., 2016).

5.1.2 Social-cultural and demographic factors associated with utilization of hospital delivery

Some of the social cultural and demographic characteristics that were found associated with hospital deliveries included; being a Muslim (OR 1.9, 95% CI 1.3–2.7); visiting hospital for antenatal care (OR 1.8, 95% CI 1.3 - 3.1) or delivery (OR 1.9, 95% CI 1.1–3.7); and the nulliparous women (OR 2.3, 95% CI 1.6 - 6.1). In this study, the Muslim women were more likely to deliver at the hospital compared to their Christian counterparts. This was contrary to a study conducted in Bangladesh (Sarker *et al*., 2016) which showed Muslim majority giving birth assisted by the traditional birth attendants. Religious providers seem to be re-shaping the ANC and delivery landscape by promising outcomes based on 'faith' and 'divine protection' rather than on child birthing skills (Udoma *et al*., 2008). Religious providers represent a diverse group of faith-based outlets ranging from birthing outlets linked to established churches and mosques to stand-alone small spiritual homes owned by individuals. These faith-based providers share a common feature of promising good delivery outcomes derived from divine/supernatural involvement. The religious environment together with socio-cultural, gendered pressures on women may drive women to faith-based birthing centers, mostly churches, in part out of hope that a divine or supernatural intervention will lead to a vaginal delivery (Olusanya *et al*., 2010). This kind of teaching is not so common to the Muslim religion. Further, given the current threat of attacks of Christians by terrorist groups, and given that the majority of the population in Garissa county are mainly Muslims, this could be a hindrance for the Christian faithful to seek hospitalization in health facilities owned or headed and operated by the Muslim faithful (Sinha, 2014; Ugwu and Kok, 2015).

Antenatal attendance was a key determinant of hospital delivery in this study. Similar results have been documented by several authors (Silal *et al*., 2012). Regular antenatal care is helpful in identifying and preventing adverse pregnancy outcomes when it is sought early in the pregnancy and is continued until delivery. The World Health Organization recommends that women have at least four antenatal care visits during each pregnancy. It is possible during these visits to

detect health problems associated with a pregnancy and to plan interventions. In the event of any complications, more frequent visits are advised, and admission to a health facility may be necessary (MOH, 2012). On the contrary, however, continuous use of unskilled deliveries in many communities suggests that merely making quality obstetric care services available is not enough to influence higher utilization of supervised delivery services (Carter *et al*., 2010; Magoma *et al*., 2010). Other studies have showed that other than ANC visits, which have not led to increased utilization of skilled deliveries, other factors such as acceptability to use health facilities during deliveries have been pointed as crucial (Silal *et al*., 2012).

In this study women who were nulliparous were less likely to deliver at the hospital. This is contrary to a study by Wanjira *et al*., (2011) who showed that increase in the number of deliveries was predictive of the delivery practice where mothers who had three children and above were found to practice unsafe delivery as compared to those who had delivered less than 3 children. Other studies have also confirmed significance of parity with utilization of modern maternity services where older, higher parity mothers tend to use a health facility lesser than younger, lower parity mothers (Mwaniki *et al*., 2002; Van Eijik *et al*., 2006).

Other social-cultural and demographic factors that we did not find associated with utilization of hospital delivery in this study included age, education level, marital status, occupation and current pregnancy status. Studies have reported age of the mother as one of risk factor associated with home delivery (Envuladu *et al*., 2013; Nanang *et al*., 2014). In the Kilifi Kenya a study reported that both age of the mother and that of the partner were associated with the risk of home delivery. Higher age of the mother would be a function of successful previous deliveries experience and some cultural norms. Mothers who have previously delivered successfully with no complications tend to deliver at home than the young new mothers (Moindi *et al*., 2016). On the other hand, older women may belong to more traditional cohorts and thus be less likely to use modern facilities than young women (Navaneetham and Dharmalingam, 2006). Elderly women who make decision within the family have good relations with TBAs in the

community. Often the mother-in-law prohibits her daughter-in-law from going to a hospital because she herself did not go to a hospital for delivery. The importance of the views of elders, including mothers-in-law remain an important factor of influence in decision making around delivery (Moindi *et al*., 2016).

High education levels of both the partner and the mother were associated with protective effect on the risk of home delivery (Wanjira *et al*., 2011). Several studies have identified mothers' level of education as one of the factors that determines choice of delivery place as well as of birth attendants (Kabir, 2004; van Eijk *et al*., 2006). Educated women tend to give birth to few children and deliver at a health facility compared to women with little or no education (Mwewa *et al*., 2010; Abebe *et al*., 2012). Mothers with low primary education (class 1-3) were found to have 19.2 [95% CI 1.7 - 212.8] probability of being attended by unskilled attendants compared to those with tertiary education (Wanjira *et al*., 2011). Education level can therefore be related to the level of exposure to the right information with regard to delivery.

Marital status in this study was not a factor that determines hospital delivery. On the contrary being a housewife coupled with poor or no education, harsh climatic conditions, inadequate public utilities including healthcare services, and transport system impacted negatively on women in West Pokot County ability to access maternal services (Ogolla, 2015). Most often, women who are purely housewives have limited or no access to resources and at the same time lack ability to make decision in their marital homes; they are therefore entirely compelled to rely on their mothers' in-law perception of their pregnancy including delivery care needs (Simkhada et al., 2010).

Advice on hospital delivery, belief on hospital delivery in this study was not found associated with hospital delivery. On the contrary in Nyandarua South District, Kenya, Wanjira et al., (2011). Showed that knowledge of risks involved during delivery was also significantly associated with the delivery practice. Majority (94.4%) of the mothers who had no correct information on safe delivery were found to get information on delivery from elderly women who may have

been misinformed and they practiced unsafe delivery compared to 18.5% that had the correct information. The odds of practicing unsafe delivery increased with decreased knowledge on safe delivery with those with least knowledge likely to deliver unsafely (AOR 36.5, 95% CI 4.3 - 309.3). Knowledge of risks involved in unskilled birth attendance was linked to the source of information whereby uninformed sources could be misleading and thus result in incorrect choices on safe delivery. These findings were in agreement with those of a study carried out in South Africa where lack of awareness of maternity waiting homes was one of the reasons for non-utilization of obstetric services (Uyirwoth *et al*., 1996).

5.1.3 Economic factors associated with utilization of hospital delivery

In this study none of the economic attributes of study population such as occupation, distance to the hospital, mode of transportation, delivery charges and who settled the delivery bills were found associated with utilization of hospital delivery services. This is in contrary to other studies that have shown that socio-economic status of mothers has been found to influence mothers' choice of medically assisted deliveries (Cotter et al., 2006; Wanjira et al., 2011). Wanjira *et al*., (2011) showed no significant difference between the wealth score among mothers who delivered unsafely and those who delivered safely. This showed that both groups of mothers; those with high wealth score and those with low, had an equal chance of choosing the type of delivery care and therefore the socio-economic status was not an issue in choice of delivery practice.

Contrary to previous hypothesis, cost of delivery at health facility was not reported as a major hindrance to accessing hospital delivery services rather distance from the nearest health facility was the major risk factor of home delivery. After adjusting for other risk factors, Moindi *et al*., (2016) showed that staying ≥10 kms from nearest health facility was associated with nearly 4-fold risk of home delivery. This key finding concurs with what other researchers in developing countries have reported (Doctors of the World USA, 2007; Gabrysch et al., 2009; Gabrysch et al., 2011; Shrestha et al., 2012; Gistane et al., 2015). Most pregnant women are not able to access transport services when they

develop labor mostly due to the poor road net-work and infrastructure especially in rural and poor urban regions in Africa (Shrestha et al., 2012). In Garissa County, health facilities are sparsely distributed with very poor road net-work and erratic public transport system. Most of the women could have developed labor at night when the public means of transport is not available. Interventions such as "waiting homes" near health facilities to accommodate the expectant mothers residing far from the nearest health facilities days before delivery day can be helpful in such scenarios (Abebe et al., 2012). Government run health facilities in Kenya, offer free maternal health services but this may not help the targeted mothers if the mothers can't access the health facilities. The 'beyond zero initiative' by the first lady was conceived to reach to these mothers who may not be able to access health facilities to deliver however the initiative is yet to have significant impact on reducing maternal mortality. Despite the fact that Garissa County is one of the Counties that received the mobile clinics, it has not been able to reach to the rural region of the county where majority of population resides (BeyondZero, 2016).

5.1.4 Health facility-based factors associated with utilization of hospital delivery

Women who had given birth previously in a health facility were associated with current delivery under the assistance of a skilled health worker. As expected the initial experience has a significant bearing on the current decisions. In India Pratim *et al*., (2013) showed that late registered women often tend to go for public hospital deliveries. Those with initial birth experience known to them that late registration itself is not appreciable, and are given reasons to make informed choices and they often have preference to deliver in the hospitals (Pratim *et al*., 2013). The experience of the previous hospital delivery, has a significant bearing in the current decision regarding institutional delivery. Women with good prior experience were shown to have higher affiliation to deliver the successive children in hospitals compared to those who had negative experience (Moran *et al*., 2007). Birth-preparedness and awareness-raising programs during hospital visits have been shown to help mothers to seek and demand care. Perceived

complications and health knowledge, and women's intention about where to deliver due to previous hospital experience, were associated with use of professional medical care in Bangladesh (Moran *et al*., 2007; Edmonds *et al*., 2012). Further studies are needed to assess the effect of birth-preparedness packages obtained at the health facilities on skilled attendance at birth in Kenya.

Perception of the services at the hospitals directly affect service uptake. Hospitals perceived to offer excellent services, and are clean, with all the necessary equipment and medical supplies, and those that observe patient confidentiality are generally accepted as good facilities, and this positively affects re-visit for old patients and referrals among the new patients (Kitui *et al*., 2013; Nakua *et al*., 2015). In other studies, some of the main reasons reported by mothers for choosing unskilled delivery over a skilled facility were poor attitude and verbal abuse from the skilled service providers. Negative previous experiences from service providers might have deterred some of the women from using skilled birth attendants (Mwifadhi *et al*., 2007; Warren, 2010). Training of staff on customer care and cross-culture communication can be used to enhance effective communication between health workers and clients to remove the latter's fear of unpleasant attitude of the former.

Our study showed that good rating of hospital services was associated with delivery assisted by the health practitioner at GCRH. Our study concurs with the findings of Wanjira et al., (2011) that showed that 53.3% (97) of the mothers, who expressed dissatisfaction with service delivery in the various maternity facilities they had attended for delivery, had unsafe delivery practices at home. The findings of this study are consistent with other studies carried out in Bangladesh, Malawi and Kenya where poor quality of maternity care services was identified as one of the factors contributing to low utilization of maternity services by mothers (Mulongo *et al*., 2006; Kabir *et al*., 2007).

Some other studies among women have identified other independent factors associated with utilization of hospital deliveries that were found not to be significant in this study, including physical accessibility, place of residence,

distance to the health facility and transport availability (Chaudhary, 2005). Traditional beliefs and customs, linked with ethnicity and religion, can influence the effective use of maternity services, primarily the decision to seek care (De Broe, 2005; Harris *et al*., 2010). Mwifadhi *et al*. (2007) found lack of money, sudden onset of labour, tradition and culture as determinants for the place of delivery. Affordability and availability were previously reported (Nakua *et al*., 2015).

5.2 Conclusions

1. A significant number of women from Garissa County prefers and utilizes hospital delivery assisted by skilled health practitioners.
2. Socio-demographic factors such as religious affiliation number of previous births are important predictors influencing how women in Garissa County utilizes hospital delivery
3. Just as in many studies economic factors such as occupation, distance to the hospital, mode of transportation, delivery charges in Garissa County are not necessarily key in driving the women hospital delivery choice
4. The outcome of previous ANC attendance and delivery services, the time or duration post previous hospital delivery and the quality of hospital service delivery, are important factors that influences utilization

5.3 Recommendations

1. Ultimately for the improvement in the proportion of women embracing hospital delivery in this region of Kenya, concerted efforts must be undertaken to promote and to tackle both the socio-cultural, maternal and hospital associated deterrents of up take. Should this be achieved, this region is poised to record one of the highest up take of hospital delivery in Kenya.
2. To rigorously measure the actual influence of socio-demographic, economics and cultural factors influencing utilization of GCRH delivery services, requires confirmation in a relatively larger longitudinal study.

3. The cross-sectional nature of this study, relatively small sample size of participant in the structured interviews, inadequate assessment of all potential factors associated with utilization of skilled delivery, could partly explain the observed lack of association between GCRH hospital delivery utilization and the above listed independent factors. This could be checked in a relatively larger longitudinal study
4. More rigorous Garissa county wide studies assessing the impact of the many interventions and policies rolled out to promote hospital deliveries such as; (i) making child delivery in public health facility free since 2013, (ii) putting up of a maternal shelter (commonly referred to as ‘waiting homes’) (iii) Output Based Approach (OBA) and the (iv) ‘Beyond zero campaign’ is highly recommended

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APPENDIXES

Appendix IA: Informed Consent Documents

Factors Affecting utilization of Hospital Deliveries at Garissa Provincial General Hospital

Questions about the study, contact: Muhamed Dabar (0721-737117) of the Kenya Medical Research Institute (KEMRI).

Description: I am asking you to participate in a research study to determine why some women refrain from institutional delivery despite attending antenatal care at the same institution and to explore ways on how to overcome this discrepancy in maternal health care in order to reduce maternal mortality at Garissa Provincial General Hospital (GCRH). Lack of skilled deliveries is a public health concern as it is associated with unacceptably high maternal and prenatal mortality in the developing countries. In Garissa District skilled delivery and hospital delivery is low. This study therefore seeks to clearly determine the actual proportion of women attending GCRH who utilize skilled service delivery and to establish why some women refrain from utilizing these skilled deliveries despite attending the WHO recommended antenatal care services.

Risks and benefits: One potential risk of being in the study is the loss of privacy in terms of some questions that will tackle your private life. However, we will do our best to make sure that the personal information gathered during this study is kept private. Initials and coded numbers will be used to identify the participants' laboratory specimens, source documents, CRFs, study reports to maintain confidentiality. All study records will be maintained in a secured location, etc. All study records will be maintained in a secured location. There is no monetary benefit for your participation in this study. The benefit which may reasonably be expected to result from this study includes your contributions to efforts to increase the proportion of women utilizing hospital delivery services. Your decision whether or not to participate in this study will not affect your current enrollment in any other study during your health care visit.

Time involvement: This study will be part of your routine visit for your maternal care and the general time involved during this visit will not be extended**.**

Subject's rights: If you have read this form and have decided to participate in this project, please understand your participation is voluntary and you have the right to withdraw your consent or discontinue participating at any time without penalty. You have the right to refuse to answer particular questions. Your individual privacy will be maintained in all published and written data resulting from the study.

If you have questions about your rights as a study participant, or are dissatisfied at any time with any aspect of this study, you may contact - anonymously, if you wish – The secretary, KEMRI Ethical Review Committee, PO Box 54840 – 00200 Nairobi, Kenya; Tel: 020-2722541, 0722205901, 0733400003; Email address: erc@kemri.org.

I have read this form or had it read to me in a language that I understand. I have discussed the information with study staff. My questions have been answered. My decision whether or not to take part in the study is voluntary. If I decide to join the study, I may withdraw at any time. By signing this form, I do not give up any rights that I have as a research participant.

_____ _____ _____

Participant Name Participant Signature/ Thumbprint Date

_____ _____ _____

Study Staff Conducting Study Staff Signature Date

Appendix 1B: Informed Consent Documents (Somali)

Foomka ogolaansha weeydiisashada sualaha cilmi baarista

Waxaan ahay arday waax kabarda jaamacada Nairobi kunaa taqsuusayo caafimaadka bulshaada. Sidoo kala, waxaan ushaqeeya wasaarada caafimaadka, gaabolka waaqoybaar. Waaxan sameeynaya cilmi baaris kusabsan ariimahaa raadka kuuleh mabaadii'da haweeyka ay kaqaabaan kuu daalistaa isbatalka guud ay Garissa**.**

Si aan u sameeyo cilmi baarsitani haddaba waxa aan ubaahnayahay in macluumaad aan ka helno haweeynka istiicmaadha clinika iyo kuwaa waakti doow kuudhaley isbaataalka guud ee Garissa. waxaana jaclaan lahaa in aan wareeysi idin ka qaadno. suaalo qoraal ah ayaa la idin ka qori doona, kaadibna jawaabhaasi oo aan lafi guri doono. Waxaana idiin balanqaaeeynaa in aan ilalalin doona kasloonida macluumaadka aad na siisaan oo aanan u siticmaali doonin wax kale oo aan aheeyn ujoodhaadhi kusaabsan cilmi baaristayta.

Maxsuulka ama natiijada cilmi baaristani waxa lagaa yabaa inn eey u suurtagalin doontaa wasaarada caafimaadka iyo haayadhaha kala ee kaalashaqeyo caafimadka sidii ay adeeg daryeel caafimad oo wanagsan ay u siin laheeyd dadyowga gobalka waqooyi bari iyo intii laahalmaasha ee kunool waadanka Kenya. Waan kuugu mahadcelin lahaa haddii aad 30 daqiiqo oo waqtigaada kamid ah aad iigu hurto si aan wareeysigasi kuula yeelano. Ma jiri doonta wax saambalo ama tijaaba ka qaadis ah.

Haadii aad aqbasho ka qeeybqaadashada wareeysigani, waqtigaad rabta ayaad haddana isaga bixi kartaa. Ma jiri doonta wax cawaaqib xumo ah oo ka soo gaari doonta ama adeeg laguu diidi hadii aaad wareeysiga ka qeeybqaadan weeyso.

Fadlan haddii aad dooneeysa in aad ka qeeybqaadata wareeysigani ee xaqiiji in aaad heshay macluumaadkaan ood fahantsantahay diyaarna u tahay in aad wareeysiga ka qeybqaadato.

Maa ogolati in an gudagalno war qadashada

_____ _____
_____

Magaa Sahih
Tariq

_____ _____
_____

Cilmi Baararh Magaa Sahih
Tariq

Appendix II: Structured interview questionnaire

Name of interviewer: _____ Facility name: _____

Date of interview: ____/____/____ Started time: _____ finished time: _____

Socio-demographic characteristics of Respondent

1. Where are you currently residing? (*Specify*) District: _____ Division: _____ Sub-location/_____ Village: _____	2. What is your age? (*probe age group if unable to get exact age)*	3. What is your religious affiliation? 1 = Muslim 2 = Christian 3 = None 4 = Other *(Specify)*_____	4. What is your marital status? 1 = Single 2 = Married 3 = Divorced /Separated 4 = Widow 5 = Other *(Specify*	5. What is your main occupation? *(Allow multiple answers)* ☐ 1 = None ☐ 2 = Housewife ☐ 3 = employee ☐ 4 = Business *(Specify)*_____ ☐ 5 = Other *(Specify*	6. What are other occupations you undertake? *(Allow multiple answers)* ☐ 1 = None ☐ 2 = Housewife ☐ 3 = employee ☐ 4 = Business *(Specify)*_____ ☐ 5 = Other *(Specify)*_____

7. What is the reasons for your attending the clinic 1 = ANC 2 = immunization/ weighing 3 = FP 4 = treatment 5 = PMTCT 6=delivery 7 = others (specify) _____	8. Are you pregnant? YES___ NO___ If yes, how many weeks of pregnancy 1= less than 16 weeks 2= 16 – 24 weeks 3 = 24 – 32 weeks 4 = over 32 weeks Don't know	9. How many live children have you had? 1 = 0 2 = 1 3 = 2 4 = 3 5 = 4 6 = 5 7 = more than 5	10. What is your highest level of secular education attended? 1 = None 2 = incomplete Primary 3 = completed primary 4 = Secondary 5 = College (middle level) 6 = University 7 = Other *(Specify)* _____	11. What is your highest level of religious education attended 1 = Dugsi complete Quran 2 = Dugsi incomplete Quran 3 = madrasa primary 4 = madrasa secondary and above 5 = others (specify_____

Maternal factors

11. Have you delivered at Garissa Provincial General Hospital (GCRH) before?

1 = Yes

2 =No

If no go to question 15

12. If yes, when was it?

1 =Less than a year ago 2 = 1 – 2 years ago 3 = 2-3 years ago
4 = 3 – 4 years ago

5 = more than 5 years ago

13. If yes, how were the services 1=Excellent 2= very good 3 = good 4 = poor 5= very poor

14. If answer is poor or very poor, why_____

15. If no, where will you prefer to deliver?

1= home 2 = Garissa PGH 3= other GOK hospitals 4 = private hospitals

16. If home, who do you prefer to deliver you?

1= TBA 2 = relatives 3 = self 4 = Health workers 5 = others (specify)_____

17. Why do you prefer _____

18. Will you advice someone to deliver at PGH Garissa?

1 = Yes

2 = No

18 a. If no specify where_____

19. Why _____

20. Is there any belief that refrain you from delivering in hospital?

1= yes

2 = no

21. If yes which one

1 = Religion 2 = Cultural 3 = others (specify)_____

22. Who decides where you will deliver

1 = you 2 = husband 3 = mother 4 = father 5 = in law 6 = TBA 7 = others (specify) _____

23. Where will you advice someone to deliver?

1 = PGH Garissa 2 = private nursing homes 3 = other GOK hospitals 4 = Home

5= others (specify)_____

24. Why do you advice someone to deliver in that place?

_____

Health facility factors – Distance

25. How far do you travel to reach Garissa PGH maternity ward?

1= Less than 1 KM 2= 1-3Km 3= 3-5 km 4 = more than 4KM

26. Is there another maternity ward near you?

1= Yes

2= No

27. Would you deliver in the nearest maternity?

1= Yes

2= No

28. If No, why

_____

29. Do you think that distance to reach the nearest maternity is a problem?

1= yes

2= no

Cost

30. In case you deliver in hospital, what means of transport do you use to come to the hospital?

1= walking 2 = family car 3 = taxi 4 = others (specify) _____

31. In case you use taxi how much do you pay? _____

32. How much do you pay for hospital delivery charges? _____

33. Who paid the hospital charges last time you delivered in PGH Garissa?

1= Family 2 = other relatives 3 = well-wishers 4 = government/donors 5 = don't know 6 = others (specify) _____

34. Does hospital cost prevent you not to deliver at the hospital?

1 = yes

2 = No

Quality of services at the hospital

35. What aspect of the PGH maternity service did you like? ***Allow multiple answers***

1= social support 2= Facility cleanliness 3= staff attitude 4 = Time taken to be attended to 5 = availability of medical supplies 6 = privacy 7 = others (specify) _____

36. What aspects of PGH maternity service do not make you happy? ***Allow multiple answers***

1= no social support 2 = facility unclean 3 = poor staff attitude 4 = time taken to be attended to 5 = Lack of medical supplies 6 = no privacy 7 = others (specify) _____

Staffs factors

37. Do you have any preferences on staff gender to deliver you at the hospital?

1= yes

2 = No

38. If yes who? 1= male, 2 = female

39. Why do you prefer that gender?

---

40. Does the lack of your preferred gender stop you not to deliver in the hospital?

1= yes

2 = No

41. How do you assess general staff attitude during delivery at PGH maternity?

1= Excellent 2= very good 3 = good 4 = poor 5 = very poor

42. Does this affect you in your future utilization of the maternity service in the hospital?

1= yes

2 = No

43. If No, why? _____

44. Any general comments on maternity service in GCRH _____

Appendix III: Questionnaire Guide for Focused Group Discussions

Site _____ date_____

Interviewers_____

Demographic data

s/no Names Age Occupation

1.

_____

2.

_____

3.

_____

4.

_____

5. _____

6.

_____

7. _____

8. _____

9. _____

10. _____

11. _____

12. _____

MOTHERS FACTORS

Where will you prefer to deliver?

_____

Why do you prefer to deliver in the mentioned area?

In your opinion which one is better, to deliver in hospital or home?

Why do you say so?

_____

What are your opinions in using maternity services at Garissa PGH?

_____

Is there any belief, culture or religion that stop you not to deliver in a hospital? If yes which one?

_____

Who decide where you will deliver and why?

_____

Health facility factors

Do you think distance is a problem in accessing maternity services nearest your home?

Do you think delivery cost will stop you not to deliver in hospital?

Do you think Garissa PGH maternity provide quality service during delivery?

What aspect in hospital did you like during delivery?

What aspect in hospital didn’t you like during delivery?

Will you advice someone to deliver at Garissa Provincial General Hospital (PGH) and why?

HEALTH WORKERS FATORS

Who do you prefer to deliver you in a Hospital during delivery and why?

Does lack of your preferred gender stop you not to deliver in a hospital?

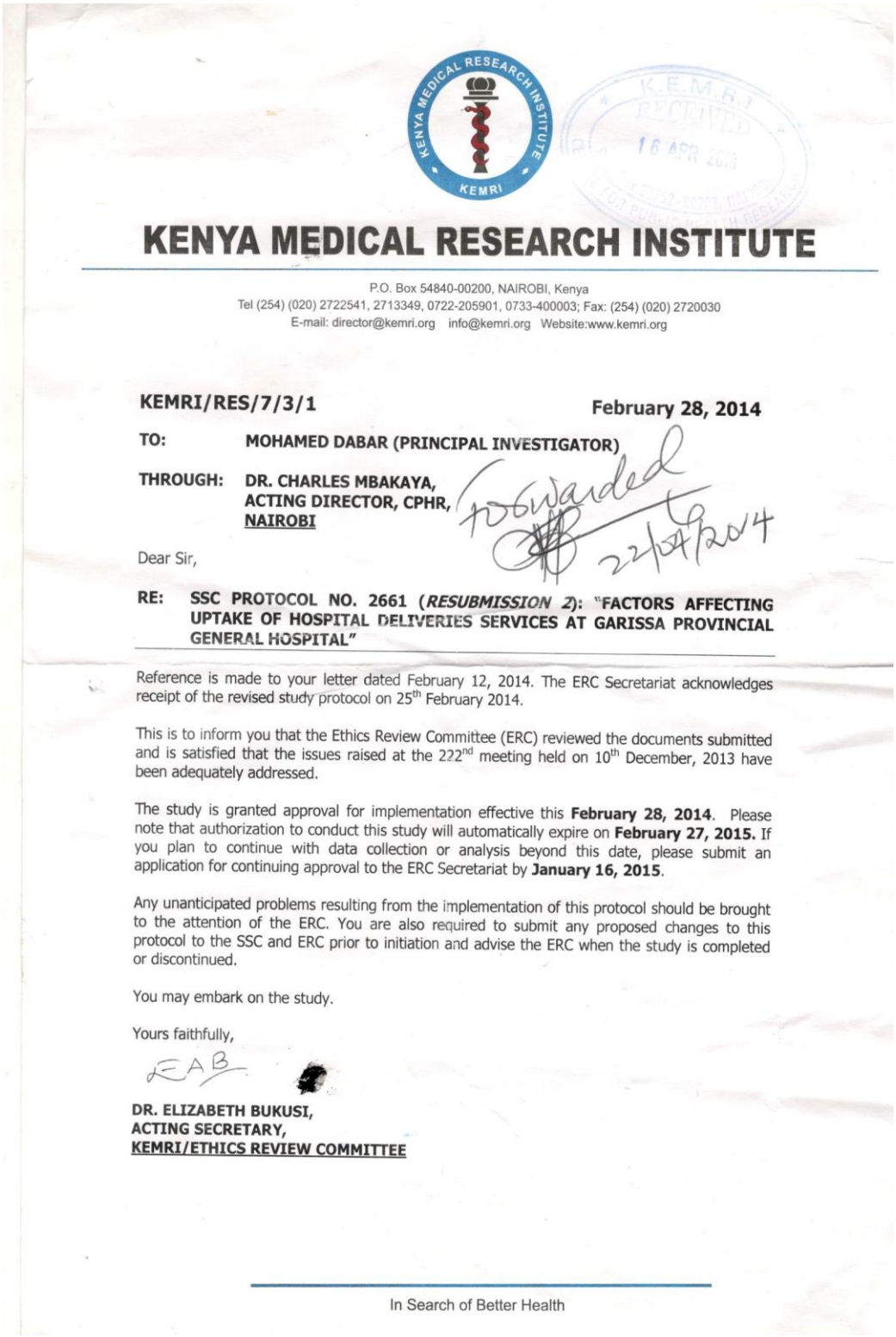
How do you assess health workers attitude during delivery?

If answer is negative does it affect in utilizing the maternity service in future?

What are your general comments in services delivered by Garissa PGH?

Thanks for your participation

Appendix IV: The KEMRI-ERC approval letter



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KEMRI/RES/7/3/1 **February 28, 2014**

TO: **MOHAMED DABAR (PRINCIPAL INVESTIGATOR)**

THROUGH: **DR. CHARLES MBAKAYA,**
ACTING DIRECTOR, CPHR,
NAIROBI

Forwarded 22/4/2014

Dear Sir,

RE: **SSC PROTOCOL NO. 2661 (*RESUBMISSION 2*): "FACTORS AFFECTING UPTAKE OF HOSPITAL DELIVERIES SERVICES AT GARISSA PROVINCIAL GENERAL HOSPITAL"**

Reference is made to your letter dated February 12, 2014. The ERC Secretariat acknowledges receipt of the revised study protocol on 25th February 2014.

This is to inform you that the Ethics Review Committee (ERC) reviewed the documents submitted and is satisfied that the issues raised at the 222nd meeting held on 10th December, 2013 have been adequately addressed.

The study is granted approval for implementation effective this **February 28, 2014**. Please note that authorization to conduct this study will automatically expire on **February 27, 2015.** If you plan to continue with data collection or analysis beyond this date, please submit an application for continuing approval to the ERC Secretariat by **January 16, 2015**.

Any unanticipated problems resulting from the implementation of this protocol should be brought to the attention of the ERC. You are also required to submit any proposed changes to this protocol to the SSC and ERC prior to initiation and advise the ERC when the study is completed or discontinued.

You may embark on the study.

Yours faithfully,

EAB

DR. ELIZABETH BUKUSI,
ACTING SECRETARY,
KEMRI/ETHICS REVIEW COMMITTEE

In Search of Better Health