Field Research Ethiopia

What rural pregnant women need - An insight into the lives and needs of the pregnant rural women of Tigray.

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09-08-2018

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ABSTRACT

Aim: Exploring the lives and activities of women and how this changes over the course of a pregnancy in order to receive a clear picture on their care needs and whether current modern care facilities and programs align to these needs.

Background: Maternal health in Ethiopia remains a problem largely due to the extreme low utilization of modern health facilities, despite their accessibility. This hints towards a large discrepancy between women's needs and what healthcare facilities and programs provide.

Methods: Data was collected from February 2018 – May 2018. For the purpose of this research a mixed-method approach was adopted. In total 80 surveys were conducted of which 50 respondents also participated in an in-depth interview. Moreover, in-depth interviews with health officials and two structured observations were conducted in order to provide additional insight into the services provided by the health agents.

Findings: Rural women largely experience a heavy domestic workload but during the maternal period receive much help from family and social capital. Concerning professional care, antenatal and delivery rate are relatively high, mainly due to the efforts of health extension workers by raising awareness within the community. Nevertheless, postnatal care remains extremely low due to religious restrictions and negative experiences during institutional delivery suggest room for improvement.

Conclusion: Maternal health programs within Ethiopia must be adjusted to the local needs and conditions of women. Women's perspectives must be considered for maternal health improvement. Programs such as the HEP would benefit a more inclusive approach that respects traditional norms together with professional modern healthcare in order to fulfill women's needs.

Keywords: Maternal Health, Institutional delivery, rural pregnancy, HEP.

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Master Thesis: International Development Studies

Preface

This research was conducted as a graduation thesis for the Master of International Development Studies at the University of Utrecht. The objective was to analyze the activity patterns of rural pregnant women in Ethiopia and how these change during the course of a pregnancy in order to provide more insight into their needs and consequently whether health programs adhere to these needs.

The research proved to be a very valuable and interesting experience. The traditional and pure nature of the rural population of Ethiopia has inspired and interested even beyond the scope of this research. In-depth interviews with rural women gave an insight into the strength and grace of Tigrinya women. Many cultural traditions and rituals ensured for a wonderful and interesting experience. Within this research a special thanks goes towards Kebede Manjur, whom provided excellent guidance, helped resolving difficulties encountered during this research and ensured for some great encounters with Tigrinya culture. Also, I would like to thank our translator, Amsalu, who made our fieldtrips a joyful experience.

Moreover, I would like to thank Annelies Zoomers, my supervisor, who provided guidance throughout the process of this research and with her feedback pushed me to stay focused. Finally, I would like to thank Josine Sunter, who also conducted her research in Tigray, Ethiopia. With whom I have experienced many adventures and emotions in a relatively short period and who made conducting research all the more fun.

Robin Muzea
09-08-2018

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List of Abbreviations

VHW = Voluntary Health Workers

HEW = Health Extension Workers

HEE = Health Extension Experts (midwives)

HEA = Health Extension Agents

HC = Healthcare Center

HEP = Health Extension Program

TBA = Traditional Birth Attendant

ANC = Antenatal Care

PNC = Postnatal Care

WHO = World Health Organization

SDG = Sustainable Development Goals

MDG = Millennium Development Goals

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Introduction

Despite the efforts of the Millennium Development Goals, maternal health remains a major problem in various countries around the globe. The Millennium Development Goals established in 2000 were set out to reduce maternal mortality by three quarters from 1990 until 2015. The set target unfortunately was not reached, but maternal mortality did reduce by 45%, of which most declines occurred after the 2000s (United Nations, 2015). New United Nations goals were established in 2015 named the Sustainable Development Goals (SDG's) of which goal 3 'Good Health and Well-being' refers to a reduction of maternal morbidity. The new goals are to be achieved in 2030. Concerning maternal health the SDG's strive to reduce the global maternal mortality ratio to less than 70 per 100,000 live births (United Nations, 2015).

While being a global effort, the goal to increase maternal health will be most problematic for Africa. Despite world decline rates, the amount of maternal morbidity in Sub-Saharan Africa remains extremely high with the predominance of maternal deaths occurring in Sub-Saharan Africa (Kalipeni, Iwelunmor & Grigsby-Toussaint, 2017). In order to achieve the set target of the Sustainable Development Goals by 2030 countries will have to reduce their maternal mortality rate by at least 7.5% each year. If this goal is reached, this will result in approximately 60% fewer deaths in 2030 than the estimated in 2015. This translates into 2.5 million women's lives saved between 2016 and 2030 (WHO & Unicef, 2015).

Problem

As established, reaching the set target of maternal health will be problematic especially for Sub-Saharan countries. Maternal health remains high with leading death causes being severe bleeding, hypertensive diseases and infections (Ronsmans & Graham, 2006; Abdella, 2010). These leading death causes can be easily prevented. The majority cases of maternal deaths could have been prevented by institutional delivery or utilization of modern health facilities. Due to both the Millennium Development Goals and the Sustainable Development Goals many projects arose that either improved existing health facilities or created new health facilities throughout developing countries. Nevertheless, utilization of modern health facilities remains low, especially in Ethiopia (Mekonnen & Mekonnen, 2003; Tarekegn, Lieberman & Giedraitis, 2014). The under-utilization of health facilities in developing countries poses a real threat to improving maternal health. The research of Feyissa & Genemo (2014) mentions that only 10% of Ethiopian women

make use of institutional delivery. In addition, Mekonnen et al. (2003) mention that only 27% of Ethiopian women received antenatal care. This level of maternal healthcare service utilization is extremely low, even considering Sub-Saharan standards.

Multiple researches have analyzed possible reasons or determinants for the low maternal healthcare utilization in Ethiopia. Most researches point to the importance of several factors such as; urban versus rural residence, education level, poverty level and distance to health facilities or accessibility (Mekonnen & Mekonnen, 2003; Tarekegn et al., 2014). Various researches explicitly demonstrate to the importance of rural versus urban residence, as the amount of women receiving modern healthcare in urban areas are significantly higher than in rural areas (Mekonnen & Mekonnen, 2003; Tarekegn et al., 2014; Feyissa & Genemo, 2014). These results are regardless of the accessibility of modern healthcare, as researches by Shiferaw, Spigt, Godefrooij, Melkamu & Tekie (2013) has shown that despite the accessibility of modern health facilities women in rural areas still do not make use of these facilities. This initiated a national program launched in 2003 named the Health Extension Program (HEP) stimulating basic health care coverage especially targeting the rural population. The aim of the program is to educate the rural community about several health issues and tries mobilizing communities to change their behavior in addition to providing preventive health services (Wang, Tesfaye, Ramana & Chekagn, 2016; Unicef, 2014). Nevertheless, despite national efforts and some increases, the 2016 demographic health survey of Ethiopia still indicates low utilization of health facilities. Namely, overall 26% of women delivered their last child in a health facility and for the rural population this is only 20% (Central Statistical Agency Ethiopia & ICF, 2016).

The remaining low utilization of modern health facilities by Ethiopian women thereby indicates a large discrepancy between the needs of rural women and the care provided by modern facilities, despite national efforts encouraging women to utilize such facilities. Therefore, it is important to analyze whether such programs sufficiently adhere to the lives and needs of rural women. There are multiple aspects of women's lives that can impact their health and health behavior. For example rural women in Ethiopia largely experience high workloads, even during their pregnancy's, which can also contribute to health problems during the pregnancy (Berhane, Gossaye, Emmelin, & Hogberg, 2001). Therefore, especially concerning the importance of maternal health, researchers have to take a step back and thoroughly analyze women's daily lives, activity patterns and how these change over the course of a pregnancy. This in order to receive a clear picture concerning the care needs of pregnant women in a rural setting and consequently in what way modern healthcare systems can be adapted towards these needs. Accordingly, this research will provide an analysis of women's activity patterns during their pregnancy and possible activity shift. This consequently will provide a deeper understanding in women's care

needs and their personal experiences. Within this research therefore a distinction is made between care provided by Health agents of the HEP and care provided by their social capital.

Academic relevance

Many researches analyze what factors determine whether women make use of modern healthcare facilities during their pregnancies. These researches predominantly focus on the importance of modern health utilization and institutional delivery in improving maternal health thereby focusing on medical influences on maternal health. The majority of researches herein analyze quantitative data in finding explanations for the low utilization of modern health facilities, in addition to impact analysis of programs such as the Health Extension Program. Nevertheless, there is an absence of literature that takes the pregnant mother as main research interest. This research tries to shift the scope of interest towards the pregnant mother by analyzing the activities of pregnant women and how maternal healthcare fits into *their* activity pattern, contradictory from previous research. Thus, this research will explore the daily lives or activity patterns of women during their pregnancy and shortly after birth, in addition to the care they receive and their articulated (health) care needs. In doing this, this research will provide more insight into how pregnancies impact the lives of rural women in Ethiopia and consequently how modern healthcare facilities can adapt to these needs.

Social relevance

In addition, scholars such as Feyissa & Genemo (2014) mention the importance of the development of healthcare programs especially targeted at rural and uneducated women. This research will respectively analyze whether a program such as the HEP actually adheres to their needs. Analyzing the general impact of a pregnancy on women's lives and activities in a rural area of Ethiopia, can give more insight on the effect on women's lives and consequently their needs. Finally, by understanding their lives and needs, this can shed light on how healthcare programs should be developed or altered and can be targeted best in order to reach this rural population.

Theoretical background

The World Health Organization (WHO) states "In childbearing, women need a continuum of care to ensure the best possible health outcome for them and their newborns. The continuum starts with the woman and her family in the woman's own home — i.e. self-care and prevention. It is followed by the first level of health care (at a health post, clinic or in the client's home) and involves the provision of high-quality midwifery care" (2004, p. 1). Even though this definition clearly defines the healthcare needs of pregnant women in reality the healthcare needs largely do not meet these requirements set by the WHO. Especially in Ethiopia, the number of women making use of professional health facilities is extremely low. Even though the research by Tarekegn, Lieberman & Giedraitis states "an estimated 74% of maternal deaths could be averted if all women had access to the interventions for preventing or treating pregnancy and birth complications, in particular emergency obstetric care" (2014, p. 2).

Many researches and projects therefore emphasize the need for professional health care in developing countries. The World Health Organization continues by reinforcing the importance of a functioning healthcare system in addition to transport between various clinics and hospitals. The WHO puts the skilled attendant at the center of maternal care. However seeing there is a large discrepancy between the health care needs as described by the WHO and how the healthcare needs are fulfilled in most developing countries this requires some additional attention. As has become apparent by various scholars and literature, the pregnancy experiences of women in Ethiopia vary greatly to those in the Western world. Therefore, understanding the impact of pregnancy on the activity patterns of rural women, will give more insight in their needs and how these should be fulfilled. Thereby also aiming to conclude an overall understanding in the needs of women and whether modern health facilities are adhering to these needs.

Activity patterns

Women's activities within the developing world fall under three categories: economic, domestic and agricultural. Women's working hours either domestic or agricultural are generally long and energy consuming. The research of Lukmanji (1992) discusses various studies that analyze the influences of this workload on women's health and nutritional status. As becomes apparent by the various studies, women generally have a lower energy intake than their expenditure resulting

in negative influences to their health status such as weight loss. Women work more than 10 hours in domestic work and approximately 14 during agricultural season, especially creating problems during the rainy seasons, which include heavy agricultural work. A research by Fabusoro, Afolabi & Adenekan (2004) elaborated on the effect of rural women's workload on care practices and children's growth. Stating that rural women have a heavy workload, working on average 13 hours a day, which has a negative effect on the care provided to their children. This in turn was found to have a negative effect on the nutritional status of the children. However, there are also researches pointing to the negative effect of a heavy workload on women's own nutritional status within the developing world. As mentioned by Nti, Inkumsah & Fleischer (1999) women work around 12-17.5 hours daily and in their attempt to fill multiple roles women suffered several health issues such as weight loss, weakness tiredness and body pains. All researches thus indicate that the extreme workloads of women in the developing world can have large effects on their health status.

More specifically, domestic work such as household tasks and child caring activities in poor rural families take up most of women's day. Women generally work around 14 hours per day in domestic chores generally entailing collecting water, firewood, processing and preparing food, travelling and taking care of their children. Because the tasks are unpaid it restricts women's time but more importantly it influences women's health and nutritional status (Cooke, 2016). These negative effects are increased in which the woman's body is in a vulnerable state, like during a pregnancy (Lowe, Chen & Huang, 2016). Therefore it is important to gain additional information concerning the effects of a heavy workload on the maternal health of women and whether activities are reduced during pregnancy. This also in order to achieve more insight into women's needs during their pregnancy and shortly after. Several researches concerning social capital suggest that women's social environment including family but also neighbors can have a positive influence on women's maternal health by decreasing some of the workload. This will be discussed in the following section.

Kin Family Members

As mentioned, women in rural areas largely experience heavy workloads in economic, domestic or agricultural work. Due to the fact that heavy workloads are said to negatively influence women's health status it is important to address the workloads of women during their pregnancy. During the pregnancy, kin family members often play an important role. In rural areas kin-members often fulfill healthcare needs during the course of a pregnancy. Studies have indicated that in Ethiopia grandmothers have a positive effect on the nutritional status of children and an important role in the first month of children's life, or also referred to as neonatal period.

Especially this period is high in death risk. The help of grandmothers by reducing workloads of mothers decreases death risks and improves children's level of wellbeing (Gibson & Mace, 2005). In this case the mothers lack of ability to fulfill certain activities or household tasks, ensures for grandmothers to perform such tasks.

Another study in Senegal portrayed the importance of grandmothers as a source of information concerning maternal health. Grandmothers in this case are often seen as experts and trusted in their informative role. The study showed that grandmothers, after being trained, had promoted new health behaviors. These included elements such as a decrease in workload and improved diets, early initiation of breastfeeding and exclusive breastfeeding for the first six months. All of which have a positive influence on the maternal health of pregnant women and guide the activities and behavior of the pregnant women. Especially a decrease in workload can reduce the chances of women obtaining severe bleeding after delivery. Kin members, in this case often grandmothers, have an important role in fulfilling the healthcare needs of pregnant women in rural areas (Aubel, Touré & Diagne, 2004). This is mostly done by informing mothers and helping them or even completely taking over household activities and tasks.

Social Capital Theory

The aforementioned section describes the help of direct family members nevertheless other informal caregivers largely entail a bigger social group or also referred to as social capital. This can entail friends, neighbors and other community members that provide care during any given time and in this respect the maternal period. This leads us to the Social Capital Theory, which refers to "the norms and networks that enable people to act collectively" (Woolcock & Narayan, 2000, p. 226). The theory stresses the importance of relations and social networks. The theory goes as far as to say that, communities whom have a strong social capital generally have more means to tackle poverty and vulnerability. The theory thus is largely adopted in development studies (Woolcock & Narayan, 2000).

Social capital in relation to maternal health and pregnancies is a relatively unexplored field however studies indicated that strong social networks did have positive influences on pregnancy outcomes (Agampodi, Rheinländer, Agampodi, Glozier & Siribaddana, 2017). Arguably social support reduces stress, which can have positive influences on women's maternal health. In addition, the research by Agampodi et al., (2017) showed that in Sri Lanka frequent informal social networks and social participation mainly through neighborhood bonding can relieve small physical symptoms during pregnancies. The study revealed that overall communities rely a lot on neighborhood cohesion and individual social capital especially during pregnancies. During their

pregnancy, women largely made use of social capital through family members, close friends relatives and individuals for their direct neighborhood. The impact of social capital, such as TBA's and family members, but also community and neighborhood support during women's pregnancies is therefore very important.

Traditional Healthcare

Despite a focus on social factors such as the activities of women and the influence of a heavy workload on their maternal health status, it remains valuable to explore the utilization of modern health facilities in the developing world. First of all, women as mentioned do not make use of modern healthcare due to several determinants such as; poverty level, education level, urban versus rural residence, accessibility and religion. In which Muslim or Christian orthodox generally make more use of professional care compared to traditional beliefs often found in rural areas (Tarekegn et al., 2014). Nevertheless, in many cases despite the accessibility of professional health care women still predominantly make use of traditional health care. Traditional medicine and traditional healthcare remain an important part in Ethiopian rural culture. In Ethiopia 80% of the population makes use of traditional medicine due to its wide cultural acceptability. The dominant traditional medicine practitioners are traditional birth attendants (TBA's), which assist pregnant women during and after delivery (Kassaye, Amberbir, Getachew & Mussema, 2006).

In addition, the findings by the study by Yakong et al. (2010) demonstrate that women generally have negative experiences with professional nurses, which ensures them to not utilize professional reproductive care in the future but rather seek the help of Traditional Birth Attendants. Another study conducted in Ghana states "In rural Ghana, women continue to prefer to deliver at home owing to their fear of hospitals and operations, lowered status in the household or community, intolerant staff, and financial costs" (Bazzano, 2008, p. 94). As becomes apparent pregnant women living in rural areas generally have multiple reasons not to utilize modern healthcare. Specifically in Ethiopia dominant reasons why women chose home delivery instead of institutional delivery is that first of al, it is not necessary, secondly it is not customary, thirdly it costs too much and finally it is too far and transportation is unavailable. In addition, TBA's are seen as competent and culturally acceptable and inline with rural traditions, such traditions are generally not respected in modern healthcare facilities (Shiferaw et al., 2013). The Tigrayan culture of Northern Ethiopia more specifically has multiple traditional values that promote home delivery distinct to this region, which have been found to be a primer barrier to institutional delivery (Gebrehiwot, San Sebastian, Edin & Goicolea, 2014).

Furthermore, TBA's are trusted within a community whereas there is little confidence or trust in health professionals due to bad experiences or low quality of professional healthcare

services (Shiferaw et al., 2013). Moreover, the article by Srivastava, Avan, Rajbangshi & Bhattacharyya (2015) analyses the determinants of women's satisfaction with maternity care in developing countries. There were several determinants found important in several researches namely; 'Distance and transport connectivity', 'Cleanliness' entailing good hygiene, 'Financial costs of care', 'availability of drugs and equipment' and 'Interpersonal behavior'. The latter entailing respectful behavior of doctors and nurses, along with assurance of privacy and confidentiality. This was noted as the most important quality since this factor was reported irrespective of women's social cultural or economic status. The emphasis on interpersonal relations is in line with previous researches that note that Traditional Birth Attendants are in many cases also family-related and therefor play a comforting role towards the pregnant women, especially during delivery (Shiferaw et al., 2013). All in all, TBA's have an important role during women's pregnancy and delivery due to their traditional and community value in addition to a personal aspect a TBA provides.

Conclusion

Theoretical background achieved from previous researches mainly points to the heavy workloads of women in the rural areas of developing countries. The heavy workload in either economic, domestic or agricultural activities has a negative influence on women's health status. However, there remains an academic literature gap concerning the effect of a heavy workload on women's maternal health status. Literature suggests that social capital and kin family members can have a positive effect on maternal health during a pregnancy by reducing workloads of the mothers. Thereby, suggesting an activity shift towards either members within ones social capital or direct family members. This somewhat is in line with the overall prevalence of traditional birth attendants rather than the utilization of modern health facilities. Especially considering literature mentions the, often personal, connection or even family ties between women and the local TBA in contrast to the modern and clinical approach when utilizing modern health facilities. This research therefore is aimed to further explore women's activity patterns a corresponding shift towards members of the social capital and the usage of modern health facilities versus traditional birth attendants.

Concepts

Throughout this research several concepts are used. This chapter will provide more insight into the concepts used during the research. Even though the research focuses more on social care, clarification of certain concepts and terminology used is necessary. The following chapter will provide more information on certain concepts and terms used throughout the research.

Maternal Health/ Maternal Morbidity

Maternal Health refers to the health status of pregnant women during their pregnancy and within 42 days after delivery. This thus encompasses the period of antenatal care in combination with postnatal care. Maternal death therefore refers to "the death of a woman while pregnant or within 42 days of termination of pregnancy, irrespective of the duration and site of the pregnancy, from any cause related to or aggravated by the pregnancy or its management, but not from accidental or incidental causes." – (Ronsmans & Graham, 2006, p. 1190). Severe bleeding, hypertensive diseases or infections generally cause maternal death. Inequalities in maternal health risks among people around the world are generally due to variations in income levels. Poverty being the main contributor to increased risks in maternal health other factors differs per region (Ronsmans & Graham, 2006).

Antenatal Care

Antenatal care refers to the care women receive during their pregnancy leading up to the delivery. A standard program of four antenatal visits is recommended by the World Health Organization, in which for example blood pressure and weight are measured. Overall generally few life-threatening complications are prevented by antenatal care nevertheless it does have numerous benefits. Foremost, it provides an opportunity of informing the patient and educating them about potential risks and the benefits of institutional delivery. In respect, there is a positive relation between women who receive antenatal care and have professional or institutional deliveries. Therefore, while not having a large direct effect on the maternal health of pregnant women it has several indirect benefits (Abou-Zahr, Wardlaw & WHO, 2003).

Delivery Care

Delivery care refers to the care women receive during delivery. Women in Ethiopia predominantly prefer home deliveries rather than institutional deliveries. Reportedly 84% of all deliveries occur at home and approximately 78% of all deliveries in Ethiopia were attended by a Traditional Birth Attendant rather than a professional (Shiferaw et al., 2013). Delivery care remains one of the most important aspects of maternal care as delivery is the most challenging and care demanding time of a woman's pregnancy.

Postnatal Care

Postnatal care refers to the care provided to women within 42 days after delivery (Tarekegn, 2014). Research has shown that besides delivery itself the day's followed up by delivery are most crucial for women. Most maternal deaths occur in the latest trimester of the pregnancy or in the first few days after the pregnancy (day 1 being highest after which the number decreases) (Ronsmans & Graham, 2006). Therefore, postnatal care is very important in increasing maternal health throughout the world.

Traditional Birth Attendant

A Traditional Birth Attendant refers to "a person who assists the mother during childbirth and who initially acquired her skills by delivering babies herself or by working with other TBAs" (WHO, as stated by Shiferaw, 2013, p. 1). TBAs are often older women and are generally illiterate. Traditional Birth Attendants attend the largest percentage of deliveries in Ethiopia and therefore are an important element in maternal health. Nevertheless, studies have indicated that TBA's or the training of TBA's does not help with decreasing maternal morbidity. Therefore, scholars suggest an increasing need for TBA's to perform a connecting role between modern and traditional healthcare (Sibley & Sipe, 2006).

Skilled Attendant

A skilled attendant refers to "an accredited health professional — such as a midwife, doctor or nurse — who has been educated and trained to proficiency in the skills needed to manage normal (uncomplicated) pregnancies, childbirth and the immediate postnatal period, and in the identification, management and referral of complications in women and newborns" (WHO, 2004, p. 1). Skilled attendance has been directly linked to increased maternal health. Therefore

numerous organizations, such as WHO, have stimulated the utilization of skilled birth attendance and modern health facilities.

Health Extension Worker

The Health Extension Program (HEP) is a community-based program launched in 2003, in order to achieve universal basic health coverage amongst the rural population of Ethiopia. The main drivers of the program are the Health Extension Workers (HEWs) whose main job is to create awareness concerning several health issues including maternal health.

Conceptual Model

The following conceptual model portrays connecting relationship between several concepts discussed throughout this research. The care needs of women and how these are fulfilled can be distinguished in three categories namely; traditional, modern and social capital. Programs such as the HEP try to stimulate behavioral change from traditional healthcare to modern healthcare utilization.

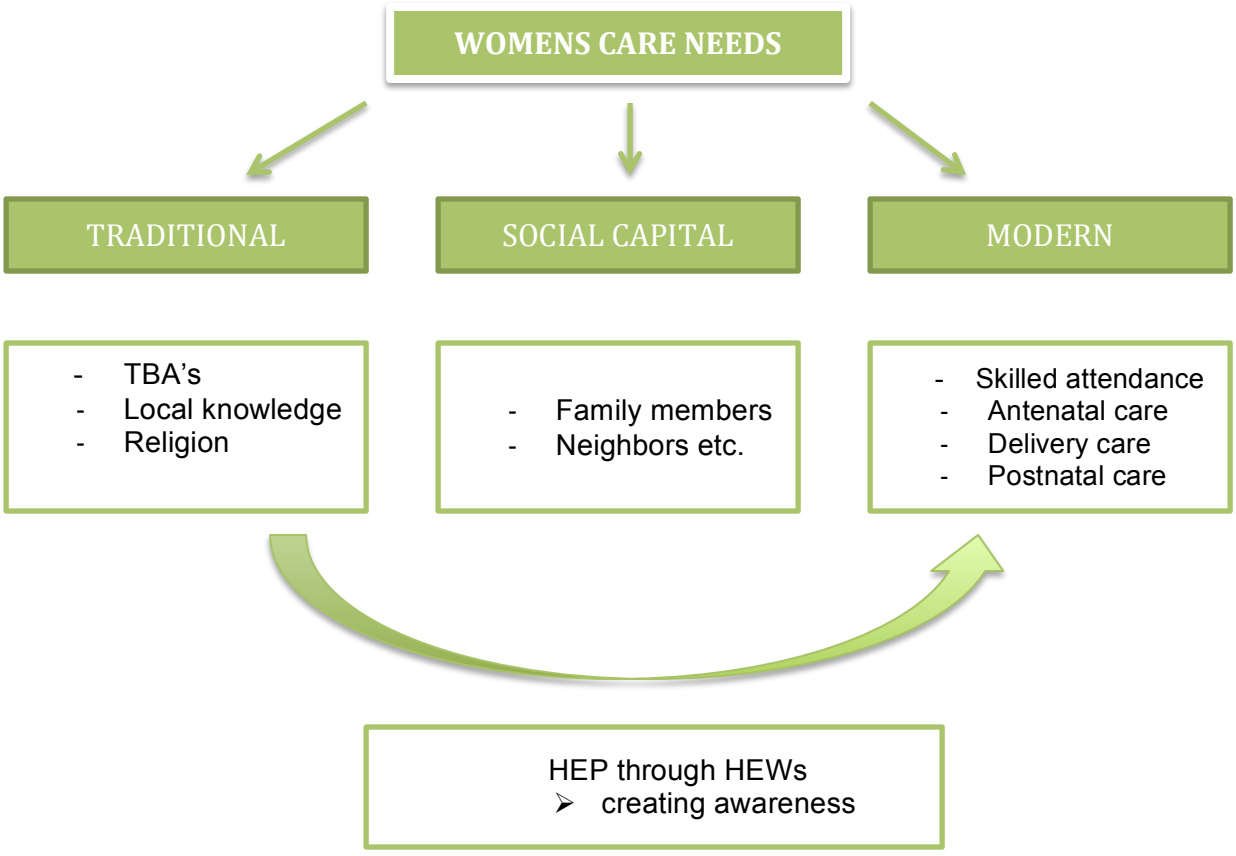


Figure 1.: Conceptual Model

Conclusion

The aforementioned concepts all concern maternal health. Maternal health encompasses the antenatal, delivery and postnatal period. This terminology is rather medical but refers to the period during and shortly after the pregnancy. This period will be adapted in which women will be analyzed. The 'activities of women' thus refers to activities within the antenatal, delivery and postnatal period. As has become apparent by numerous literatures, pregnancies are experienced very different in rural societies in Ethiopia than the Western world. In the West women predominantly rely on modern health facilities whereas women in Ethiopia predominantly rely on traditional medicine and social capital such as birth attendance for care. In addition, women in rural Ethiopia generally experience high workloads even during their pregnancies. These high workloads, often entailing physically demanding work, can have negative effects on maternal health. Reducing workloads can thereby even decrease later complications and necessity for medical interventions (Mozurkewich, Luke, Avni & Wolf, 2000).

This raises interest in the activities of women during and shortly after their pregnancies. Especially considering literature and projects are often targeted at modernizing maternal care in rural parts of Ethiopia, however is this in line with the lives and needs of these women? Consequently, this leads us to the following research question:

What are the care needs of rural pregnant women in two villages of the Tigray region Ethiopia?

This question remains the leading question that guides the research. Subsequently this is followed by several sub questions, interested in finding more in-depth analysis on multiple facets involved in the pregnancy of rural women in Ethiopia. The questions are listed as follows:
Sub questions:

- What are the daily activities of women and is there a shift in activity patterns?
- What are the different kinds of care provided to rural pregnant women?
- Is the care provided in line with the activity patterns of women and their care needs?

In answering these sub questions this research will foremost provide an insight in the lives and activities of rural women of the Tigray region during their pregnancy and after delivery. By providing a deeper understanding of their lives in addition to how this is influenced by a pregnancy will provide more insights in the care needs of these women. Furthermore the different kinds of care currently provided to women are ascribed. Finally it will be concluded whether the care provided to these women is in line with their needs.

Methodology

The Methodology describes how the research is conducted and what methods and techniques are applied. This chapter will further identify research instruments used and consequently some limitations this research might encounter.

Research Area

This research was conducted in the Tigray region of Northern Ethiopia. Within the process of this research, political unrest in Ethiopia grew to such heights that the initial research area Nekemte, was unsafe and thus the research location had to be adapted. The Tigray region was selected in collaboration with our main contact person Kebede Manjur. Due to the change of research location there were several changes within the research nevertheless the overall guiding questions and theory remained identical. Because of the change in research location, a new research field had to be established. This, again, was conducted with the help of Kebede Manjur in alliance with the Mekelle University. Two villages were selected based on their variation in road accessibility, facilities, electricity and availability of a Healthcare Center. Mere-Mieti is the administrative village under which Elkin falls. Mere-Mieti encompasses the various facilities, road accessibility and a healthcare center which serves multiple villages including Elkin. The comparison between two villages would ensure insight in whether electricity, road accessibility and other facilities have much affect on the activity patterns and care needs of pregnant women and their healthcare utilization.

Research Group

This research focuses on the activity patterns and consequently the (health) care needs of pregnant women. Interest lies within the activities, possible shift of activity pattern and experiences of women during their maternal period. Therefore, our research population consists of women that are currently pregnant or have been pregnant in the last two years. Using this approach, the research relies on current data and experiences of women but also on the recall method, entailing that women state their past experiences based on memories. Therefore, the research group only consists of women whom are currently pregnant and who have given birth in

the last two years, as this ensures that women are able to recall experiences correctly. The sample is divided into the following subgroups:

Table 1.: Sample Categories	
Sample	**Sampling Method**
Key informants	Via University/ HC
Women currently pregnant	Observation + Snowball + Key informant/HC
Women pregnant past year	Snowball + Key informant/ HC
TBA's	Community information
HEWs	Through HC

Table 1. Sample Categories.

This table shows the different sample categories consistent in this research. Each category requires its own sampling method or strategy. Prior to this research, a key informant was established through relations between the Utrecht University and the Mekelle University in Tigray, Ethiopia. With the help of this contact person and through the Mekelle University a translator had been acquired.

Operationalization Concepts

The following table depicts the operationalization of the period over which women are interviewed. The operationalization of the period over which this research analyses respondent's experiences is as follows:

Table 2.: Operationalization Time Analysis	
Concept	**Period**
Antenatal Period	From beginning pregnancy to delivery
Delivery Period	Delivery period
Postnatal Period	42 days after delivery

Table 2. Operationalization Time Analysis

All these periods together constitute the maternal period. Therefore, women are asked about their activities and experiences from the beginning of their pregnancy up until six weeks after delivery. Questions concerning the delivery and postnatal period will be solely conducted from women whom have been pregnant in the recent year and rely on the recall method.

Research instruments

Moreover, this research made use of a mixed-methods approach in order to gain a broad understanding and provide as much of a holistic view on pregnancy in the rural villages of Tigray. Combining both Qualitative and Quantitative methods ensures for the collection and processing of objective data such as demographic figures in addition to subjective data such as the experiences of women. Including both approaches in the research provides a comprehensive approach that gives insights into multiple layers of the research group.

Surveys

First of all, surveys were collected among the rural pregnant women. The surveys mostly target demographic information and introductory questions concerning care needs during pregnancies. Due to the fact that largely all respondents were illiterate, the survey questions were asked verbally through the help of a translator. In some cases, the survey questions posed as introductory to further more in-depth interview questions. In total 80 respondents participated in the survey questions of this research by means of a verbal questionnaire and the help of a translator.

Interviews

Conducting in-depth interviews is most applicable in receiving a wide range of information on women's thoughts, needs and experiences. In-depth interviews were conducted among the target group in order to get a deeper understanding of the community values, the activity patterns of women and healthcare needs as expressed by the respondents. The interviews were conducted in Tigrinya with the help of a translator. In total, 50 respondents participated in an in-depth interview. In addition, two health extension workers, the Healthcare center manager, one Traditional Birth attendant and finally a Development and Network Group leader participated in in-depth interviews, all of which supporting the general aim of this research by providing information from different angles, backgrounds and occupations.

Structured Observation

Within this research, health officials conducted home-to-home visits to the sample population in order to inform them concerning several topics regarding maternal health. As these home-to-home visits align directly to the scope of this research, two structured observations were conducted in order to observe these visits and analyze the means in which they were conducted.

Secondary research

Finally, secondary research was used to provide more background information onto the subject and region analyzed. Secondary data consists of demographic statistics but also government reports and various other researches used to provide a deeper analysis of the region.

Strategies for participant recruitment

As mentioned, the various sample categories ensure for different strategies in recruiting participants. Sample categories such as women who have delivered in the last year and Traditional Birth Attendants can prove more difficult to find, thus resulting in different recruitment strategies. The various strategies applied are discussed hereafter.

Gatekeepers

Due to the availability of the healthcare center in the village Mere-Mieti this ensured for an excellent opportunity to encounter a prominent part of the research sample: pregnant women. The Health care center ensured that women could visit the healthcare center every day nevertheless Tuesday's were especially selected for antenatal care of pregnant women. This created a good opportunity to conduct surveys. Nevertheless, there are some limitations in using this approach therefore there are multiple approaches used for the purpose of this research. As merely using the Healthcare center results in solely the representation of women who make use of antenatal care, women who do not make use of such care facilities would be neglected in the research. In addition, due to the location of the surveys the women could be more hesitant to provide reliable and honest answers. Therefore, the healthcare center was only used to conduct surveys. In-depth interviews were only conducted at women's home. In addition, in order to get permission to ask questions at the healthcare center permission from the regional health bureau had to be established, after this was arranged the conduction of survey's started.

Moreover, the healthcare center registers pregnant women of all rural villages that fall under its administration. Therefore participant recruitment can be easily done through the registered women in the health centers. Nevertheless, registration might not be completely correct, therefore it is necessary to further research and look for participants that might not have been registered at the healthcare centers. Furthermore, on two occasions when employees of the HC were conducting home visits, structured observations took place by accompanying the HEWs, this also proved a fertile means of reaching participants.

Research-based recruitment

For this research multiple research methods were employed. Entailing that for this research surveys were conducted. However, some participants of this quantitative survey were also invited to partake in an in-depth interview. This mixed-methods approach was conducted to understand women's activity patterns in addition to a deeper understanding on their maternal health behavior, needs and experiences. Firstly surveys were conducted amongst women who were currently pregnant or had been in the past two years. Some of these participants were asked more in-depth questions resulting in an interview in addition to the survey questions.

Snowball sampling

In both villages the snowball sampling technique was applied, as this deemed very useful. After having conducted an in-depth interview participants were asked if there were any pregnant women living in the neighborhood willing to partake in our research. This often led to new participants.

Conclusion

All in all, this research includes 80 respondents, all of which were asked various survey questions. Using the research-based recruitment approach during the conducting of the survey questions, several participants were selected for in-depth interviews. These interviews occurred mostly in participant's households were they felt most comfortable. In order to get a deeper understanding concerning the Health provisions and health accessibility additional interviews with two Health Extension Workers were conducted and an interview with the manager of the Healthcare Center within our research field. As there is a large discrepancy between the previous traditional and now modern healthcare provided, this research also conducted an interview with a Traditional Birth Attendant who could offer more information concerning the traditional way in which she assisted during women's delivery. This resulted in a good overall insight into the differences between traditional care and the modern care provided at the healthcare center. Moreover, at the healthcare center the Health Extension Workers provide home-to-home visits to inform women concerning health related issues in the maternal period. On two occasions, structured observations were organized during these home-to-home visits in order to gain insight in how health issues were conveyed to the research population. Finally, an additional interview was conducted with a Network and Development Group leader concerning the formal constitution of network groups within the community and their means in disseminating information.

The following table depicts some general information concerning the main research population. Within these figures the data of the Health Extension Workers, TBA and Development and Network Group Leader were excluded, as they are not considered the main research sample but provided information supporting the overall picture and analysis. The table depicts general information concerning the women in this research such as age and education level.

Table 3. Personal Characteristics of respondents

Parameter	Categorization	Number	Percentage
Age	< 26	24	30
	26 – 30	37	46.25
	31 – 35	8	10
	36 – 40	11	13.75
Marital status	Married	75	93.75
	Divorced	5	6.25
Main Income source	Agriculture	63	78.75
	Cobble Stone	5	6.25
	House Construction	3	3.75
	Trading	5	6.25
	Safety Net Program	1	1.25
	Teacher	3	3.75
Educational Status	No formal education	43	53.75
	Grade 1 – 9	31	38.75
	Grade 10 >	4	5
	University	2	2.5

Table 3.: Personal Characteristics of Respondents

As becomes apparent in this table most women range between 26 and 30 years old. Of which, the dominant percentage is married with only 6.25% being divorced. Furthermore, as becomes apparent, the main source of income mostly is agriculture. However, most participants mention working in several sectors simultaneously such as agriculture in combination with cobblestone. Finally, most women did not enjoy a formal education and 38.75% of women stopped between 1st

and 9th grade. Entailing that they did not finish their primer education and in most cases have forgotten they literal skills. Only 2 participants graduated from the University and are currently employed in the formal educational sector.

Validity & reliability

Within the course of this research it became apparent that the research population unexpectedly could consider delivery and institutional birth a sensitive topic. This is mainly due to the locally implemented regulation prohibiting homebirth. The local community and pregnant women are aware that homebirth is frowned upon by local community leaders and health extension agents, ensuring that possibly not all women felt comfortable in discussing homebirth in all settings. This ensured for all the in-depth interviews to be conducted within the household itself without the presence of a health extension agent or local community leader as this could influence the data. Furthermore, several years ago homebirth was the standard; therefore it generally calmed women when firstly asked about past deliveries and births, as there was no judgment about homebirths several years ago. Thus, women could also not be penalized for their past homebirths but they might feel that recent homebirths would result in a financial penalty. Therefore, during the conducting of this research it was important to solely interview women at their own households and not at the healthcare center. In addition, to stress the fact that the interviews were conducted for research purposes instead of alliance with either the government or healthcare center. In conclusion, all possible measures were taken to ensure the best internal validity by ensuring valid answers through comforting the research population. In addition, various strategies for participant recruitment ensures for good research validity.

Limitations

However, within this research there were some limitations. A primer limitation to the research is the necessity to make use of a translator. Within Ethiopia there are more than 80 ethnic groups whom all have their own corresponding dialect. Within our research location the population speaks Tigrinya, the local language of the Tigray region. The translator for this research was contacted through the regional University namely Mekelle University. However, comprehending and speaking the English language remained with some difficulties. Therefore, as prior indicated, there is loss of data due to use of a translator when conducting surveys and in-depth interviews. In order to decrease the effect of this on our data as much as possible, the translator was thoroughly educated about the scope of the research and consequently the aim of the research.

Furthermore, survey and interview questions were written down in order to limit possible miscommunication. During this research another problem was encountered when using a translator. When approaching our research population the initial translator seemed somewhat intrusive nevertheless this was difficult to verify without speaking the local language. This amongst other things ensured us to reach for a new translator during our research. With the second translator women seemed more comfortable and his approach was more calming. Even though, the problem with the first translator was thereby quickly overcome it did point towards the difficulties in working with a translator.

Position of Researcher in the Field

The main difficulty within this research is therefore the language barrier, comprehending information and ensuring that women are comfortable enough to share information. Due to the language barrier it is sometimes difficult to establish connections with people in the field. Nevertheless, the second translator Amsalu, also proved a key informant, as he was familiar with the villages and rural community. During the fieldtrips, especially in Elkin, many people invited us for coffee and food. Even though sometimes a bit of an inconvenience, this proved very important in establishing connections with the women in the villages. Therefore, during this research we took this time to familiarize ourselves with the women and have some small-talk.

Furthermore, it was sometimes difficult to introduce the purpose of the study to the research villages because there was approval needed from the regional health bureau, a governmental institution, and the corresponding the Mekelle University (also a governmental organization) nevertheless this research was not aligned with the government. Therefore, during the research it was stressed that there was no alliance with the government, as this often seemed to make the respondents uncomfortable and unwilling to share information. However, the study was introduced as stating we are students from the Netherlands, conducting research for our master thesis.

In addition, being from 'the West' created a barrier between the sample population and ourselves as researchers. Most women were not used to seeing 'farenji' (local term for foreigner), which sometimes made women uncomfortable or shy in talking with us. A good way in coping with this was interacting with the children of the community who were always very curious in seeing farenji. Moreover, leading by example proved important in this case, as this research was started by interviewing some local leaders or important women in the community. If they were willing to be interviewed, than other women also followed. Finally, the data quickly portrayed less favorable outcomes than articulated by the Health Extension agents. This difference signaled that Health Extension Agents or Community leaders might want to portray the current state more

positively than reality. This recognition ensured for the data to be thoroughly checked by the research population in addition to asking follow-up questions checking the internal validity of the answers.

Reflection

As mentioned earlier, due to political reasons the research site had to be changed. The initial research location, Nekemte, was unachievable and unadvisable due to the political situation. Therefore, in order to complete a full research within the limited time scope quick response was necessary. Our local contact person and key informant Kebede Manjur largely made this adaptation smooth and unproblematic.

Furthermore, when conducting data, political issues unexpectedly, also played a role. It quickly became apparent that several issues are somewhat sensitive within the rural community due to local rules and regulations. As mentioned in the findings the local community prohibits the use of Traditional Birth Attendants and home delivery. This ensured that many respondents were hesitant in sharing information concerning their deliveries. During the collection of the data it was therefore very important that the women felt comfortable and free to speak. The women felt largely at ease in their own home, which ensured for most interviews to be conducted in the homes of women themselves. Furthermore, when questioning people from the Healthcare Center it quickly became apparent that data is more positively portrayed than reality. The Healthcare Center noted that no home deliveries have occurred in the last two years whereas participant information indicated that it did occur. Furthermore, the household size also was larger in our data than portrayed by the healthcare center. This, in our opinion, is due to government's efforts in family planning and regulation throughout Ethiopia.

Another difficult element within this research' data was the participant's age. During the conduction of this research it became apparent that it is common for mothers to not register their children or do this only when they're older. Also birthday's are not really celebrated therefore participants often do not know their age but merely estimate an age, this ensuring for the age of respondents to be somewhat unreliable. Unfortunately, there was little to be done to work around this.

Another difficulty within this research was working with a translator. This sometimes created difficulty in understanding the respondents as on occasion the translator had difficulty comprehending the question, especially if this question was not part of the survey or interview guide but came to mind spontaneously or due to previous comments made by the respondent. Also during the field research the initial translator TG had acquired another job opportunity, which made him unavailable to come to the field. This resulted in getting another translator

named Amsalu. Even though this was somewhat unexpected the change in translator actually proved positive for this research. It quickly became apparent that Amsalu was much more professional in approaching respondents which ensured that women largely felt more comfortable and thus shared more personal information. Especially considering the sensitivity of several topics concerning pregnant women this change between translators was much in advantage for the reliability of the data.

Finally, sometimes questions proved difficult for the respondents. Much of the interview and survey questions are targeted at women's daily activities and their pregnancy. These questions were often easily comprehendible. Nevertheless, questions aimed at understanding women's behavior have occasionally proved difficult for the respondents. On numerous occasions respondents cannot articulate the reason for certain behavior or recall time frames correctly. During the data collection we largely tried to solve this problem by asking questions in different ways and adding 'control questions' that allowed us to double check if previous stated answers were correct. All in all, the main difficulty in this research is therefore the language barrier, comprehending information and ensuring that women are comfortable enough to share information.

National Context

As mentioned in the methodology, this research was conducted in Tigray Ethiopia. In order to provide some deeper information concerning the context of this research firstly the national context will be described, including a short history, demographic information concerning Ethiopia as a country and the national Health Extension Program. After which, the regional context, more specifically to this research field will be explained.

History

Ethiopia is a land-locked country situated in Eastern Africa. Ethiopia is unique due to various factors. First of all, Ethiopia is said to be one of the world's oldest civilizations (UNDP, 2018). Secondly, contrary to other African countries Ethiopia is the only African country to maintain their freedom for colonial rule except for a short-lived Italian invasion. This was under the rule of Emperor Haile Selassie who was instated as emperor in 1930, after the Italians were defeated in 1941 Emperor Haile Selassie was reinstated in 1974. Haile Selassie gained fame due to his efforts in modernizing the country and considered a returned messiah by followers of the Rastafarian movement. Nevertheless, unrest due to the ethnic cleansing of the Harari people and the 1973 famine in Ethiopia, Haile Selassie was deposed in 1974 by a military group named the Derg, who established as a social state. The socialist state made reforms such as nationalization of property. However the socialist state collapsed in 1991 due to large-scale famines and refugee problems. In 1994 Ethiopia adopted a constitution and in 1995 Ethiopia's first multi-party elections were held. Though officially defined as democratic, elections maintained problematic. The general elections in 2005 resulted in a win for the Ethiopian People's Revolutionary Democratic Front. This created unrest and many protests due to allegations of a falsified win for the party. The Ethiopian People's Revolutionary Democratic Front with Meles Zenawi Asres as head and political leader remained in state from 1995 until his death in 2012 (CIA, 2018). From 2013 onward Mulatu Teshome Wirtu was president of Ethiopia, however during the conducting of this research the political unrest ensured for the country to declare a state of emergency and finally ensuring for the prime-minister to resign. Much of the political unrest was due to the fact that the current ruling party was from the Tigriyan ethnic group, which only makes up a small percentage of the Ethiopian population. Overall Ethiopia consists of over 80 ethnic groups with the two dominant groups being the Amhara and Oromo, nevertheless both having little representation in the

government. The numerous protests especially in the Oromo region ensured that the Mulatu resigned and declared a state of emergency entailing that the military now controls the state and any form of political protests are prohibited. After the presidents resignation a new prime minister was selected, this time from the Oromo ethnic group. The new prime minister, on numerous occasions, stated striving for a peaceful Ethiopia amongst its different ethnic civilizations in addition to reconciliation with its border country Eritrea. Nevertheless, because this new prime minister was only instated in March it is difficult to make claims about his political abilities.

Geography

Ethiopia with 1.13 million in square meter and 102.5 million in population is the second largest country of Africa. Ethiopia is surrounded by Sudan, Somalia, Kenya and Eritrea. The latter first was part of Ethiopia until they reached independence in 1993 following a referendum. The relations between Ethiopia and Eritrea remain unstable with a border war from 1999-2000 (BBC Country Profile, 2018). Currently there is no official conflict nevertheless relations remain tense. Furthermore, Ethiopia is a predominantly agricultural country – more than 80% of the population lives in rural areas – that is in the early stages of demographic transition. The highest population density is found in the capital city Addis Ababa that is the largest urbanized city of Ethiopia. The climate in Ethiopia varies greatly per region but, despite the dominant conception of extreme drought, is predominantly tropical (CIA, 2018).

Economy

Despite Ethiopia's major economic growth in recent years it remains one of the poorest countries with a per capita income of $660 (World Bank, 2017). The majority of its large population works in the agricultural sector. Nevertheless, the government is deeply involved in diversifying its economy and urbanizing the country. The government's aim is to achieve lower-middle-income status by 2025. This is driven by many investments in infrastructure, agriculture and service sector. The country also attracted many foreign direct investments from countries such as China (CIA, 2018). Furthermore, the dominant export product remains coffee beans, which makes up 41% of the total exports of Ethiopia, followed by dried legumes, 15% and Gold 7.5% (OEC, 2018). However, currently the government is trying to diversify the countries exportation products (CIA, 2018). All in all, there have been numerous achievements reached and progress made nevertheless Ethiopia still remains one of the poorest countries in the world. Elements such as maternal health and overall life expectancy remain extremely lacking and require improvements.

Famine

Ethiopia has been struck by multiple famines throughout their history. The overhand of the population is dependent on the agricultural sector with a large percentage being in the subsistence farming. This entailing that most of Ethiopia's population depend on their harvest for food and therefore are extremely vulnerable for harvest fails. Throughout history the international community had to provide (emergency) food aid several times. Iconic photos portrayed in international media have created an image of extreme hunger and poverty in Ethiopia. Unfortunately, despite the economic growth food security remains a problem (CIA, 2018).

HEP program

As mentioned, the remaining low utilization of modern health facilities during pregnancy, especially within the rural population, has already ensured for several projects in Ethiopia aimed to increase maternal health. A great example is the HEP Program, which stands for the Health Extension Program. The HEP is a community-based program of the Ethiopian government launched in 2003. The aim of the program is to achieve universal coverage of primary health care among its rural population. The overall goal of HEP is to reduce maternal and child morbidity in Ethiopia but also encourages dissemination of health knowledge and adoption of hygiene practices and appropriate health-seeking behavior by professionals. The HEP program is developed in a context where there are large differences between rural and urban population and educated and non-educated people, the program seeks to decrease these differences (Wang, Tesfaye, Ramana & Chekagn, 2016). As described by San Sebastian & Lemma "The aim of this new community-based health care delivery system is to improve access and equity in health care through a focus on sustained preventive health actions and increased health awareness" (2010, p. 2).

The program created health posts throughout the country each aimed at serving approximately 5000 people and staffed by two Health Extension Workers (HEWs). The HEWs are the key drivers behind the program. Two HEWs are deployed to a kebele, or subdistrict which is an administrative unit bringing together 2 to 3 villages with a combined population of around 5000, usually within walking distance of each other. Within the Kebele the HEWs serve around 3000-5000 people per health post. The HEWs are recruited based on their education, capacity to speak the local language and willingness to remain in the village and serve communities (Wang,

Tesfaye, Ramana & Chekagn, 2016). These HEWs have a high school degree in addition to an extra one-year training. This training program includes 16 topics that fall under 5 components. The components are as follows 1) Hygiene and environmental sanitation (example construction of a toilet), 2) family health services (family planning and vaccination), 3) disease prevention and control (HIV, TB and malaria), 4) Health education and communication and 5) Nutrition. In addition, voluntary health workers (VHWs) consisting of community health workers and traditional birth attendants work in collaboration with the HEWs in health education and community awareness (San Sebastian & Lemma, 2010).

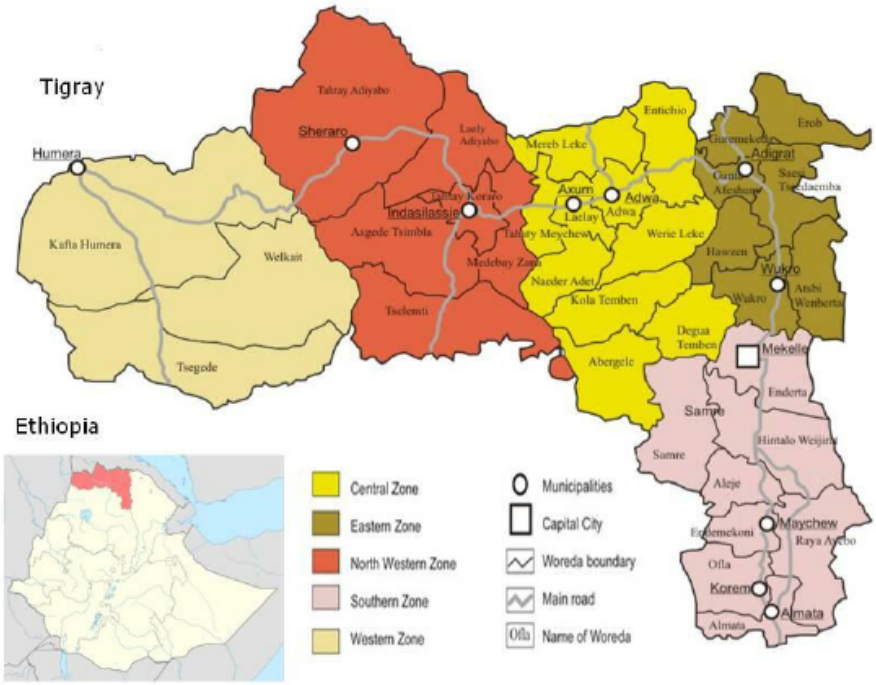
The HEP program is a community-based program that ensures that the HEWs live amongst the local community and from within the community educate the people about health and health awareness. In addition, the HEWs train model families whom in return set an example for other community members. Model families are thus households that are trained in maternal health and other health education such as sanitation, in which these families can lead by example by creating a toilet within their home and finally are able to influence relatives and neighbors to adopt these same practices. Households that constitute as good candidates for a model household are for example "in the agricultural extension program, traditional birth attendants, volunteer community health workers, or health focal persons in the kebele, because it is believed they are ready for change and can also influence the behavior and practice of community members" (Wang, Tesfaye, Ramana & Chekagn, 2016, p. 27).

Regional context

Ethiopia being the second largest country in Africa in addition to the numerous different ethnic groups calls for more insight specific to the regional context within the scope of this research. This chapter will therefore provide more information distinct to the Tigray region of Ethiopia and respectively the research area.

Tigray

The state of Tigray is situated in the North of Ethiopia and consists of 4 administrative zones, 35 Woreda's and 74 towns. The capital city of Tigray is Mekelle. The state of Tigray is located in the North of Ethiopia sharing borders with Eritrea, the State of Afar, Amhara and the republic of Sudan. The area composes an estimate of 80,000 square kilometers. Population figures are outdated with latest official data noted in 1994 (Ethiopia Government, 2018). In line with the rest of Ethiopia, most Tigrayans are reliant on agriculture for their source of income; approximately 83% of the population of Tigray are farmers. The main agricultural products are teff, wheat and barley. Teff is used to make injera, a sourdough-risen flatbread, which is the signature dish of Ethiopia. The following figure depicts the Tigray region, its location within Ethiopia and the corresponding zones and Woreda's within Tigray.



Map 1.: Tigray region per zone and Woreda.

Mere-Mieti & Elkin

Mere-Mieti and Elkin are both villages part of the Woreda Enderta, in the Southern zone of Tigray. The Woreda consist of 17 Kebele's, which in return consists of several villages. The Kebele (peasant association) or administrative area of the research field is named Didiba. The name 'Didiba' is the collective name for the 4 villages it encompasses, of which the kebele village or administrative village is Mere-Mieti. This administrative area consists of four sub-villages; 1) Mere Mieti 2) Elkin 3) My Kayah and 4) Adikelkel. From these villages Mere-Mieti serves as the main administrative village. Several facilities such as the Healthcare center of Mere-Mieti also serve the other three villages part of the overarching Didiba. In total Mere-Mieti consists of 2053 inhabitants, of which 1001 male and 1052 female. Which encompasses 506 households. The population size of Elkin entails 2903 people, which encompasses 486 households. The number of inhabitants is retracted from information of the Healthcare center, unfortunately there is no official data on the amount of inhabitants of both villages. Therefore, this data cannot be deemed completely reliable but is provided in order to achieve a picture of the approximate size of both villages. The following image serves as a visual tool to explain the geographical hierarchal division of Ethiopia, from the national to local level respectively.

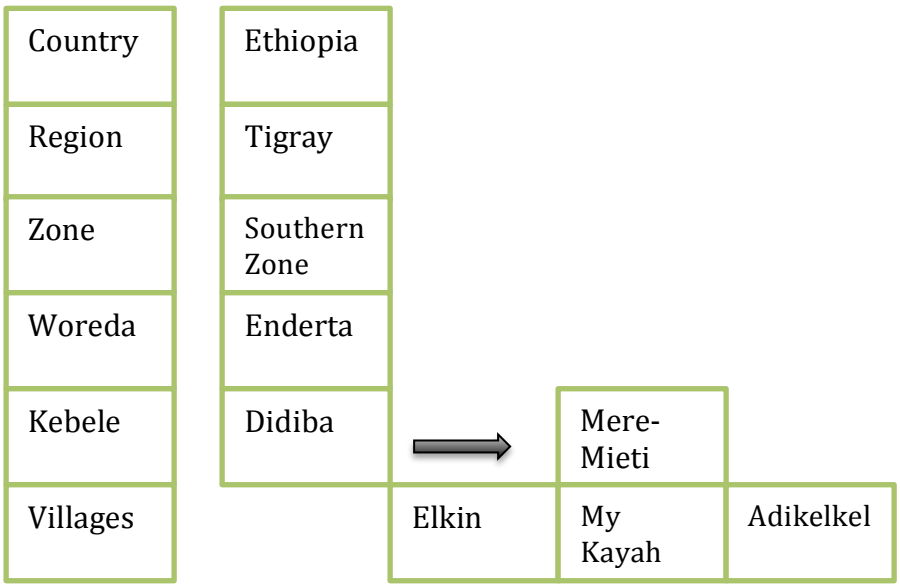


Figure 2: Geographical Hierarchy Research Location

Religion

Throughout Ethiopia it is clearly shown that religion play's an important role in society. Even more deprived regions often have a well-maintained church or mosque. In this case, the Tigray region is overwhelmingly Christian Orthodox, in both research sites the inhabitants are 100% Christian-Orthodox. This is also the dominant religion throughout Ethiopia. Within Orthodox-Christianity there are a lot of different religious day's, which entails that on these days people generally do not work but predominantly visit church. In Ethiopian Christian Orthodox Church most day's of the month correspond to a particular saint in addition to yearly feasts such as Timkat, Fasika and Christmas. Within this research field monthly religious day's were every 5th, 7th, 12th 21st, 27th and 29th of the month. As this comprises many day's each month households are generally not financially able to celebrate all day's so therefore limit celebrations to one or two day's per month per household. Nevertheless, even though not celebrated by all, most of the households and community members do refrain from work on said day's. In addition, every Wednesday and Friday are fasting day's, entailing that it is prohibited to eat meat. Furthermore there is also fasting period which starts 55 day's before Easter until Easter (Fasika). Moreover, Sunday's are considered non-working days and therefore also mostly spent in church.

Agriculture

Agriculture in the Tigray region in the Northern part of Ethiopia is extremely difficult, with periods of severe drought and crop production which in most areas does not exceed subsistence levels (Di Falco, Chavas & Smale, 2007). As mentioned by the Ethiopian Government website; "Centuries of erosion, deforestation and overgrazing have left the region with dry and treeless plains, hills and plateau" (2018). Over the years there have been various efforts to rehabilitate the environment nevertheless, it remains one of the most degraded areas in Ethiopia (Di Falco, Chavas & Smale, 2007). Nevertheless, agriculture being the main source of income for the dominant part of Ethiopians (CIA, 2018), this poses a problem for the people of Tigray.

This research was more specifically conducted in the Enderta Woreda of the Tigray region as depicted in the map above. This is the Woreda surrounding and including the capital city Mekelle. Within this Woreda the research was conducted in two villages namely Mere-Mieti and Elkin. Both villages are, as mentioned, by previous research on agriculture in the Tigray region, subjected to drought and land degradation. In the research field there are two different types of agricultural land namely irrigated land and rain-fed. Within the two research villages in total 76% was dependent on agriculture for their main source of income. This varied somewhat between

both villages in which Mere-Mieti had 80% rely on agriculture and Elkin 72%, of the respondents in total only 17.5% had irrigation land.

This section will further aim to clarify the differences in land and the accompanying consequences to the households. Rain fed farming is the dominant form of farming in the research area and constitutes the production of various grains such as teff, wheat and barley, which can be harvested once per year. The grains thus are dependent on the rainy season for the needed water. Mostly rain fed farming is conducted on a small-scale resulting in only subsistence farming with little to no surplus. Irrigation farming on the other hand can be harvested three times per year as it has a consequent supply of water. Crops produced on irrigated land are often referred to as cash crops as they are often produced for trade purposes in addition to own consumption. Irrigation land, due to the increased harvesting opportunities, can be considered more labor intensive however also generating more income. Crops produced on irrigation land vary from lettuce to carrots tomato's and onion, all varying in their sowing and harvesting time. Nevertheless, only a small amount of household own their own irrigation land, the predominant form remains rain fed agriculture. The following table depicts the various agricultural seasons for rain fed land in addition to the dry and rainy season.

Seasonal Calendar Rain fed Agriculture												
	June	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	March	April	May
Dry season/Rain Season												
Plowing	✓									✓	✓	✓
Sowing	✓	✓										✓
Weeding			✓	✓								
Harvesting					✓	✓						

Table 4.: Seasonal calendar for rain fed agriculture.

The table depicts the various agricultural activities corresponding to rain fed farming. It is important to mention the seasons for rain fed agriculture. Since, agriculture, for the large part of the population, is their main source of income, the various seasons influence the activities of the rural population. Moreover, as becomes clear land preparation, or ploughing the land starts in March until June after which planting follows. Followed by weeding, which refers to the eradicating of excess undesired plants and finally the harvesting in which the crops are collected from the field. Within these agricultural activities, plowing is solely prescribed to men and

weeding and harvesting are generally considered as female activities. This will be more elaborated upon in further chapters.

The HEP in Tigray

As mentioned in the previous chapter, the HEP program is a national governmental initiative in order to provide modern healthcare for the rural population of Ethiopia. The HEP program being launched in 2003 and implemented in the years thereafter is of course also present in the Tigray region. Health officials visited the region in 2011 in order to observe and discipline the local HEWs to have regular meetings with the community. In addition, during this visit the health officials observed some innovations introduced by the women of communities, all of which positively influence women's choice of place for childbirth in this region. These observations are as follows:

1) Providing porridge at the health facilities. Within the Tigray region it is a deeply-routed cultural and traditional belief that a mother needs to eat porridge after delivery. As this is a long practiced tradition, not having access to porridge directly after delivery can prove a reason for women not to deliver their child at the healthcare center. In the Tigray region women generally belief that evil things could happen to the mother or her newborn child if this is not put to practice. Hence, the health workers implemented that porridge would be provided at the healthcare center itself, this abolished another barrier for women not to deliver at the healthcare center.
2) The use of a traditional ambulance. The Tigray region has many difficulties in accessing certain areas due to lack of roads and a rocky and mountain rich environment. The community and health workers introduced the 'traditional ambulance', which is a stretcher and organized youth to carry a laboring mother if this is in a area unable to reach with an ambulance.
3) Monthly meetings with all pregnant women initiated by the HEWs and midwives.
4) Dialogues with the traditional birth attendants. Since the TBAs are deeply routed within the community it can be easier for them to persuade women to deliver their babies at the healthcare center rather than at home (Wang, Tesfaye, Ramana & Chekagn, 2016, p. 27).

HEP in Mere-Mieti & Elkin

As mentioned, the HEP program was also instated in Tigray and thus also visible within this research area entailing the villages Mere-Mieti and Elkin. Currently there are 26 Health Extension Workers present within the 17 Kebele's (administrative units) of the Enderta Woreda or district. This is half of the expected number for this district, thus indicating understaffing and a heavy

workload for the HEW's whom are employed in this region. For the administrative village Mere-Mieti there are two Health Extension Workers in addition to several Health Extension Experts whom are always present at the Healthcare Center and the manager of the Healthcare Center. As Mere-Mieti serves as the administrative village with a healthcare center, this healthcare center serves as the main point from which the Health Extension Agents work. Nevertheless, the Health Extension Workers, as the drivers of the HEP program, must be differentiated from the Health Extension Experts whom are the midwives or skilled birth attendants and employed within the healthcare center through the government. So, the healthcare center strictly serves as a stable working area for the HEWs to work from instead of a health post. The HEWs and HEE thus also work closely together nevertheless, for the HEW the sole purpose is to create awareness and provide preventive health measures such as vaccinations. Medical interventions and birth assistance is therefore solely performed by Health Extension Experts. Within Elkin village, the expectation of the HEP program is that there would be a health post and two HEWs who serve the village. Nevertheless, unfortunately Elkin consists of 1 HEW and does not have a health post and therefore is mostly reliant on the elementary school as a meeting point or the healthcare center of Mere-Mieti. This quickly hints towards a problem of understaffing, which will be elaborated upon further in this research.

Furthermore, interestingly the points addressed by the World Bank Study of the Ethiopian Health Extension Program were also observed in this field research. Within the field research providing porridge also quickly arose as an important aspect and motivator for women to deliver at the HC. In addition the traditional ambulance and the allocation of local young men who were specifically appointed to carry laboring women was also shown in this research. Nevertheless, in-depth interviews with respondents have indicated that within the rural community there is a common conception that whenever you are carried to the HC on a traditional ambulance you will exit the same way. Thus, the traditional ambulance enforces the connotation of death amongst the local community, therefore it is rarely utilized. Moreover, monthly meetings with women in the community were organized however attendance seemed problematic. Finally, the TBA's were still involved in women's pregnancy process and in dialogue with the local HEW's. This will be further elaborated in the following chapters, nevertheless poses an interesting insight into what is already done by the Ethiopian government, HEWs and consequently local and community input. Furthermore, in addition to some innovations perceived by health officials during their visit in 2011, this research found new innovations implemented by the HEWs themselves. Within this research area, HEW found that homebirths still remained therefore creating a new incentive to deliver at the healthcare center the HEW instated a local fine of 500 birr if women delivered their child at home. The local regulation has not been implemented yet nevertheless the community is aware of the regulation.

Healthcare Center

Within this research field, the Healthcare Center ensures an important aspect within maternal health of the community members. The health care center in Mere-Mieti was established in 2005, two years after the Health Extension Workers arrived in the village. HEWs refer to Health Extension Workers whom are primarily working within the community and whose job is to inform educate and raise awareness concerning several health topics within the community. Health Extension Experts refer to medically trained health professionals or in this case midwives. Finally, in 2010 an ambulance arrived in order to serve this Healthcare Center and all the surrounding villages within its district. This accounts for a total of 17 Kebele's, the scope therefore of which the ambulance is used for exceeds its capacity, and this is also shown through experiences of women depicted in the following chapter. Furthermore, the healthcare center severs as a meeting point for the Health Extension Agents, including HEW and HEE. In addition, meetings are held at the HC with the local community leaders. The following chapter will elaborate more on the structure of these meetings.

Community Networks

The dissemination of information within this region goes through both informal and formal networks. Within the community Development Groups were established in order to easily disseminate new information concerning both maternal and general health issues. Within the community there is a community network group consisting of 5 women, of these one woman is considered community network group leader. Finally six community network groups comprise of one Development Network group consequently led by a Development Network Group leader. When disseminating information the Health Extension Workers plan sessions with four development group leaders who each represent 30 women, thus in total 120 women. Consequently each development group meets in which each development group leader conveys new information retrieved from the Health Extension Agents. Community Network Groups, compromising of five women, finally can discuss this more elaborately if necessary.

An in-depth interview with a development network group leader gave more insight into the organizing of these community network structures. She mentioned; "The main founders were agricultural extension workers. Firstly, the men participated. The women did not visit the meetings but stayed at home, because the men are the household leaders. However, the man did not share the information with their wives, therefore the women also partook in the meetings and they were grouped together. But when they were grouped together the women did not participate in the group discussions. Therefore, they decided to divide the group into men &

women. Because of this division the women could now discuss problems like bleeding during pregnancy and other health issues. So still sometimes agricultural issues are discussed but it is now mostly used for health issues" (Development Group Leader, April 17th, Elkin).
The Development Network Groups thus mostly meet "based upon new information from the government or health institution or government changes in regulations or by requests of community leaders like Alemat" (Development Group Leader, April 17th, Elkin). Thus as becomes apparent the community has a relatively efficient system in disseminating information and thereby creating awareness concerning new health related issues. Nevertheless, the HEA do express some issues namely, due overtime the community is losing the sense of importance to meet to discuss health issues buy stating "At the beginning the information is for the first time, however after a while we are not speaking new agenda or information, so it becomes boring to them and they do not want to listen anymore" (HEW, May 4th 2018, Mere-Mieti). The HEW elaborates by stating: "repeated meeting with network group leaders or people within the community are not good. We should use other options like holy day or religious day's. We should go to where the people themselves are, where they naturally can be found, otherwise people will not show up for the meetings." This providing a natural solution to the lack of attendance in current meetings, especially since the Ethiopian Christian Orthodox Church has many religious day's, this proves for an interesting solution.

Conclusion

All things considered, there are numerous attempts in improving the maternal health and especially institutional delivery rate within the Tigray region. Especially, the HEP program is deeply invested within the local community and serves as basic healthcare provision next to its main aim providing educational services and awareness trainings. Nevertheless, it often remains unclear whether this program or programs of similar nature, directly correspond to women's lives and consequently their needs. As shortly touched upon through the dissemination of health information through the Network groups within the community, the lack of attendance in recent meetings in addition to the suggestion of the HEW to disseminate information during religious celebration, hints towards a mismatch between the HEP and the local community. Therefore, it is important to further elaborate on this. The following chapter as a result will start by reporting women's lives referring to their daily activities and how these are affected during their pregnancy in order to achieve a clear picture on the care needs of pregnant women. Furthermore, this research will also go more into depth concerning women's experiences with the care they received and consequently the healthcare center.

Activities and activity shifts

General Findings

In order to grasp the day-to-day life of the women in the Northern part of Ethiopia and more specifically the villages Mere-Mieti and Elkin, it is important to understand the overall environment and societal structures the women live in. Therefore, the first step within this research was targeted to better understand the formal and informal rules and behaviors within both villages.

Households

First of all, Ethiopia is a patriarchal society, in which generally men have moral authority and privilege within the society (UNFPA, 2018). This is portrayed through the high amount of male-led household structures. Within this research there were only two households led by females, the rest all considered the man as the household head. Consequently, almost all our participants were married. As mentioned, religion plays a significant part in Ethiopian culture, especially in rural villages. Orthodox Christianity being the religion in this research field marriage is deemed an important aspect. In result, divorce rates, though increasing, remain low explaining the small amount of female-led households. In addition, households generally consist of an average of 5.5 people. Thus, mother father and on average 3 to 4 children however there are extreme cases were the household size consists of 12 people or starting families were it is only 3. Important to mention also is that in recent years there have been several governmental efforts to increase reproductive planning materials and thereby decreasing the average household size. Therefore, actual figures, as portrayed in this research, could be somewhat higher as participants might have indicated a lower household size than reality.

Gender Roles

Within agricultural activities as with household activities there are specific roles ascribed to gender. First of all, within household activities almost all tasks are ascribed to women. Making coffee, cleaning, cooking but also fetching water and firewood (which requires heavy lifting) are described as female activities. In addition to raising the children and going to the market. Concerning agricultural activities women only work during harvesting and weeding season. In

harvesting season women are generally the ones collecting and also often carrying the harvest. Activities ascribed to men are agricultural activities such as plowing the land and keeping the animals. Furthermore, other work activities such as working in cobblestone and selling or sewing clothes are also only ascribed to men.

Within families or household structures, the first-born boy helps the father in agricultural activities and the first-born girl helps the mother in household activities. If a household only has males, boys can help with fetching water and collecting firewood. However they will not help with female activities such as cooking.

Activity Patterns

In order to grasp whether health programs such as the HEP adhere to the lives and needs of women in rural villages of Tigray it is first and foremost important to shed some light onto the daily lives of women and their main activities. This chapter therefore provides more information concerning the lives of rural women, their main daily activities and whether women experience a shift in activity patterns during their pregnancy.

"Household activities are not seen & considered as meaningless but they are actually very tiring" (Respondent Information, March 12, 2018, Elkin).

Concerning the activity patterns of women, this research found that as expected women predominantly focus on household activities. Such household activities include cooking, cleaning, fetching water, collecting firewood and going to the market. As mentioned in the quote above, household tasks, especially in this rural context should not be underestimated. Due to the difference in accessibility of facilities between the two villages this also results in some differences in activity patterns. The main difference being that the market, which is every Tuesday in Mere-Mieti, is needed to purchase or trade several foods or cereals. Women living in Elkin therefore have to walk a minimum of 1 hour to access the market and therefore that week's groceries or household supplies. Furthermore there is generally a consensus to be found in the women's activity patterns. Most women described they wake up during sunrise which is between 06:00 and 07:00 and go to bed around 22:00. The women describe being most active during the day when there is still daylight. The household activities are described as following (not necessarily in this order) but compromise on average 12 hours of work:

Main activities	Occurrence	Approximate hours of work
Waking up 06:00		
Fetching water	Daily	*1 – 3 hours*
Making Coffee	Daily	*0.5 - 1 hours*
Providing breakfast	Daily	*1 – 2 hours*
Cleaning house/floor	Daily	*All day*
Washing children	Daily – Once in 3 day's	*0.5 - 1 hours*
Washing clothes	Once in 3-4 day's	*2 – 3 hours*
Preparing lunch	Daily	*1 – 2 hours*
Cleaning Grains	Daily	*Throughout the day*
Drying & Collecting animal dung	Daily	*Throughout the day*
Managing children	Daily	*All day*
Providing Dinner	Daily	*1 – 2 hours*
Going to bed 22:00		
Crushing Grain	Every 3 months	*2 – 3 hours*
Going to the Market	Every Thursday	*2 – 5 hours*
Optional: Sewing local material		*Throughout the day*

Table 5.: Main daily activities women of Mere-Mieti & Elkin.

For example tasks such as crushing grain in the local grainer in Elkin or Mere-Mieti is done once every 3 months. Every week on Tuesday women or their husbands go to the market to either purchase food/products or trade. Most families predominantly eat bread and injera (local flat bread), with occasionally vegetables such as tomato, carrot, onion and cabbage.

As, becomes clear from the table women experience long domestic working hours with tasks such as fetching water compromising of 1-3 hours, depending on their position to the nearest water pump. Generally, within the Global South women experience a heavy domestic workload with women working even up to 16 hours per day, performing many tasks at the same time however remaining unpaid. The domestic workload however, in relation to farmland activities, does not decrease. Therefore, especially in addition to agricultural activities household activities can be time consuming, heavy and have negative health and nutrition impacts (Cooke, 2016).

Agriculture

So next to domestic activities 65% of the women also work in agriculture. As mentioned in the previous section, agricultural labor for rain fed farming is seasonal. Thus, all women only partake in harvesting and weeding activities. Concerning the agricultural labor, as with other tasks there are clear gender roles ascribed to either women or men. In agricultural this entails that women do the harvesting and weeding whereas men plough the land. As mentioned earlier, weeding season for rain-fed agriculture is from August to September and harvesting is done from October until November. Thus, during the period this research is conducted there are no agricultural activities for households that are dependent on rain-fed agriculture. In total 16.25% of women work in irrigation, 2.5% in Elkin and 13.75% in Mere-Mieti, these seasons depend on the crop type growing on the land, however as for rain fed agriculture, women still solely work during harvesting and weeding. On average rain fed farming encompasses 6-10 working days during weeding season and 8-10 days during harvesting season annually, for irrigation land this accounts approximately 10 working days per season per crop. In which weeding entails removing residual plants or weeds and during harvesting women collect the harvest into large bags in addition to, on occasion, carrying the harvest. An agricultural working day lasts from approximately from 07:00-17:00, depending on the household activities women reduce agricultural working hours, in order to prepare dinner for example. Or women intensify their domestic work, such as cooking several days before agricultural work starts. Thus, as the average domestic working hours are 12 hours per day, including agricultural activities can be considered labor intensive. However, though labor intensive the agricultural work performed by women is highly seasonal, as rain fed farming on average only accounts for maximum of 20 working days in total per year. Predominant daily activities therefore mostly refer to household tasks as described above.

Activity (shift) during pregnancy

Shifts in activity patterns during women's pregnancy could hint at the possible need for help or care with some activities during this period. Therefore this study will further analyze shifts in activities during women's pregnancy and after in trying to understand their needs and how these are fulfilled. Overall, this research portrays that there are several shifts in activity patterns during women's pregnancy and shortly after. The common conception about pregnant women in the Global South is one where women do not reduce their workload until delivery and immediately return to their normal work pattern after delivery. This conception, if proven accurate, could have consequences for the health of both mother and child. Nevertheless, elements such as social capital are neglected in this line of thought. In-depth interviews with women concerning their activity patterns and community help indicate that there is a strong sense of community and social capital within the villages. Previous research by Agampodi, Rheinländer, Agampodi, Glozier & Siribaddana (2017) states the positive influence social capital can have on women's maternal health. The women in this research conveyed that they generally fulfilled the household activities for the larger part themselves throughout their pregnancy, in which they did the cooking and cleaning. Nevertheless, reaching the final stages of the pregnancy women mentioned reducing their workload. Reduced workload concerning household activities mostly entails that activities such as fetching water, fetching firewood and going to the market which can all be described as highly energy consuming are done by either the children, neighbors or the husband. The shift in activity towards other community members indicates strong community ties between women especially their direct neighbors. In addition, this shift in activity patterns towards family or community members can have positive influences on women's maternal health considering a heavy workload can have negative impacts on women's nutritional status (Lukmanji, 1992). Therefore, especially during a fragile period such as during a pregnancy, shifting a heavy workload towards others can benefit women's health status.

Within this research women expressed various possible structures. First of all, a special case is made for women who have their first child. Traditionally women who will deliver their first child have to deliver this child at their parents' home. Even though currently women are changing their behavior from homebirth to institutional deliveries, tradition remains that women move into their parent's home where their mother will care for them. Thus, entailing that in the last weeks leading up to the delivery, the household activities shift primarily to the mother. This is expressed by the following quote: *"During my pregnancy I mostly received help from my mother, because it was my first pregnancy I stayed at my mothers' house 1 month before delivery. In this month I didn't*

do any household activities at all, everything was provided by my mother" (Respondent Information 19, April 17, Elkin).

Concerning other children women remain in their own home with their husbands during the pregnancy. In several cases respondents mentioned sisters moving in the household in order to help with household activities. This is shown in the following quote: *"During my pregnancy I received help from my sister (16), she moved in 1 month before delivery and will stay 1 month after delivery. She is helping with household activities such as making coffee." (Making coffee during interview) (Respondent Information 6, Elkin, March 8)*

In such constructions were the sister moves in, these are generally younger, as in the case of the given example, as the sisters do not have families themselves they have the ability to provide care to their direct family members when needed. Sisters of participants and daughters whom function as primary caregiver range in age from 6 to 19 years old. Often this entails that during this period children stop their schooling in order to give care to their sister or mother after delivery. The amount of time family members stay to ensure care ranges from 1 week to 1 month.

In the cases were respondents mention their mother moved in this generally lasted 1 or 2 weeks, as their mother also had a household to run, in cases of sisters moving in this generally entails a longer period going up to 1 month. As households generally consist of 4-5 children, this mostly ensures that households comprise of more than 1 female. Ensuring that when one female leaves the house to take care of their sister, consequently the other female in the house takes over the household tasks in her absence. Other participants mention their daughters being prime caregivers during their pregnancy. For example a respondent mentioned: *"Especially my oldest girl is the primary care giver who fulfills tasks such as fetching water and going to the market, making Injera and cleaning the house now that I am pregnant." (Respondent Information 2, Elkin, February 28th).*

Nevertheless, of course not all participants have daughters or daughters whom are old enough to help with household tasks. Thus women also often resort to their own mother during their pregnancy, either solely or, more often, in combination with other family members. This is shown through the following respondent information: *"During my pregnancy I reduced my workload starting the 8th month of my pregnancy. In this period my mother visited once per week and then she went to the market (Tuesday), the grainer if this was necessary, collect animal dung and fetched water" (Respondent Information, 11 Elkin, March 8).* In this case the mother of the respondent visited solely to perform high energy consuming tasks such as going to the market & going to the grainer. Other, less difficult household tasks such as cooking were left for the respondent herself. In some cases however, both mother and daughters were asked for help, as shown by the following respondent: *"During my entire pregnancy I reduced my workload, for*

example fetching water is done by my daughter or husband. Also my daughter for example washes the clothes in the river. Two months before my pregnancy I take complete rest until the epiphany. In this time, my daughter and mother (primarily) will help with cooking and making coffee. Also neighbors and husband help with some tasks. (Respondent Information 12, March 12, Elkin).

All passages convey the message that women generally resort to their direct family for help with household tasks, especially during the last phases of their pregnancy. However neighbors also play an important role in reducing the workloads of women during their pregnancy. As they might not be dominant caregivers neighbors in both villages make up an important part by often helping with several household tasks. This is in line with previous research by Agampodi et al., (2017) which found that communities rely a lot on neighborhood cohesion and individual social capital especially during pregnancies. During their pregnancy, women largely made use of social capital through family members, close friends relatives and individuals for their direct neighborhood. The impact of social capital, such as TBA's and family members, but also community and neighborhood support during women's pregnancies is therefore very important. In addition, social capital and strong social networks were seen to have positive influences on pregnancy outcomes as they reduce stress, which increases women's maternal health status. A respondent from Elkin clearly expressed this by stating: *"There is informal help by the community like help with fetching water by the neighbors. Also with crushing grain they will help me, but I also have a donkey that helps me with the heavy lifting. They started helping after 7 months into my pregnancy. The Neighbors come by regularly and ask me about my health status. How am I feeling etc." (Respondent Information 25, May 3rd, Elkin).*

Nevertheless, there are of course examples of respondents that receive little to no help. This can be either because of a lack of direct family members like a mother, siblings or daughters, unwillingness of the husband to help or no close connection with the neighbors. The following passage portrays this: *"I receive no help with my daily activities because the children are in school and my husband is working. Only sometimes my neighbors help and sometimes my sister helps, who also lives in Elkin. However, I still do most household activities myself until the delivery, I was just fetching water this is very tiring for me." (Respondent Information 18, April 18th, Mere-Mieti).*

In general, the in-depth interviews convey ideas of strong social capital however passages such as the latter convey a need for help. Domestic work as expressed in the aforementioned quote can be very energy consuming and have negative effects for women's nutritional status especially in vulnerable times such as during a pregnancy (Cooke 2016; Lowe et al., 2016). In cases where there is no social capital or direct family to rely on, this can result in an extreme workload for the pregnant mother.

Concerning agricultural activities women generally mention stopping their agricultural activities completely or after 5 to 6 months into their pregnancy. Women express activities such as weeding and harvesting become difficult due to long days and postures like kneeling, which is difficult to do in the later term of your pregnancy. A respondent mentions, *"When the size of the child increases it effects my movement. Therefore I had to stop agricultural work when 5 months pregnant " (Respondent Information 24, May 2nd, Elkin).*

Many women also reveal stopping agricultural work for their entire pregnancy: *"During my pregnancy I do not do agriculture work at all. This work is fulfilled by family (brothers etc.) and if this is not enough we will hire daily labor (Respondent Information 9, Elkin, March 8).* Thus, despite common notions of women in Developing Countries such as Ethiopia, doing hard agricultural labor until their delivery, this research portrays a completely different picture. In total 35.8% of the women who normally worked in agriculture did not perform any agricultural activities during their pregnancy. An additional 33.9% of women stopped in the 5th month of their pregnancy or before, only 30.3% of women worked until the 6th month of their pregnancy or after. The activities are then shifted towards either 1) children or 2) other community and/or family members or 3) daily laborers. Preferred choice for fulfilling agricultural activities is children, as these do not require extra payment. If the children are not old enough or parents believe they should focus on school often other community members or family members such as brothers are asked for agricultural activities. Finally, households can hire daily laborers to perform agricultural activities, if family members are not able to perform such tasks. Nevertheless, daily laborers cost 100 birr per day if male and 70 per day if female, therefore due to the economic status of many households the work of children or other family members is preferred.

Still, the ability of shifting agricultural activities to a third party is largely dependent on a household economic status. Therefore, in cases where households have a low economic status women are, in some cases, forced to work labor-intensive agricultural work during the final phases of their pregnancy. This can have negative effects to the maternal health of the mother and again, as with labor-intensive domestic tasks, calls for help. As, mentioned labor-intensive activities such as domestic work like fetching water or agricultural labor, especially in the final phases of a pregnancy can have negative effects on women's nutritional status, which is especially harmful during a pregnancy. Therefore, despite most respondents mention decreasing labor-intensive activities in the latest stages of their pregnancy, some cases still call for extra care.

Activity (shift) after delivery

During the pregnancy respondent information already indicated that women in most cases reduce their activities and shift high-energy consuming tasks towards other family members or neighbors. Nevertheless, after pregnancy another dynamic occurs. First of all, traditionally, after giving birth the women's mother, thus the child's grandmother generally moves in for a minimum of one week. In the case of the first-born child, tradition dictates that this child should be born at your parent's home. Nevertheless, recent shifts in traditions surrounding homebirth and local regulations concerning homebirth are changing this.

For the second or third child deliveries, it is tradition that the grandmother will move in for a minimum of 1 week, but preferably until the child's baptism in order to take care of the mother. The activity patterns of women in most cases shift directly towards their mother who performs all household activities during her stay. This research found that 68% rely primarily on their mother who moves in for at least 1 week minimum, however in most cases ranging between 2 weeks until the epiphany celebration. The primer care after delivery is thus traditionally shifted towards the now grandmother. As described in the following passage: *"Currently now my mother and mother-in-law help me. They do everything, they cook, fetch water, and welcome visitors. Also my sister helps but she is now in school." (Respondent Information 24, May 2nd, Elkin).*

As mentioned here, the household activities are completely shifted towards the mother and mother-in-law. Most respondents expressed relying on their mother for all household tasks as they take rest after the delivery. Previous research also shows the importance of grandmothers indicating that the help of grandmothers by reducing workloads of mothers decreases death risks and improves children's level of wellbeing (Gibson & Mace, 2005). In this case the mothers lack of ability to fulfill certain activities or household tasks, ensures for grandmothers to perform such tasks. Often this is in combination with other family members as shown in the previous quote. Nevertheless, there are examples when respondents lack other family members like daughters or sisters to help after the delivery. As a respondent mentioned: *"I have only brothers and no sisters or daughters. So I only have my mother that can help me. Therefore, she stay's for 1 month."* (Respondent Information 15, April 18th, Mere-Mieti).

This passage clearly portrays that there are mostly solutions from within a family or community. As described, there are no other especially female family members to help with the household activities, which ensures that the mother stays for a longer period of time. Thereby, this quote also references to the importance of siblings concerning care after delivery. Actually, in 11% of the cases a sister moves in immediately after delivery in order to help with the household activities. In all cases, the sister moved in because either the mother was deceased or lived far

away limiting the mother in moving in to take care of her daughter. In such cases, as conveyed in multiple in-depth interviews, the sister take's over the role as the primer caregiver. A participant stated the following: *"After my delivery I will rest for one month. My sister will move in for this month and help with household activities. My husband will than do tasks like fetching water, going to the grainer and going to the market."* (Respondent Information 9, March 8th, Elkin). Thus, all activities in this month such as cooking, making coffee and cleaning the house will be completely shifted towards the sister, allowing the mother to recover from the delivery.

Of the remaining cases, in 16% the care is mostly prescribed to the children and neighbors and in 5% of the cases the mother-in-law serves as the dominant caregivers. This clearly conveys that in any given situation there are family or community members that ensure care for women after their delivery. In the cases were children are seen as dominant caregivers, the children, mostly referring to daughters, were older ranging from 6 to 16 years old. At this age daughters generally know all the elements and tasks needed to maintain the household, therefore especially after delivery the household activities are temporarily shifted towards the daughters.

However, in all cases participants mention also receiving help from their neighbors. Traditionally and culturally neighbors play an important role after women have given birth. This in means of brining nutritious foods like porridge directly after birth and helping with household tasks. A respondent summarized the need for the help of her neighbors as follows: *"During pregnancy my neighbors help, but after delivery until epiphany it is of high importance, I cannot do without my neighbors"* (Respondent information 23, May 2nd, Elkin).

The research by Agampodi et al. (2017) reinforces this statement by indicating that social capital during pregnancy encompassing the social support of neighbors is very important, even going as far as stating that it can have positive influences on women's maternal health. Arguably social support reduces stress, which can have positive influences on women's maternal health. Neighborhood support is especially important in both villages of Mere-Mieti and Elkin as it is linked to religious traditions relating to the child's baptism and the corresponding epiphany feast. Preparation for the epiphany celebration is largely supported by direct family and neighbors this will be further elaborated upon in the following chapter. However, neighbor support and social capital can vary per household. A respondent adequately stated: *"If you have a good approach especially with your neighbors and they will hear that you have delivered your child they will help with cooking, fetching water and other household activities. However it depends on your approach to the neighbors"* (Respondent Information 22, April 24th, Mere-Mieti). This quote clearly connotes that neighborhood support and cohesion is a two-way street. The women in both research villages often portray an image of high social support and good networks however social support is given to households of which it is also received. Thus, especially households who do not have daughters old enough to help in the household or a mother that lives in a close area are

more dependent on their direct neighbors and neighborhood support and therefore also more inclined to give support to their neighbors if needed. Nevertheless all respondents indicated being very satisfied with the care they received by either their family members or other social capital such as neighbors. In other words, respondents indicated receiving enough help after their delivery ensuring for them to be able to take enough rest.

All in all, respondent information reveals that after given birth there is a clear shift of household activities towards direct family members, in most cases towards the now grandmother or respectively daughters and sisters. Concerning agricultural activities women are prohibited from any agricultural activities until the baptism and epiphany feast. Thus, in this case the epiphany celebration ensures that many women have to take rest at least 40 days after delivery until starting their agricultural activities. All respondents (100%) mentioned that they will not partake in any agricultural activities until the epiphany. Variations exist from directly after epiphany to 6 months after delivery until even 2 years. This depends either on personal beliefs or economic status as one participant stated: *"I choose to take a break because this is needed to bring the child up. Otherwise I cannot produce milk and this is needed as breastfeeding is preferred to other foods"* (Respondent Information, March 12, Elkin). In this case the respondent took a break from agricultural activities for 2 years. However, most women more quickly return to their agricultural labor after the epiphany due to their economic status. In many cases, if there is agricultural season women will start working directly after the epiphany, which is maximum40 or 80 day's after delivery. Nevertheless women do express: *"It is difficult really. It is not good to start agricultural work directly after epiphany but sometimes there is no choice and our backbone's hurt"* (Respondent information 21, April 24th, Mere-Mieti). Also, since the children are still breastfed the baby's are carried to the field and during the agricultural activities. Because, the children are still very small some respondents replied that they would only work half-day's and reduce their activities, as they don't want to expose the newborn children to the sun for a long time. If there are agricultural activities in the period after delivery leading up to the epiphany celebration, either children, other family members such as brothers and sisters, fulfill these activities or the family hires daily laborers.

Overall, the respondents mention they are prohibited from any activities for at least one week and not allowed to leave the house until the epiphany, due to religious reasons and the evil eye. Therefore, interestingly enough high-energy consuming tasks such as agricultural activities but also related to household activities such as fetching water, fetching firewood and going to the market or grainder are prohibited until the epiphany. The next chapter will provide more elaborate information about the religious epiphany, what it consists of and its value within the community.

Case Studies

Firstly two case studies will be provided in order to achieve a full picture of women's daily lives up until delivery. The following case studies briefly follow the experiences from pregnancy until delivery of two women from both village of Mere-Mieti and the village Elkin.

Text box 1.: Case Study Mere-Mieti

Mulu* is a 33-year-old mother of 5, who works both in household and agriculture. On a normal day she works 9 hours in household activities primarily focused on cooking and cleaning. When there is harvesting season Mulu also works around 10 day's in agriculture harvesting and collecting crops such as onion's or potato's. During this time her oldest daughter (15) helps with household activities. Two months before delivery Mulu stopped doing agricultural work which she will continue after the epiphany celebration. Her last delivery was two weeks ago in the HC. She chose for an institutional delivery because of the food provided and the instruments to stop excessive bleeding. Nevertheless, the delivery was painful and with complications. Mulu had to be sewed after delivery, which causes her to be in a lot of pain and creates a large dissatisfaction with the healthcare center. The stiches remain painful however the HEA did not advise to check up after delivery. Because of this experience Mulu wants her future children to be born at home. Still, Mulu is very happy with the help of her daughters (12,15) who now perform all household activities so that she can take rest. Together with some help of neighbors on the 3rd and 7th day, her daughters perform all household activities until the 80th day after delivery. After the epiphany she will start all household activities again and agricultural activities by taking the baby on her back.

Text box 2.: Case Study Elkin

Nigisti* is a 29-year-old mother of 3, who is primarily busy with household activities. During harvesting season she works twice per year carrying the harvest, mostly barley or wheat. During her pregnancy however, she did not perform any agricultural activities until 6 months after her delivery. During her pregnancy she performed all household tasks but the last two months her mother helped her with some household activities. Also, her children went to fetch water and her husband helped by going to the grainder. Nigisti delivered her last child at home because the ambulance was too late. Her delivery was than accompanied by her mother, after the delivery the ambulance brought her to the healthcare center in order to check whether everything was in order. Nigisti, despite her homebirth, mentions she prefers an institutional delivery, as "*at the HC I am certain of my life, the HEE than take the responsibility."* After her delivery her mother moved in for 3 weeks to take care of her, during this time she did not perform any activities. Until the epiphany celebration on the 80th day after delivery (as her child is a girl) she only performed small household activities but did not leave the house. Nigisti did not receive any postnatal check's, she did however get a textbook with information however Nigisti is illiterate therefore her children have to read the information in the textbook.

* *Both names have been modified for the purpose of anonymity.*

Baptism & Epiphany

During and after delivery religion plays an important role in both villages. As both villages are completely Christian-Orthodox the respondents value the religious baptism of their newborn children very highly. The Ethiopian Christian Orthodox religion follows the Old Testament, which also recognizes seven sacraments of the Christian Church. Baptism is amongst the seven sacraments and one of the most important Christian rites. Baptism derives directly from Jesus Christ immersion in the River Jordan, or Yordanos, which seasonally flows through the religious town Lalibela in the Ethiopian highlands. The rite of baptism signifies the life membership to Orthodox Christianity, following the feast of the epiphany that celebrates the baptism of Christ in the river Jordan (Finneran, 2009). Baptism can occur in any stage of a person's life, however as it signifies the alignment with the Christian Orthodox Church it is often preferred at an early point in once life. In addition, the rite of baptism only occurs once. In case of the Ethiopian Christian Orthodox religion, the church encourages baptism for male infants at the 40th day after birth and for females at the 80th day after birth, this is a tradition coming from the Old Testament. Baptisms are performed in the morning, in which the newborn child is taken to a river or pool and immersed in the water three times. In the absence of a nearby river or pool, the priest should poor water on the newborn child three times (Immigration and Refugee Board of Canada (1994). This religious tradition, as it commemorates the alignment to the Christian Orthodox Church, is believed to bring bless to the life of the newborn child.

Baptism in the Tigray region of Ethiopia, occurs as described on the 40th or 80th day after delivery depending on the gender of the newborn child. Due to the absence of rivers in the village's Mere-Mieti and Elkin, children are baptized in the church with the pouring of holy water on the child's head. This ceremony, as described, occurs preferably in the morning until 08:30 in the local church. The baptism signifies bringing bless to the child's life and its alignment with the Ethiopian Christian Orthodox Church, consequently the child's parents vow to uphold the child's Christian education during its life. After the baptism ceremony, the family celebrates by means of an epiphany feast. The traditional epiphany feast often includes a slaughtered ox or goat, local homemade beer, music and dancing.

However, as the epiphany is a large celebration, there are many activities leading up to the big event. First of all, women from multiple areas come and visit the newborn child. These can be neighbors, friends and family from within the villages or further areas. Visitors come to pay their respects to the newborn child and the recently delivered mother. Direct family and neighbors of the mother perform all the household activities in the week directly after delivery.

Picture 1: blessing of bread 7th day after delivery

Within the Ethiopian Orthodox religion, it is tradition that on the 1st, 3rd and 7th day after delivery, neighbors and family members wash the clothes of the woman whom just delivered her child in a nearby river. References to holy water and rivers are made continuously throughout the Baptist celebration in the Ethiopian Orthodox Religion, due to the baptism of Jesus Christ in the Jordan river. After the clothes are washed the women return to the house and eat together.

Especially until the 7th day the woman is not allowed to perform any activities. Relatives such as the mother, aunts, nieces, wife of husband and neighbors preform all the household activities. During these days men are not present, with the exception of priests who can visit to bless the food, mostly traditional bread. These days especially are meant for preparation for the big epiphany on the 40th or 80th day, on which day men will be present. Leading up to this celebration, various relatives will come and help in order to prepare food for the big feast. The preparation for the epiphany feast mostly includes all household members, everyone having their own task, as one respondent mentions: *"After I deliver, my mother will stay and help with the preparations for the epiphany and my husband will collect the firewood and go to the market for the ingredients for the epiphany. The children will also help with fetching water and firewood."* (Respondent Information 2, March 2nd, Mere-Mieti)

In this preparation, the mother especially in the first week after delivery, is strictly forbidden to perform household activities. Recommended resting time within the community states a minimum of two weeks, however depending on the amount of help women receive, they might start small household activities after the first week. Nevertheless, there is a clear distinction

between small and larger-energy consuming household tasks after delivery. Namely, religious tradition dictates that a mother is forbidden to leave the house 40 days after giving birth in fear of the evil eye. The evil eye will invoke bad spirits and bad health onto the mother. In addition, a child is not allowed to cross a river until it's baptism, this referring to the blessing of a child with the holy water of a river. Consequently, as the baptism only occurs on the 40th or 80th day after birth and women until then are not separated from their child, this ensures that women are prohibited from crossing a river until the baptism. As explained by a respondent in the following passage: *"I don't do any activities until the epiphany because you are not able to cross the river before the epiphany, first you have to be smoked by the priest. That's why were not allowed to do any activities before this" (Information from respondent 21, April 24th, Mere-Mieti,).*

In addition to the fear of the evil eye if women leave their household before the 40th day after delivery, deeply rooted in the Christian Orthodox religion prohibits women from conducting activities outside the house. Therefore, large household tasks such as fetching water, going to the grainer or going to the market are prohibited until the baptism. Subsequently, women until than only perform small household activities such as separating grains. As the Christian-Orthodox religion dictates that within these 40-day's women do as little as possible even within the household. Thereby indicating that other family or community members ideally should even perform all inside household activities. As mentioned in the previous section, thereby mostly the grandmothers move in until the epiphany. However sometimes this is impossible leading to other caregivers or women starting small inside activities before the baptism.

Professional Care

As depicted in previous chapters, women generally receive informal care from their direct family and community members during their pregnancy. However, especially considering the willingness and importance to increase maternal health globally, universal professional healthcare is also of high importance. Previous research reveals a somewhat negative image concerning the offer of modern healthcare facilities and care in rural villages within the Global South in general and Ethiopia more specifically. Thus the availability of professional care in both research villages and corresponding the utilization of this care will be addressed in the following chapters. In order to convey a clear picture of the available care this has been categorized in several sections, namely antenatal care, delivery care and postnatal care. The chapter will conclude with some additional care provided by the health extension workers of the health extension program and the heath care center.

Antenatal Care

As mentioned earlier, antenatal care refers to the care given to women during the scope of their pregnancy leading up to the delivery. The World Health Organization recommends four antenatal visits in which factors such as blood pressure and weight are measured. Overall generally few life-threatening complications are prevented by antenatal care nevertheless it does have numerous benefits. Foremost, it provides an opportunity of informing the patient and educating them about potential risks and the benefits of institutional delivery. In respect, there is a positive relation between women who receive antenatal care and have professional or institutional deliveries. Therefore, while not having a large direct effect on the maternal health of pregnant women it has several indirect benefits (Abou-Zahr, Wardlaw & WHO, 2003). Nevertheless, the recorded number of antenatal care utilization in Ethiopia remains low. The Ethiopian Demographic and Health Survey in 2016 reported that 62% of women utilize antenatal care in general and 58% for women living in rural areas (Central Statistical Agency Ethiopia & ICF, 2016). A study conducted in the Tigray region found that 54% of women made use of ANC facilities (Tsegay, Gebrehiwot, Goicolea, Edin, Lemma & San Sebastian, 2013).

However, the results of this research indicate that unlike previous research, in these two villages the use of antenatal care is relatively high. Namely, results indicate that 97% of women received antenatal care with on average 4 to 5 visits during the course of one pregnancy. Thereby,

complying with the recommendations set by the World Health Organization. In addition, as mentioned earlier antenatal visits provide a good opportunity to inform women on institutional delivery. The results found in this research reinforce this idea, as multiple participants mention being persuaded by Health Extension Workers to deliver their child at the healthcare center during the antenatal visits. Furthermore, the antenatal appointments were used to measure the women's weight (to track weight gain or loss during pregnancy), blood pressure and position of the child.

Delivery Care

Delivery care refers to the care women receive during delivery. Overall, previous research found that women in Ethiopia predominantly prefer home deliveries rather than institutional deliveries. The research of Feyissa & Genemo (2014) mentions that only 10% of Ethiopian women make use of institutional delivery. Reportedly 84% of all deliveries occur at home and approximately 78% of all deliveries were attended by a Traditional Birth Attendant rather than a professional (Shiferaw et al., 2013). However, this research indicates a more positive outlook on the percentage of institutional delivery. This research depicts 67.7% of the respondent having delivered their last child at a healthcare center, entailing 32.3% delivered their last child at home. Within this research there is a distinction between two villages; Mere-Mieti of which encompassing a healthcare center and Elkin despite being less accessible relying on the same healthcare center. This is reflected in the amount of institutional deliveries, in Mere-Mieti 88.9% of the last births were delivered at the healthcare center whereas in Elkin only 66.7% of the last deliveries occurred in the healthcare center. Thus, reinforcing previous literature that accessibility is one of the most important factors influencing the utilization of modern health facilities (Tarekegn, Lieberman & Giedraitis, 2014).

Box 3. Participant Information 5, Elkin.

My last two children (4 years and 4 months) were born in the Healthcare Center and my oldest (9 & 12 years) were born at home. However, there is no difference between the two, it is just that it's a must to deliver at the healthcare center, because it is forbidden to give birth at home. The only difference is that we get an injection with a needle but I don't even know it's importance.

Respondents mention various reasons for choosing an institutional birth. The following passage encompasses some of the most important reasons women state for institutional birth: *"In the HC they provide food if you feel tired. Also they control your bleeding by injecting you with a needle. Also they provide you with a good and clean bed, you get a new clean bed after delivery and also there is an ambulance since t During pregnancy I was walking hree years. Before that we made use of the traditional ambulance or going by foot" (Respondent Information 12, March 12, Elkin).* Nevertheless, there are examples of women who mentions

solely choosing institutional delivery because the community as depicted in the following quote:*"I was told to give an institutional delivery during my first delivery there was no strong rule on homebirth." (Respondent Information 15, March 14, Elkin).* This is also shown through the respondent information in Box 3, which clearly indicates that there are cases in which women do not comprehend the importance of institutional delivery but merely comply with it because of local regulations and pressure by community leaders.

All in all, in comparison between previous literature and information retrieved from in-depth interviews with participants there has been a large increase in modern healthcare utilization and more specifically institutional delivery in this research field. Especially since approximately 6 years most respondents mention that the number of institutional deliveries increased severely, this is in line with the data acquired. According to the respondents the increase in institutional deliveries in due to the arrival of the Health Extension Workers in the village and in result an increased awareness within the community. The further chapters will elaborate more on the factors that are said to have influenced the increase in institutional delivery and the overall experiences of institutional birth versus homebirth.

Traditional Birth Attendants

As mentioned in the previous section, the article by Shiferaw et al., (2013) states that 84% of all deliveries occur at home and a Traditional Birth Attendant attended approximately 78% of all deliveries. A Traditional Birth Attendant refers to "a person who assists the mother during childbirth and who initially acquired her skills by delivering babies herself or by working with other TBAs" (WHO, as stated by Shiferaw, 2013, p. 1). TBAs are often older women and are generally illiterate. Traditional Birth Attendants attend the largest percentage of deliveries in Ethiopia and therefore are an important element in maternal health (Sibley & Sipe, 2006). In most cases, TBAs are deeply invested in the community or direct family members of the women their assisting. An in-depth interview with a former Traditional Birth Attendant gave some insight into the practices they perform during a delivery. Important activities of the TBAs are respectively, determining the delivery date, filling the household with smoke in order to warm and relax the body of the women, caressing the lower back, cutting the umbilical cord, washing the newborn child, painting with butter (butter has traditional spiritual powers in Tigrinya culture) and finally providing porridge to the mother. If all activities are fulfilled the TBA will remain in the household at least 2 days after delivery ranging up to one week depending on the relationship with the mother (TBA Respondent Information, March 12 2018, Elkin). Thus, signifying a deep interpersonal relationship between the TBA and the pregnant woman. Previous research by

Gebrehiwot et al. (2014) conducted in Tigray mentions that traditional values such as the application of heat through a coal fire at home, which is not available at the health facilities promotes women to deliver their child at home. Furthermore, rituals performed in order to get Saint Mary's help and the fear of the evil eye during large exposure of the pregnancy within the community all promote home deliveries.

However, local regulations currently prohibit home deliveries and the use of a traditional birth attendant. This entailing that the local authorities at the kebele/village level can implement a 500 birr fine if women deliver their child at home without sufficient reason and if they make use of a Traditional Birth Attendant. In the last case, the TBA is also given a 500 birr fine. Even though this punishment has not been implemented yet within the community, several respondents mentioned changing their behavior, as they were afraid they might receive the financial punishment. This could have ensured for variations in data as 32.3% of the respondents mentioned delivering their last child at home, however several mentioned doing this without the attendance of either a traditional birth attendant or a skilled birth attendant. A clear description of such situation is conveyed in the following passage:

"I wanted to deliver in the HC but the ambulance was too late so I had to deliver at home. However, local skilled women were not there, because they are not allowed. They did attend my first child's delivery. But now the local leaders prohibit TBA's to attend home deliveries. The punishment for this is 500 birr if found with evidence. This punishment is both for the households and the TBA's. However, the punishment has not occurred in the village yet. (…) *The community does not exclude the local skilled women only the government and the local leaders. We actually want their help so hiddenly the community still includes the local skilled women" (Respondent Information, March 8, Elkin).*

This quote clearly encompasses the difficult transforming phase especially the Elkin village is under. As there is no road construction, health post or healthcare center in this village, therefor the accessibility of the healthcare center remains difficult. However, there is an increased awareness on the benefits of institutional delivery and modern healthcare instead of traditional practices previously fulfilled by TBAs. This therefore creates difficulties on occasions when there are problems with the ambulance, as HEWs and local leaders are pushing for a shift towards skilled attendance nevertheless with the local punishment on TBAs, if there are problems with the ambulance this might result in no assistance at all.

Initially TBA's were largely included in changing from traditional attendance to skilled attendance. This was done through the training of TBA's. Trainings lasted around 16 days and occurred approximately 8 years ago. TBA's were asked to explain how they gave traditional

assistance after which the 'modern' way of providing assistance during a delivery was explained. After discussing both means of assisting a comparison was made with corresponding explanations on the benefits of modern/skilled attendance. Finally, the training reached a consensus and TBA's were encouraged to work closely with the HEWs and help them achieving full institutional delivery in the community (TBA Respondent Information, March 12 2018, Elkin).

Postnatal Care

Postnatal care, as mentioned earlier, refers to the care provided to women within 42 days after their delivery. Research has shown that besides delivery itself the day's followed up by delivery are most crucial for women. Most maternal deaths occur in the latest trimester of the pregnancy or in the first few days after the pregnancy (day 1 being highest after which the number decreases) (Ronsmans & Graham, 2006). Safe motherhood programs recommend that all women receive health checks within 2 days after delivery as a large proportion of deaths occur in the first 48 hours after delivery. The demographic health survey of 2016 found that in general only 17% made use of postnatal checks within 2 day's after delivery and only 12.6% of women living in rural areas (Central Statistical Agency Ethiopia & ICF, 2016).

This research found that the healthcare center sends women home 6 hours after delivery. In itself unproblematic if there is follow up check-ups such as PNC. Nevertheless, the amount of respondents that received postnatal care is extremely low. Of the 60 respondents who recently delivered only 9 mentioned receiving postnatal care 42 days after delivery, ensuring for 15% of the sample population. Of these 9 respondents 8 mentioned receiving post-natal care solely due to complications such as surgically removing the placenta. Thus, especially in comparison to the level of ANC and institutional delivery the level of PNC is extremely low. Easy explanations for the low level of postnatal visits are religious traditions revolving the baptism and epiphany feast after a delivery. The PNC period coincides with the period leading up to the baptism of the newborn child and the corresponding epiphany feast. As explained in the previous chapters referring to this religious celebration, tradition prohibits women from crossing any rivers or leaving the house until the child has been baptized. Therefore, women, even though facilities might be free in the postnatal period, will not access the healthcare center in order to check their health status. The community has provided an alternative to this, namely home-to-home visits. These will be discussed in the following chapter.

Home-to-home visits

As previously stated, home-to-home visits were established as an answer to the low number of women making use of PNC visits. As, the name dictates HEWs visit numerous households and track women's status after their pregnancy. In order to achieve a better picture of what was conveyed during these visits within this research 2 structured observations were conducted during these home-to-home visits.

The healthcare center, being responsible for multiple villages, tracks which women are pregnant or have recently delivered in order to carefully observe their health status. Nevertheless, the women conducting the home-to-home visits are, as mentioned, the HEWs. HEWs primarily focus on informing the community and creating awareness on multiple health related issues. Therefore, these visits mostly compose of asking basic questions instead of medical examinations. A big part of the home-to-home visits encompass nutrition advice, especially since the nutritional status of the population in rural Ethiopia remains a big problem. Especially in the region surrounding and including this research field, due to extreme drought and deforestation of land. Relating to maternal health women are therefore advised to have a diverse nutritional intake. However, in many cases, the economic status of household's does not allow for a diverse food intake, as mentioned by one respondent: *"The HEWs tell us to eat good, but don't provide us with food. So they don't consider our economic status when giving advice."* (Respondent Information 20, Elkin, Tuesday 17 April, 2018). This consequently can have its effect on the production of breast milk, as women do not produce enough breast milk due to lack of nutritious food intake. Nevertheless, women are advised to only feed there children breast milk until 6 months old after which they can

Box 4.: Structured Observation

Structured observations on two occasions provided information concerning the structure of the home-to-home visits. All home-to-home visits lasted approximately 5 minutes. In which HEW's asked the recently delivered mothers were asked the following questions:

1) Name & name baby
2) How she breastfeeds (woman needs to demonstrate this)
3) How she holds the child
4) Inform on breastfeeding: until 6 months (only after this child can receive normal food & water, not before 6 months)
5) Whether they have irrigation land as this is often used to grow vegetables. So they check what nutritious foods the households have.
6) Do they have an individual household plan?
   - Who cares for the children?
   - Reproductive planning?
   - Nutrition plan?

Concerning medical examination eyes were checked if they were yellow – this indicates a shortage of blood. In addition, hand was checked, if yellow this indicated a shortage of food.

slowly start with solid foods.

Furthermore, the home-to-home visits are used to educate women about other aspects after delivery, such as good sanitation and cleanliness of both mother and child. In addition, small aspects such as eyes are checked in order to see whether women are healthy and the navel is checked for infections. Medical examination is thus very basic and only covers some elements of maternal health and danger signs after the pregnancy.

Improvements, HEP & Experiences

The following chapters will provide more insight towards the HEP program, their success and how the provided healthcare by both HEP and the HC are experienced by the rural population in order to achieve a better understanding whether modern health facilities and programs adhere to the needs of rural pregnant women.

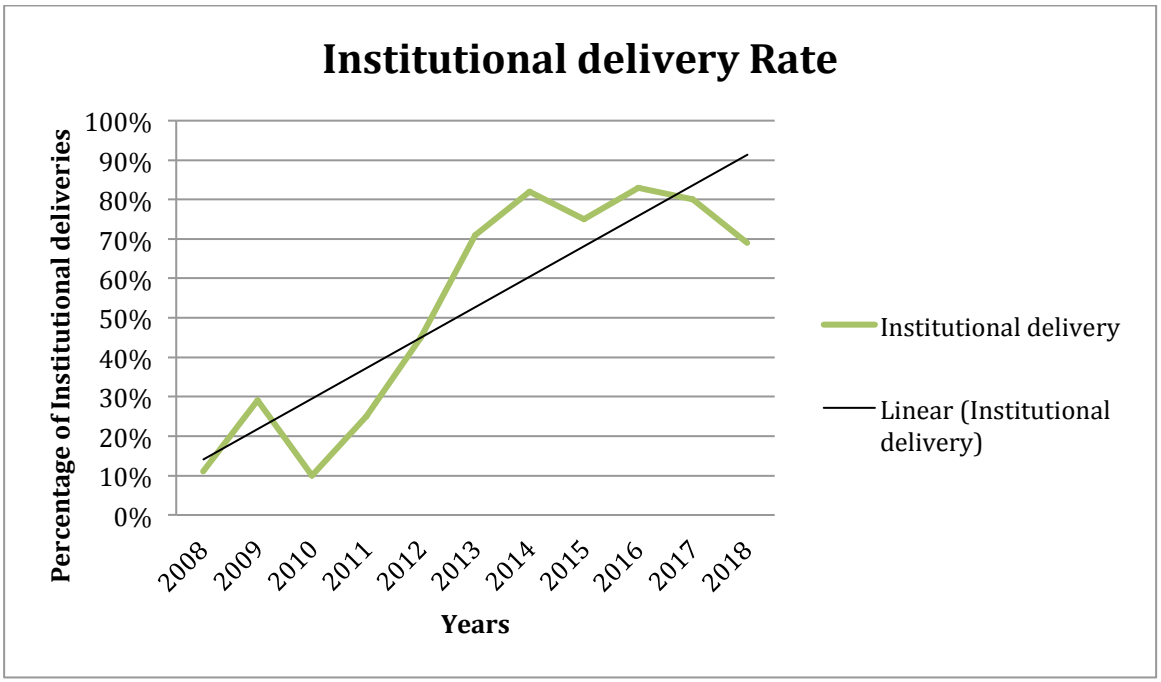
Improvements Institutional delivery

"Great change back then a lot of women died during delivery. Even my mother died during delivery, now we are certain of our lives" (Respondent Information 21, April 24th, Mere-Mieti).

As mentioned by Unicef (2014) the Health Extension Workers of the HEP bring basic healthcare services towards the rural community of Ethiopia mobilizing communities to change their behavior. Within this research field, it quickly becomes apparent that the main focus of the HEWs and for the healthcare center is the maternal health status of women and ensuring complete institutional delivery. This dominant focus on the utilization of modern health facilities is largely due to the idea that institutional delivery and modern maternal healthcare are essential in improving maternal health (Feyissa & Genemo, 2014). Especially considering the main objective of the HEP program is to mobilize rural communities to change their behavior, this research analyses the overall change within this community and more importantly how the HEWs achieved this behavioral change.

First of all, the findings of this research depict a more positive picture of the amount of institutional deliveries than previous studies on this topic in Ethiopia. The most recent demographic health survey of 2016 found that overall 26% of women delivered their last child in a health facility and for the rural population only 20% delivered their last child in a health facility (Central Statistical Agency Ethiopia & ICF, 2016). Whereas within this research 67.7% of the women delivered their last child in a health facility all of which within a rural area. Nevertheless even within this research there was difference between the two villages, as in Mere-Mieti 88.9% of the last births were delivered at the healthcare center whereas in Elkin 66.7%. This could be attributed to the more rural nature of Elkin with the lack of road accessibility and lack of healthcare center or health post.

Nevertheless, 67.7% is a stark improvement from the 20% found within the 2016 Demographic Health Survey. This positive figure indicates significant changes and improvements in recent years. The following table depicts the rate of institutional delivery over the last 10 years. Respondents were asked to report all their institutional deliveries and homebirths, however within this research there weren't participants recorded to have given institutional birth before 2008. Thus years before 2008 have been left out of the graph as this would all depict a rate of 0%.



Graph 1.: Rate of institutional delivery over the last 10 years.

When looking at the graph it becomes clear that from the year 2010 the rate of institutional deliveries within both research villages started to increase dramatically. The increase in institutional deliveries reached its height in the year of 2014 after which the institutional deliver rate fluctuates around the 80% with a decrease in 2018 with an institutional delivery rate of 69.2%. Nevertheless, the linear line depicted within the graph shows an overall strong linear growth over the last 10 years, with the exception of some fluctuations.

This growth in institutional delivery rate especially in relation to the national statistics poses the question of what initiated this growth and change in behavior? Namely, despite various efforts institutional delivery rate overall within Ethiopia remains low. This raises interest in what made women change their health behavior from traditional to modern health utilization in this particular research area. Therefore, the next section will provide more insight into women's articulated reasons for choosing for institutional deliveries and the initial reaction of the community. Hereby providing insight into the work achieved by the HEP and HEWs but also other reasons for women to change their behavior.

Behavioral Change

"There is high awareness creation and attitude change, nowadays people from far villages like Elkin even come to deliver in the HC." (April 13th, 2018).

The large increase in institutional delivery, and consequently no recorded maternal deaths in 2017 and 2018 can be seen as the biggest accomplishment within this research field. Nevertheless, changing the health behaviors of women also came with several difficulties. As, mentioned, the Tigray region of Ethiopia is a traditional patriarchal society in which the Christian Orthodox Church, amongst traditional beliefs plays an important role. Changing the behavior of women from utilizing traditional birth attendants to receiving skilled birth attendance in a health facility encountered several issues. An in-depth interview with a HEW provided some insight into their first approach towards the community as she mentioned that firstly a good relationship with the community leaders has to be established. Within the rural community often a strong hierarchy dictates where rural community leaders have many influences and persuasive powers amongst the community members. Therefore as the HEW pointed out: "*We cannot do anything without the local leaders. We have to relate with the local leaders, we should eat what they eat, sleep were they sleep" (May 4th 2018, Mere-Mieti).* Stressing the importance of a good relationship between the community leaders and the health officials in order to achieve any change within the community's health behavior.

An in-depth interview with a development group leader of Elkin provided the following information: *"In the beginning all people hated this issue of institutional delivery and many people were worried about this issue and thought it was difficult to implement. A big issue was the fact that young men are the midwives or HEE accompanying the delivery."* When asked how women got persuaded to change their behavior the development group leader stated the following: *"Sometimes the wives of some community leaders tried it and they told other people their experience was good. This changed the perception and behavior of women. As the other women than also wanted to try it." (In-depth Interview Development Group Leader, Thursday 17th of April, 2018, Elkin).* However, this does indicate the difficulty in changing behavior. As stated in box 5 a respondent indicated that a horrible event like the death of her child during homebirth only in combination with the growing awareness ensured her to change her health behavior concerning delivery care.

Box 5.: Respondent Information

"I gave two homebirths, this was due to lack of awareness in the community. During one of my homebirths my child died, this in combination with the increased awareness due to the HEWs made me deliver at the HC."

Participant 9, March 7, Mere-Mieti

Changing traditionally and deeply-culturally rooted behavior always appears to be accompanied with difficulties. This is shown from the passages mentioned above. However, after the initial reaction, respondents describe three main elements that have triggered increasing institutional delivery within both villages. These are:

1) Awareness creation (initiated through HEW)
2) Regulation: 500 birr fine for home delivery (initiated through HEW)
3) Service accessibility (the arrival of an ambulance).

Awareness creation in this context refers to awareness concerning the necessity of institutional delivery, entailing information about the service the HC provides, the importance of these services and other issues influencing maternal health such as nutrition and hard labor. Furthermore also training concerning the danger signs during a pregnancy in addition to the negative aspects of home delivery such as the negative effects of cutting the umbilical cord with a razorblade and giving information concerning the necessity of a sterile and clean environment. This training is provided verbally but households also receive a training booklet with such information. The regulation as mentioned is a local rule initiated by the Health Extension Workers due to the community's unwillingness to change (HEW information, March 14, Mere-Mieti). The rule enforces women whom do not deliver their child in the HC without good reason can be charged with a 500 birr fine. Even though community members are aware of this local regulation, implementation has not been documented yet within the research field.
Finally, the service accessibility refers to the arrival of an ambulance in 2010. In addition, to a later construction of a soil road towards the town of Elkin ensuring the ambulance can access all households. This, amongst other things is expressed in multiple in-depth interviews, one respondent formulates *"First we could only go to the HC on foot. However now you have an ambulance. Also now they provide you food at the HC, porridge. Also, they let you stay for 6 hours after delivery to make sure everything is OK. And there is increased awareness on institutional delivery especially through the Health Extension Workers (HEW's). Finally, there used to be a lack of Health Extension Experts (HEE) but currently there are more and there skills are increased" (Respondent Information, March 8, Elkin).* This gives an overview of the numerous improvements that have been achieved in recent years. The following table depicts several more examples of women's reasoning for choosing for institutional delivery. Some passages fall under the categorization of one of the aforementioned aspects; awareness, regulation and service accessibility. However there are also examples of very specific personal reasons in choosing institutional birth, thereby presenting the various motives and personal experiences that can influence women's behavior.

Table 6.: Reasons for institutional delivery

Participant 5 March 7th, Mere-Mieti Age: 33 Children: 5	"*My first three children were born at home. This was due to lack of awareness. When the Health Center was first established, it was unknown what its exact function was. Around 6 years ago HEW arrived who trained for awareness within the community. This ensured for a change in behavior and attitude towards the Health Care Center. So my last two children were delivered at the HC" (Respondent Information, March 7th, Mere-Mieti).*
Participant 13 April 13th, Mere-Mieti Age: 20 Children: 1	*"I see the positive sides of delivering at the HC because there is no transmission of disease with blood contact or other transmittable disease. Also they have materials to dispose of 'human waste' during delivery."*
Participant 9 March 8th, Elkin Age: 30 Children: 3	*"I prefer institutional delivery because at home a lot of women come and pray during your delivery. I find this uncomfortable and at the HC you only have 1 nurse."*
Participant 24 May 2nd, Elkin Age: 25 Children: 3	*"My mother had a bad experience during delivery. The placenta stayed inside after delivery and because my mother experienced this she did not want me to deliver at home. My mother said: now there is an ambulance, back then there wasn't so you should make use of this opportunity. Than I experienced the same, the placenta didn't come out so they treated me good and also gave me glucose."*
Participant 18. April 18th, Mere-Mieti Age: 36 Children: 3	*"My previous delivery was very difficult, no follow up and no food provided, also the people (midwives) were not kind. But the process was very painful and difficult. So that's why I still want to deliver in the HC. Because delivery process is always extremely difficult and painful for me and I have no help at home."*
Participant 24. April 30th, Mere-Mieti Age: 22 Children: 2	*"I chose for institutional delivery myself. I am educated so made this decision based on my knowledge." (Respondent Information 24, April 30th, Mere-Mieti).*
Participant 18. April 17th, Elkin Age: 30 Children: 4	*"You are told many times per day by everyone to deliver at the HC".*

All in all, multiple in-depth interviews with the research population indicates that though not without difficulty, many women were persuaded in changing from traditional delivery care towards modern healthcare due to awareness creation, regulation and accessibility. Awareness creation thereby mostly refers to informing the community concerning the harmful effects that can arise due to homebirth and the positive aspects and more favorable outcome obtained through institutional delivery. Nevertheless, as reinforced by this research and mentioned in previous literature, accessibility plays an important role in modern healthcare utilization. The comparative analysis of Elkin and Mere-Mieti indicates that accessibility has a direct effect on the utilization of care. This is also mentioned within in-depth interviews were women indicate having delivered their child at home due to problems with the ambulance. Furthermore, even though there is a Health Extension Worker present in Elkin, there is no health post and so no actual provision women could come to. This creates more difficulty for the community of Elkin in achieving complete institutional delivery, as problems with the ambulance are likely to keep occurring, mainly due to the fact that the ambulance has to serve multiple villages.

Finally, concerning the institutional delivery rate one can notice a recent drop depicted in graph 1, the Health Extension Agents also expressed this concern regarding this drop. In-depth interviews with various HEA all indicated that women do not feel the necessity to deliver their child after the 3rd or 4th time anymore as they feel they confident in the knowing the procedure of delivery. The HEA indicate that women no longer feel the necessity of delivering at the healthcare center and the anxiety they might have felt during their first delivery. As stated "*Some years ago the tradition was that your first birth will be at your parents home, but nowadays if it is for the first time they are scared so they come to the HC. The problem now is more the 2nd or 3rd time women have to deliver because they know it so they do not feel afraid anymore and want to deliver at home."* Therefore, even for women's second, third or fourth child it is important to keep investing time in conveying the message and necessity of institutional birth (Respondent Information HEW, May 4th 2018). All the same an interesting point, in-depth interviews with the rural pregnant population also indicated several other reasons for a possible decline in institutional delivery. These, in addition to positive experiences and main reasons for institutional delivery as conveyed by the women themselves will be discussed in the following chapters.

Experiences Healthcare Center

Considering the main aim of the Health Extension Program and consequently the Health Extension Workers is to provide basic healthcare to the rural population with a specific focus on maternal healthcare and modern health utilization, it is important to describe how the rural population receives this care. The following chapter therefore provides more information concerning the experiences of women within the healthcare center especially considering women are mobilized to deliver their child in the healthcare center by the HEWs.

When asked about the experiences women had in the healthcare center, respondents in most occasions replied by having had positive experiences. One woman said: *"You can come to the healthcare center without appointment if there are complications and during the check-up (ANC) I received proteins against low blood pressure."* (Respondent 3, March 2nd, Mere-Mieti).

As depicted, positive aspects often relate directly towards direct tangible benefits such as proteins or foods. Moreover, respondents also described the satisfaction with the received care indicating the importance of modern healthcare as shown by the following passage: *"I think the HC is very good because if I had my first child at home I might have died. I delivered my first child with an operation in the hospital" (Respondent Information 24, April 30th, Mere-Mieti).*

Indicating both an appreciation for medical resources and medical skill only accessible at the healthcare center. Thereby in general respondents attributed the positive aspects about the healthcare center and the care they received towards one of the following elements:

1) The healthcare center provides (high nutritious) food for the women during and after delivery
2) The Healthcare Center has tools to stop excessive bleeding
3) The Healthcare Center provides materials to capture blood and other aspects such as the placenta, which ensures for a clean bed after delivery.

During the in-depth interviews especially elements such as the nutrition provided at the healthcare center were deemed as very important and an important consideration in giving birth at the healthcare center. In addition, as previously stated in the research of Wang et al., (2016) within the Tigray region there is a deep cultural and traditional belief that a mother needs to eat porridge after the delivery. The belief even goes as far as to conveying the idea that evil things will happen if a woman does not adhere to this tradition. Therefore, the availability of porridge at the health facility creates an encouragement for institutional delivery due to its nutritious but also traditional value. Furthermore, Health Extension Workers and Health Extension Experts or midwives are actively informing the community about the complications that can occur during

childbirth and the most common reason for maternal death namely excessive bleeding (Ronsmans & Graham, 2006). Traditional belief states that there is traditional medicine to cure excessive bleeding, nevertheless HEW's are continuously informing the community on medical ways to stop excessive bleeding and its advantage. Finally, the healthcare center provides materials to capture the blood and placenta during the delivery, in addition to providing a clean bed after the child is delivered. This is often mentioned as a reason to choose for institutional birth as it is cleaner and also the excessive blood and human waste such as placenta can be viewed as embarrassing when seen by other family and community members during a homebirth. Thus, there are multiple reasons respondent's mention for choosing institutional delivery over homebirth. When asked about their experience within the healthcare center women were mostly positive dictating either one of the mentioned points as ascribed reason for their positive experience or reason for choosing institutional delivery.

However, unfortunately there also have been numerous negative experiences. As mentioned by the article of Bohren, Vogel, Hunter, Lutsiv, Makh, Souza & Javadi (2015), recent studies portray negative experiences and neglectful, abusive and disrespectful care during their childbirth in health facilities throughout the Global South. The mistreatment of women during delivery ensures for a large obstacle in future decisions to utilize health facilities. Within this research negative experiences can be largely categorized in either one of the following categories: 1) Inadequate care & lack of materials; 2) No interpersonal relation; 3) Men Versus women. All of which will be discussed as follows.

Inadequate care & lack of materials

First of all, inadequate care refers to either the lack of materials or inadequate knowledge and skill of the health professionals. Respondents elaborated on experiences signifying a lack of knowledge and skill but also absence of adequate materials. An example of a respondent representing the lack of both knowledge and professional materials is shown in the following passage: *"During my pregnancy we were not satisfied with the care we received at the Healthcare center. This was because I did not feel the baby move throughout the pregnancy and I had swollen hands and neck. Therefore, we decided to go to the hospital in Quiha (nearby town). However, both the healthcare center and hospital did not know what to do. So I still delivered at the healthcare center in Mere-Mieti. Only during my delivery we found out that I was pregnant of triplets. After delivery I was then sent to the hospital for further care. They provided me and the baby's with a lot of food but the baby's had to sleep in another room with people who were ill because the rooms were full and they had no bed left for me. So the care we received was not good" (Respondent Information, February 28th, Elkin).*

As mentioned, the healthcare center did not have the ability to see the baby's and track their movement due to the lack of medical equipment such as an Echocardiographic machine. This, resulting in the fact that the mother was unaware that she was carrying triplets until the delivery. In addition, further care she received also had various limitations such as lack of beds and separation of ill patients and newborn babies. As becomes clear from the passage the respondent received care from various health facilities each lacking in the required materials.

This passage thus relating more to the poor supply side of the healthcare facilities, however there were also instances related to the medical skill of the health extension experts working in the healthcare facilities. As one respondent from Mere-Mieti mentioned: *"The woman who helped me during my delivery had no technical skills. She was rushing my delivery, which caused complications. So, I had to be sewed which still causes me to be in a lot of pain. Because of this bad experience I actually prefer to deliver at home. The community leaders persuaded me to have an institutional delivery and I know that if I wouldn't they would be angry therefore I felt pressured to deliver in the HC. However, because of this bad experience my next delivery will be at home"* (Respondent Information, March 7, Mere-Mieti). As indicated by the respondent herself, negative experiences influence her future healthcare behavior, by choosing to return to the traditional care. This is in line with previous research by Yakong et al. (2010) and Shiferaw et al. (2013) which demonstrate that women often encounter negative experiences with professional nurses which, ensures them not to utilize professional reproductive care in the future but rather seek the help of Traditional Birth Attendants. TBA's are trusted within a community whereas there is less confidence or trust in health professionals due to bad experiences or low quality of professional healthcare services.

No interpersonal relation

This relates to the following category of negative experiences within the healthcare center, namely a lack of interpersonal relation. As previously mentioned, TBA's are deeply valued within the community. Often TBAs are close relatives or neighbors that have a long personal connection with the woman giving birth. TBA's therefore, not only provide care but also allow for a personal relation during and after delivery. As a TBA mentioned in an in-depth interview that they can stay up to 1 week after delivery within the household, in order to take care of the mother. Thus signifying a deep interpersonal relationship, which element is lacking during the care women receive in the healthcare center.

Men VS Women

Somewhat overlapping the last category, are the experiences of deliveries assisted by male nurses versus female nurses. First of all, as mentioned Ethiopia has a deep traditional and patriarchal society in which female activities are strictly separated of male activities. Thus, introducing institutional delivery with the attendance of a male nurse is a big variation from the traditional way. Thus women indicated having to get used to this idea as expressed in the following quote: *"I was very shy the first time but now I am adapted. I considered it as very shameful. I was not ok to be seen by people I do not know especially because the midwives are men. However, now I am adapted to this" (Respondent Information 18, April 17, Elkin).* However, this instigated a negative development as mentioned by the Development Group Leader of Elkin:

> *"First the women had a problem with men as midwives, but now we have adapted to this idea. Now we prefer the men because they are very polite and sympathetic whereas the women can be very rude. Like telling you that you shouldn't cry or show pain during delivery" (In depth interview development Group Leader Elkin, Thursday 17th of April).*

Other respondents who shared their experiences concerning the care received by female nurses reinforced this idea. The following respondent mentioned: *"When I delivered there were 1 men and 2 women. The men were very kind, unlike the women. When I shout because of pain, the women used force to stop me from showing any pain. However, the men give me the freedom to express if I feel pain. They were very compassionate and kind unlike the women." (Respondent 17, April 18th, Mere-Mieti).* This statement unmistakably points to the limitations of the female healthcare extension agents. Mistreatment of women by the female HEA during delivery is thus problematic in this research area. Various researches pointed to the global mistreatment of women in health facilities during their delivery, ranging from verbal abuse to physical mistreatment (Bohren et al., 2015), as portrayed in the experiences of women within this research.

All in all, as stated by Bohren et al. (2015, p. 31) "although the mistreatment of women during delivery in health facilities often occurs at the level of the interaction between women and healthcare providers, systemic failures at the levels of the health facility and the health system also contribute to its occurrence". Deficiencies within healthcare facilities in the Global South are thus often interrelated suggesting the need for multi-leveled enhancements. Consequently areas that need improvements will be further elaborated upon in the following chapter.

Room for improvement

Clearly portrayed within the previous chapter, there are several negative experiences as expressed by the research population that hint towards the need for several improvements. These experiences suggest that, as expected, the healthcare center and Health Extension Program with the corresponding HEWs do not completely align to the lives and needs or the rural population. This chapter will therefore provide more insight into several elements that need improvement in order to adhere to the lives and needs of the rural pregnant population. The chapter thereby encompasses limitations within the rural community itself that call for improvement in addition to limitations within the current HEP program and its HEWs. Important to mention however, is that several aspects that require improvement concern long structural improvements, therefore despite their limitations, improving these elements would include long-term structural adjustments. Nonetheless, especially considering negative experiences or limitations can influence future healthcare seeking behavior, the improvements will be discussed more elaborately per section.

Materials & Cleanliness

First of all, respondents indicated the lacking of good materials in addition to good sanitation. The Healthcare center for example relies on water from the water pump and therefore is limited in their cleanliness. In addition, modern materials are lacking within the healthcare center. As expressed by one respondent the lack of an ethnographic machine within the healthcare center ensured that none of the midwives could inform her she was pregnant of triplets prior to her delivery. In addition, a big problem as described by the respondents is that there are no materials to measure the length of women's pregnancy: *"Women cannot tell how long they are pregnant, only way to know is through menstruation however this is problematic"* (Respondent Information, March 8, Elkin). The HC does not have the needed supplies to track the length of the pregnancy and consequently make an estimation concerning the delivery date. This creates a problem especially for women living in further villages as this limits them in making arrangements such as transportation in preparation for the delivery.

Ambulance

A large point for improvement remains the accessibility of the healthcare center. Previous research points to the large influence of accessibility on modern health utilization (Mekonnen & Mekonnen, 2003; Tarekegn et al., 2014; Feyissa & Genomo, 2014). This is also shown through the in-depth interviews within this research. Multiple women mentioned not delivering their child in

the health care center due to problems with the ambulance. An example being: *"My last delivery was at home because it was during Easter (which is a big celebration in Ethiopia) so there was no ambulance service and no women could accompany me because of the celebration" (Respondent Information, March 8, Elkin).* Several respondents also mentioned the ambulance not arriving on time. As explained by the following passage: *"I wanted to give an institutional delivery however the ambulance did not come in time, the delivery was very quick. So I delivered at home. However I would prefer institutional delivery as they can control the bleeding"* (Respondent Information, March 8, Elkin). However, important to note is that due to the regulations prohibiting home delivery in this area, HEW's mention's women might not feel comfortable expressing that they actually preferred to deliver at home instead of occurring due to limitations within the ambulance services. Contrary though, the ambulance serves 17 kebele's entailing the entire Woreda or district. Therefore, the ambulance serves a large amount of villages and instances were the ambulance does not arrive at all or in time, is possible.

Postnatal care

Finally, as indicated in the previous chapter the rate of postnatal care is extremely low. A respondent mentioned: *"There is not much difference in care by the community during pregnancy and after delivery. But after delivery the HC provides no care. They should check up also after delivery as the women's weight could have been reduced, or other complications might arise. So this should be checked at the HC."* (Respondent 23, May 2nd 2018, Elkin). Thus, despite the postnatal period being most critical, women do not receive postnatal care. An alternative to the low utilization in postnatal visits due to religious reasons, are home-to-home visits. However, structured observations on two occasions during home-to-home visits pointed to the lack of medical examinations during these visits and a larger focus on awareness creation and education concerning aspects such as breastfeeding. Nonetheless important, the postnatal period calls for more medical examination performed by health extension experts educated in checking women's health status after delivery.

Gender Roles

Furthermore, as expressed earlier the Ethiopian traditional patriarchal society dictates clear gender roles between men and women. During the maternal period therefore women are still largely left in the hands of other women or female family members for care during their maternal period. Especially considering several labor-intensive tasks such as collecting water, firewood, going to the market and agricultural activities such as collecting the harvest are seen as 'female' activities. In cases were women do not have daughters or neighbors to help them with such activities during their pregnancy, due to these gender roles pregnant women still have to fulfill

such activities during their pregnancy. Previous research by Lowe, Chen & Huang stated that heavy domestic chores especially in the late pregnancy could have negative effects on women's health. The article further states; "Men's work is less demanding than women's, and people tend to follow the traditional male-female division of labor, leaving pregnant women with their heavy daily workload" (2016, p. 9). Thus resulting in women who are still carrying heavy buckets of water in the late trimesters of their pregnancy. This calls for an increase in help from the husbands especially concerning heavy domestic chores such as fetching water and firewood. As a participants expressed *"There are several things that need improvement; women need enough rest time and husbands need to help their wives (…)"* (Respondent Information, April 13th 2018, Mere-Mieti). Especially, as also mentioned in the article by Lowe et al. (2016) it is important that within the late trimester of the pregnancy there occurs a leniency within the traditional task division and husbands increasingly help their wives.

Healthcare trainings provided by the HEWs

As mentioned, one of the main objectives of the HEP program is raising awareness amongst the rural community concerning several health topics and thereby encouraging families to be responsible for their own health (Wang, Tesfaye, Ramana & Chekagn, 2016). This is primarily done through educating and training the rural community. However, multiple in-depth interviews indicated that the trainings lacked depth and clarity. Participants mention on numerous occasions receiving healthcare trainings nevertheless not comprehending the information, in line with respondent's remarks regarding medical interventions and the lack of awareness about their purpose. Considering the importance of full awareness creation amongst the rural population and the aim of the HEP program the rural community has to be educated in such a manner that is comprehensible for all individuals independent of their educational status. As part of the educational training women receive a textbook comprising of information on various maternal health topics. The textbook entails information on 1) the rest needed, 2) type of nutritious foods, 3) what to do after delivery (washing/sleeping) 4) complications & symptoms for delivery and finally 5) what to do if there is bleeding. Thus, it is safe to say that the textbook entails significant information, which is important to convey to women during their pregnancy. Nevertheless, the rural population of Ethiopia and in general this research area is predominantly illiterate, entailing that women depend on their children or other community members to read the information stated in the textbook. This creates several barriers for women to access important information that could also be conveyed verbally by the HEWs so that all women completely understand the topics and no information is lost.

Interpersonal Care

Another element that needs improvement is touched upon in the previous chapter namely the lack of interpersonal care of the health extension agents. A large reason for the remaining use of Traditional Birth Attendants throughout Ethiopia is the deep interpersonal relations women have established with the TBA's (Shiferaw et al., 2013). Especially during vulnerable and difficult times such as pregnancy and delivery, women ascribe valuing the personal connection, kindness and caring received by TBA's. Multiple researches pointed to the complete lack of interpersonal behavior with skilled birth attendants and even aggressive behavior (Bohren et al., 2015). This creates a substantial discrepancy between the care women are used to and the care women are persuaded to utilize by government initiatives such as the Health Extension Program. Especially considering throughout the developing world 'interpersonal behavior' is seen as the most important determinant for satisfying maternal care by women (Srivastava et al., 2015), it is important to train health officials and health extension workers to treat their patients in a respectful manner. In addition to being respectful towards certain situations as expressed in the following quote: *"The pregnancy went very fast, we called the HEW's but they did not want to come to the house. Therefore we decided to deliver at home. But after delivery there was bleeding so we had to come to the HC and we were accused and the HEE were very aggressive and angry that we gave a homebirth. There was no understanding for the situation and how quickly the delivery came" (Respondent Information, April 30th, 2018, Mere-Mieti).* It is important that even despite HEW find a situation credible, they still maintain professional and welcoming to the patient, as a situation as described in the quote above can influence future health seeking behavior.

Tradition & Religion

Religion within the Tigrayan community can evoke positive behavior such as taking sufficient rest after delivery nevertheless it also evokes barriers to change. The findings of the research by Gebrehiwot et al. (2014, p. 4) stated, "the Tigrayan culture is full of traditional values that promote home delivery". Mentioning various traditions such as the application of heat through a coal fire at home or 'smoking' women, which is not available at health facilities. In addition to religious beliefs such as the use of holy water, sanctified by a priest, and other practices in order to receive Saint Mary's help. In addition, exposing the issue of labor too much can evoke the evil eye thus also proving a barrier to institutional delivery.

As mentioned, when delivering your child it is believed that Saint Mary will guide you. Nevertheless, spirit like as most godly figures are, Saint Mary can provide help from any location. Thus ensuring for women to remain hesitant towards institutional delivery. A priests wife

answered: *"Both places I will be helped by Saint Mary"* (Respondent Information 25, May 3rd 2018, Elkin) when asked about the reason for the homebirths of all her children. This was also reinforced by the research of Gebrehiwot, Goicolea, Edin & San Sebastian in 2012 which mentioned the strong role religion plays during a delivery by stating that participants described "how relying on God and Saint Mary could give a false sense of safety, preventing women and relatives from taking other actions in order to manage complications in time" (p. 5).

These various traditions concerning homebirth are often pushed by the older generation of a community. Gebrehiwot et al. (2012) state that within Tigray TBAs and older women often advocate home delivery due to their deep value towards tradition. Within this research the older generation is also found to be a barrier to change as expressed by in an in-depth interview with the HEW who stated: *"Young people are willing to change however the older community are very resistant and do not want to change their behavior"* (HEW, March 14th, Elkin). Clearly encompassing the older generations resistance to change from traditional to modern healthcare.

Healthcare Center

Finally, the Health Extension Agents themselves also specified several components that call for improvement. As stated previously, the main focus of the healthcare center is to increase the institutional delivery rate and finally reach complete institutional delivery amongst the community nevertheless currently there are still various cases of women delivering at home. An in-depth interview with the Health Extension Worker of the HC in Mere-Mieti provided three reasons for remaining home deliveries, namely:

1) Women don't know their actual date of delivery (or how long they're pregnant)
2) Technical problems if women call ambulance (phone not working/electricity out, road problems etc.)
3) Women are alone at home (husband is working) and they do not have the ambulance drivers phone number.

In addition, the manager of the healthcare center pointed to several elements that need improvements. These were more ambulance's for the region, more HEA, as there is a shortage of HEW and HEE, currently only half of the needed staff is working. Furthermore, there is a shortage of beds, sometimes there are too many women and not enough space and last but not least there is no water access and the healthcare center relies on the water pump. As becomes clear the manager of the HC is more focused on the demand/supply side concerning improvements, the research population also mentioned some of these improvements. Nevertheless despite the importance of improving the aforementioned sections, several of these points are larger structural problems of which improvements will most likely not be achieved in the near future. It is important therefore, to note the limitations not only considering possible improvements but

also the research in general. Therefore, firstly the limitations will be mentioned after which an overall conclusion will follow.

Picture 2: Tigrinya woman with her newborn baby.

Discussion

This study has explored the lives and activities of women and how this changes over the course of a pregnancy in order to receive a clear picture on their care needs and whether current modern care such as the HEP align to these needs. As expected, women generally experience a high domestic workload, working on average 12 hours per day fulfilling household tasks in addition to performing seasonal agricultural activities. Heavy domestic chores such as fetching water and agricultural activities can have negative effects on women's health, especially when performed in the later stages of women's pregnancy (Lowe et al., 2016). However, the findings of this research illustrate that women, reaching the final stages of the pregnancy, mostly receive help with high energy consuming tasks. Concerning agricultural activities most women stop when reaching the 6th month of their pregnancy. However, in line with previous research, due to specific gender roles and the position of women within the rural Tigrayan society, women overall receive little help from their husbands with domestic activities (Lowe et al., 2016). Especially in cases were women lack family members or social capital that can help during their pregnancy, this can result in instances were women still have to perform heavy domestic tasks themselves. This in result can have negative effects to women's health and nutritional status (Cooke, 2016).

However, the most vulnerable period is during delivery and the 42-days after birth. Despite common conception that women within the developing world immediately resume their normal domestic and agricultural activities, this research pointed to the longer period of rest women are traditionally and culturally obliged to take. Religious beliefs and fear of the evil eye restricts women from performing any large domestic activities or leaving the house until 40 days after delivery. In addition, a primer caregiver after delivery is mostly the now grandmother who performs all domestic activities during this critical time. Previous research mention that the help of grandmothers by reducing workloads of mothers decrease death risks and improves children's level of wellbeing (Gibson & Mace, 2005).

Concerning the modern healthcare received within this research scope the results pose positive figures in relation to national figures of modern health utilization. The relatively high rate of ANC and institutional deliveries indicate stark improvements over recent years. Nevertheless, in line with previous literature a struggle between tradition and new knowledge in seeking institutional delivery remains (Gebrehiwot et al., 2014). The Health Extension Program was created in order to disseminate this new knowledge concerning maternal healthcare and to mobilize communities in utilizing health facilities. In line with the main aim of the program,

increasing health awareness amongst the rural population, the women of this study indicate changing their behavior primarily due to this increased awareness. Thereby reinforcing the World Banks study concerning how HEP has contributed to universal health coverage in Ethiopia which states that: "There are no alternative interventions that have produced such improvements in material circumstance, knowledge and behavioral factors, and service coverage and outcomes, particularly in rural areas and among poor people" (Wang et al., 2016, p. 59).

Nevertheless, there are still some discrepancies within the care women receive and the care they need, limiting their use of modern health facilities. First and foremost, previous researches have already drawn attention towards the fact that rural traditions are generally not respected in modern healthcare facilities (Shiferaw et al., 2013) creating a barrier for women in utilizing such care. There are numerous religious traditions such as smoking women through creating a coal fire, use of holy water and eating of porridge that limits women in utilizing health facilities. As described by Wang et al. (2016) HEWs within Tigray provided porridge at the healthcare centers in order to initiate women to deliver their child at the healthcare center especially since this has deeply rooted cultural and traditional values. Similar observations within this research and findings reinforce the effectiveness of such small changes in the rate of institutional deliveries. Mostly referring to the providing of nutritious foods such as porridge as primer articulated reason by women in delivering their child at the healthcare center.

Another primary example is the low rate of PNC, which can be largely attributed to religious beliefs restricting women in leaving the house and accessing PNC for at least 40 days after delivery. Thus due to the fear of attracting the evil eye in addition to religious beliefs aligned to the baptism and epiphany celebration. Seeing as these beliefs restrict women's mobility in the critical period after delivery, the community implemented home-to-home visits. Nevertheless, findings of this research pointed towards the lack of medical skill by the HEWs similar to previous literature describing inadequate medical skills of the HEWs (Gebrehiwot et al., 2014). Especially concerning the increased chances of achieving complications within the postnatal period, skilled medical postnatal check ups are therefore of high necessity (Ronsmans & Graham, 2006).

Concerning the healthcare women received at the healthcare center women expressed high appreciation for the healthcare center nevertheless indicated several limitations. The findings of multiple researches suggest that 'interpersonal behavior' is the most important determinant of women's satisfaction in maternal care throughout the developing world (Srivastava et al., 2015). Similarly, various researches pointed to the global mistreatment of women in health facilities during their delivery, ranging from verbal abuse to physical mistreatment influencing women's future healthcare behavior (Bohren et al., 2015). The findings

are in line with the results of this study indicating that women lack interpersonal behavior when utilizing modern facilities in addition to experiences of verbal and physical abuse.

Furthermore, where HEWs advocate modern healthcare utilization, the findings of this research suggest that the older generation advocate traditional care, in line with previous research by Gebrehiwot et al. (2012). Nevertheless, a study in Senegal by Aubel et al. (2004) found that after grandmothers were educated and trained in healthcare topics they would promote new health behaviors. Thereby, the grandmothers now no longer posed a barrier to change but initiated new healthcare behaviors. Indicating that awareness creation and healthcare trainings by HEWs should not be limited to pregnant women but should also cover older generations.

Furthermore, a well-known barrier to modern healthcare utilization is accessibility. Previous literature stated that problems concerning accessibility, entailing elements such as road access, or lack thereof poses as a great limitation to institutional delivery (Mekonnen & Mekonnen, 2003; Tarekegn et al., 2014; Feyissa & Genemo, 2014). The findings of this research reinforce this due to the differences in institutional delivery rate, which is accredited to lack of constructive road, healthcare center and reliable transportation. Other barriers to modern healthcare utilization often mentioned in previous literature, are the remaining problems of supply and demand within the developing world (Srivasdtava et al, 2015). The HC copes with insufficient technical skills and lack of machines necessary to improve maternal healthcare. Lastly, a common problem is the lack of sufficient nutritious foods due to lack of economic resources and reliance on subsistence farming (Nti et al., 1999). Nutritious trainings provided by HEW are therefore rarely implemented due to the lack of cash or nutritious crops. In addition, some women describe having to work longer in agriculture during their pregnancy due to economic reasons, which is known to have negative effects on the nutritional status of both mother and child (Lowe et al., 2016). Therefore, despite awareness creation concerning the negative effects of labor-intensive activities such as agricultural activities economic status sometimes leaves women without choice.

Conclusion

This study adds new knowledge and a broader understanding to rural women's daily activities, how these are influenced during pregnancy and thereby what their care needs are. There is an overwhelming need for health programs, to provide a local scan in order to adapt it to the local needs of women.

Ethiopia, as many other Sub-Saharan African countries, copes with extreme low utilization of modern health facilities. Despite well-known barriers concerning supply-demand and accessibility, when accessible, modern healthcare facilities often still remain unutilized (Shiferaw et al, 2013). However, since the majority of maternal deaths could have been prevented by institutional delivery or modern healthcare (Mekonnen & Mekonnen, 2003) this calls for interventions in especially the rural areas of Ethiopia were problems remain highest. The community-based HEP program was thereby installed especially targeting rural uneducated communities by trying to raise awareness and mobilize the community members in seeking modern healthcare. This study portrayed the HEPs effectiveness in creating awareness and thereby mobilizing women to utilize modern health facilities, due to its relatively high institutional delivery rate. However, the findings revealed that despite success of the HEP program, there are still various elements that do not adhere to the needs of rural women and thereby limit women's modern health seeking behavior.

First and foremost, the remaining traditions due to strong affiliation with the Christian Orthodox Church in the Tigray region limit certain behavior. Therefore, it is important that health programs adapt to these needs, as it is unlikely that community members will disregard religious beliefs. The findings of this research illustrate that only 11% of the population receives postnatal care, despite research stating the day's followed up by delivery are most crucial for women (Ronsmans & Graham, 2006). This is due to the religious mandates of the Christian Orthodox Church that restrict women from leaving the house after delivery. Despite positive effects on maternal health due to the decreased workload the lack of PNC remains problematic. As solution towards this problem, the HEWs provide home-to-home visits, nevertheless the HEW are neither educated nor adequate to perform medical examinations. These home-to-home visits therefore are solely used to provide information concerning things such as breastfeeding, however not used to check for infections, weight loss or excessive bleeding of the mother. Especially considering

postnatal care has proven to decrease maternal morbidity, thorough systematic checks after delivery by professional health agents are essential.

In addition, another limitation in achieving full modern healthcare utilization is the lack of interpersonal behavior of the health extension agents. As, mentioned within this research, health agents and especially female HEA have conducted aggressive and disrespectful behavior towards patients, contradicting the personal connectedness TBAs show to the patient (Gebrehiwot, 2012). Considering the negative effect this can have on women's future healthcare behavior it is important that health extension agents receive trainings that include communication skills such as listening, approachability and politeness in addition to overall caring behavior such as being attentive to patient's needs. The use of interpersonal behavior has found to boost women's self esteem, increase their satisfaction in maternal healthcare and ensure that women will make use of these health services in the future (Srivastava, 2015).

Moreover, as mentioned by Feyissa & Genomo (2014) the remaining low utilization of modern health facilities within the rural community signals the importance of the development of healthcare programs especially targeted at rural and uneducated women. The HEP program, developed as a solution to this problem conveys healthcare information and awareness through the communities. However, in disseminating this information, the HEWs make use of textbooks providing information concerning maternal health. This proves problematic, as most of the rural population within Ethiopia is illiterate (Feyissa & Genemo, 2014) and therefore unable to directly access valuable information.

To conclude, women within rural villages of Ethiopia need to receive good professional medical care in order to achieve the best maternal health outcomes possible. Nevertheless, in achieving modern health utilization, traditional norms and values should be respected. In line with previous research by Gebrehiwot et al. (2012) healthcare program such as the HEP should strive to adhere to local needs of women in order to achieve the best results concerning maternal health. Small changes concerning the providing of porridge at a healthcare facility have been effective in initiating women to deliver their child at the healthcare center. Thereby, this research calls for health projects throughout Ethiopia and the developing world to thoroughly analyze the local lives and traditions of women to see how health programs can be adopted in order to adhere to these needs.

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Appendixes

Appendix 1. Interview Guide

Date: Village: Interview No.: Household Name:

Introductory questions:

- What is your name?
- How old are you?
- How many children do you have?
- What is your religion?
- What is your education level?
- Are you married?
- What is your primary source of income?
- How many months are you pregnant? (If applicable)
- When was your last pregnancy? (If applicable)

Opening Questions:

- How many people does your household consist of?

- Can you tell me about the people you live with?

Probe: parents, partner, in-laws, other relatives

Key Questions Activities & activity shift:

- What do your daily activities entail?

Probe: (agricultural) work, household tasks.

- How are the tasks divided within your household?

Probe: who does what, help from

- Can you explain the difference in your activities between dry season and rainy season?
Probe: agricultural activities, more household tasks

- Do you receive help with certain tasks/activities?
Probe: by grandmother/other kin family members

- How was this during your pregnancy, did you receive help with your daily activities?
Probe: by grandmother/other kin family members, social capital

- How long did you take rest during your pregnancy?
Probe: indicating time frame, reduced activities

- How long did you take rest after delivery?
Probe: indicating time frame, reduction of activities

- Who helped with your daily activities after delivery?
Probe: family members, social capital

Key Questions Care needs:
- Can you tell me about your (recent) pregnancy?
Probe: when, first/second pregnancy

- Did you experience problems during the pregnancy or shortly after?
Probe: Pain, bleeding

- Who provided (health) care for you during your pregnancy and shortly after?
Probe: Health clinic, family members

- Do you recall in what instances you needed help?
Probe: household tasks, delivery assistance, help with children

- Did you give a home birth?

- Who accompanied your delivery?

Probe: TBA, Family, Husband, Community members

- How did you experience your delivery?

Probe: uncomplicated, safe

- How was your experience after delivery?

Probe: fast recovery

- Did you receive help?

Probe: TBA, Health clinic, husband, Community, Children, Family

- Are you happy with how your pregnancy went and the care you received?

Closing questions:

- Do you have any further questions?

- Do you have any recommendations?

Appendix 2. Survey Guide

Date:
Village:
Interview No.:
Household Name:

Survey Questions - Introductory questions:

1) What is your name?

_____

2) How old are you?

_____

3) What is your religion?

_____

4) What is your education Level?

_____

5) How many children do you have?

_____

6) How many months are you pregnant?

_____Months

7) When was your last pregnancy?

_____

8) What is your household size?

_____

9) Who is the household head?

- Husband
- Mother
- Other, namely_____

10) Are you married?

- Yes
- No

11) What is your primary source of income?

_____

12) How many hours a day do you work in domestic activities?

- 1-3
- 4-6
- 7-10
- 11 or more

13) Do you participate in Agricultural activities?

- No
- Yes, in _____*(indicate agricultural activity)* from _____to _____*(Period)*

14) How many hours a day do you work in agriculture?

- 1-3
- 4-6
- 7-10
- 11 or more

Survey Questions:

15) What are your main daily activities?

- Household tasks
- Agricultural labor
- Animal keeping
- Other namely _____

16) What are your husband's daily activities?

- Agricultural labor
- Household tasks
- Religious activities
- Other namely; _____

17) Were you able to fulfill all your regular activities during pregnancy?

- No

- Yes
- Yes, with the help of; _____

18) Did you receive help with your daily activities during pregnancy, if so by whom?

- Yes, Mother
- Yes, Neighbors
- Yes, Children
- Yes, Husband
- No

19) Did you stop (agricultural) labor during and after your pregnancy?

- Yes: from _____ to _____
- No

20) Did you stop household activities during your pregnancy and after delivery?

- Yes: from _____ to _____
- No

21) Did you receive healthcare check-ups (antenatal care) during your pregnancy?

- Yes _____ check ups
- No

22) Did you receive Healthcare Training during your pregnancy?

- Yes
- No

23) Did you deliver your last child in a health facility?

- Yes
- No

24) Did you receive check-ups at the health center after delivery?

- Yes
- No

25) Did you receive nutrition advice after delivery?

- Yes

- No

26) Did you receive help with your daily activities after delivery, if so by whom?

- Yes, Mother
- Yes, Community members
- Yes, Children
- Yes, Husband
- Yes, Other namely _____
- No

27) Are you happy with the help you received during and after delivery?

- Yes, because _____
- No, because _____

** Note: The order of the survey contradicts formal requirements as the surveys were conducted verbally. Ensuring it to be more natural to ask introductory questions such as age/education level first.*