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**Orthodox Christian women's experiences of fasting during pregnancy and
breastfeeding in Ethiopia**

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**Thesis submitted in accordance with the requirements for the degree of
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Abstract

Background—The nutritional status of women and children continues to be a global public health concern, particularly in low- and middle-income countries. While improvements have been gained in nutrition-related health indicators In Ethiopia, 38% of children under five remain stunted, 25% of women of reproductive age are undernourished, and an estimated 1.7 million children, pregnant, and breastfeeding women require specialised nutrition support.

Maternal dietary and child nutrition is not solely the result of access to food. Orthodox Christianity is practised by an estimated 40 million people in Ethiopia and strictly prohibits the consumption of animal products and restricts the times allowed for eating for the 200 days per year that are designated fasting days; yet, there is little understanding of its practice amongst pregnant and breastfeeding women.

Research Aim—To increase our understanding of how and why Ethiopian Orthodox women practice religious fasting during pregnancy and when breastfeeding through their own accounts.

Methods— Using a social ecological framework, interviews with pregnant and breastfeeding women explored the interrelated factors that contribute to dietary behaviour during these nutritionally important periods, including social norms and religious decisions around fasting. A sample of 19 participants was selected purposively for interviews from both urban and rural sites in the Amhara Region of Ethiopia. Interviews were conducted in the local language, audio recorded. Using NVivo software, transcribed interviewed were analysed to define thematic areas.

Results—Religiosity and its effect on health was a major theme of women’s nutrition experiences which drove their motivation and behaviour, intersecting all other themes and subthemes. There was a closely linked association between women’s experiences of the physical effects of pregnancy, breastfeeding during fasting and the spiritual experience of fasting. Women’s exercise of agency in their fasting behaviour and their conception of health as encompassing both spiritual and physical aspects were identified as major themes. The influence of social networks, including peer, family, and community, also played an important role in women’s dietary choices during pregnancy and breastfeeding.

Conclusion—Recognizing spiritual well-being as a normative health framework for Ethiopian Orthodox women may in fact facilitate adoption of the types of multisectoral approaches to undernutrition that are recommended in global health nutrition guidance. Directly involving priests and lay community members as more prominent stakeholders to address undernutrition in this socio-cultural context may result in more effective strategies to reduce nutrition-related maternal and child morbidities and mortality in Ethiopia.

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Declaration

I, Sophia Brewer, confirm that the work presented in this thesis is my own. Where information has been derived from other sources, I confirm that this has been indicated.

A solid black rectangular box used to redact the signature of the author.

11 August 2020

List of acronyms

| | |
|-------|---|
| AIDS | Acquired Immunodeficiency Syndrome |
| ANC | Antenatal care |
| ARHB | Amhara Regional Health Bureau |
| ARL | Amhara Regional Laboratory |
| ASF | Animal source foods |
| BMI | Body mass index |
| CDC | The Centers for Disease Control and Prevention |
| CMBCC | Community mobilization behaviour change communication |
| EDHS | Ethiopia Demographic and Health Survey |
| ENA | Essential Nutrition Actions |
| EOC | Ethiopian Orthodox Church |
| FMOH | Federal Ministry of Health |
| GIS | Geographic information system |
| GOE | Government of Ethiopia |
| HEW | Health Extension Worker |
| HIV | Human Immunodeficiency Virus |
| HSTP | Health Sector Transformation Plan |
| IDA | Iron deficiency anemia |
| IEC | Information, education, and communication |
| IYCF | Infant and young child feeding |
| KII | Key informant interview |
| LSAC | Local study advisory committee |
| MAM | Moderate acute malnutrition |
| MCH | Maternal and child health |
| MNCH | Maternal, newborn, and child health |
| N/A | Not applicable |
| OPA | Organisational and Policy Analysis |
| PHCR | Primary health care reform |
| PHCU | Primary health care unit |
| PLW | Pregnant and lactating women |
| PMTCT | Prevention of mother to child transmission |
| PTD | Pre-term delivery |
| PWC | Pregnant Women Conference |
| RHB | Regional Health Bureau |
| SEM | Social Ecological Model |
| USAID | United States Agency for International Development |
| USG | United States Government |

Glossary of Amharic terms

buna: coffee

dabo: type of Ethiopian bread

dikam: fatigue

Fasika: Easter

t'ella: traditional alcoholic drink made from barley

tsom: fasting

wetet: milk

yenefs abat: priest who is a spiritual father. A family will often have a particular *yenefs abat* whom they consult on spiritual and family matters. A woman's *yenefs abat* may be but is not necessarily the same priest at the church that she attends.

Acknowledgements

This DrPH process has been perhaps an exceptionally long journey. Just as this research project is about the context of nutrition in Ethiopia, this DrPH has also been about context. When I began this programme, my husband and I were living and working in Guyana, and our three children were five years old and under. We had just left Ethiopia after working there for nearly four years. Over the course of my studies, my husband's job took us from Guyana to Liberia, where we were suddenly forced to leave during the Ebola outbreak in 2014. There were interruptions of study and there was immense soul searching about how and if I could ever get this done. Questioning myself became a daily habit. But I didn't give up.

We found ourselves back in Ethiopia unexpectedly after leaving Liberia, and a path that had lately seemed elusive appeared to open, a change in research topic, one that I found fascinating and timely, with at least a couple of years of staying put that would allow me to complete my programme. Then the security situation began to crumble. Even my local IRB application fell victim to the churning political upheaval in the country. The famously unreliable Ethiopian internet would not cooperate or would be completely shut off without notice, most often it seemed when I had supervision Skype calls. I wondered if I was cursed, if the universe was trying to give me a message. I didn't give up.

In retrospect, that data collection occurred during a period of relative calm between more frequent periods of brewing political turbulence that is still playing out, is noteworthy. My family and I will leave Ethiopia in a few weeks after living here a cumulative nine years. My children will have spent the majority of their lives living in the country I write about here. I experienced one pregnancy and delivery here. It's hard to put into words what Ethiopia means to me, what I learned about myself not just professionally but personally over my time conducting research and living here.

I dedicate this paper to those for whom I sought to shine a light on the socio-cultural complexities inherent in understanding and controlling undernutrition in Ethiopia. I wish I could

acknowledge each of the women and children I met during the interviews and those I met but did not interview, those who shared that this was the first time someone had asked their thoughts on fasting—or anything—who so willingly volunteered their time, opinions, allowing my research team and I into their homes and churches, the sharing of *buna* and *dabo* with complete *strangers*. I share their anticipation that others working on nutrition programming in Ethiopia should acknowledge the thoughts and experiences of the women for whom they seek to develop programs.

I owe the completion of this paper to my husband, who supported me unwaveringly through every winding step of my journey through this programme; and my children, who have put up with Mom going to school for most of their lives and yet still love me; to my colleagues and friends in Ethiopia and around the world who inspired and encouraged me to continue the school-work-life struggle, as imperfectly as I have lived it for the past several years; to Rebecca French and Jo Reynolds, the best supervisors I could have wished for but really didn't deserve. I would not have finished this paper without your guidance and humanity. Getting here hasn't been perfect nor without sacrifice, but, as I write, it has been an honor and worth every effort.

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1 Integrating statement

My interest in the DrPH programme versus a traditional PhD stemmed from my interest in creating a natural bridge between research and public health practice (Neuhauser, Richardson, Mackenzie, & Minkler, 2007). As a Foreign Service Officer with the United States Agency for International Development (USAID), a substantial aspect of my work is overseeing the day-to-day operations for United States Government (USG) foreign aid for health and developing country strategies to address a broad range of health issues in lower- and middle-income country contexts. My expectation was that the skills and experience an applied research degree would ultimately contribute to a more nuanced understanding of health challenges and the promotion of sound solutions, both policy and programming.

1.1 The taught component

The importance of evidence-based public health practice and the role of research in public health leadership were woven throughout all phases of the DrPH modules. Beginning with the taught modules, the programme took a comprehensive public health approach to implementing research in relevant contexts, from topic selection to conducting research activities to communicating results and influencing audiences.

Exploring the policy process during the taught modules influenced my focus for both the Organizational and Policy Analysis (OPA) and thesis. For the latter, understanding Ethiopian nutrition policy led me to focus on maternal fasting as a way to fill an evidence gap that could have implications for both policy and programmes aimed at improving nutrition-related outcomes. Factoring in the constraints and enabling factors associated with nutrition policy was critical in developing a communications strategy around my research findings, something I view as a basic component of the DrPH programme. From the taught modules onward, it was this focus on actionable research that provided a guiding framework for developing my research and my role as a public health researcher.

The DrPH leadership and management coursework is designed to feed directly into the OPA, and the mini OPA exercise was not only a preview of the OPA itself, it provided a condensed

opportunity to take the OPA from topic selection to thinking through method and theory options. The final step in the mini OPA, presentation of our work to classmates, instructors, and supervisors and receiving their feedback, was an important opportunity to tell the story of our planned work, akin to the DrPH review process.

In another respect, the taught component was a settling in period and provided a focused and structured entry into the DrPH programme, an intrinsic part of developing a sense of community with the programme, my cohort, and the larger universe of LSHTM. I feel this was so valuable to me as I would spend much of the other two modules away from London.

1.2 Organizational and policy analysis

My OPA examined how one vertical health programme was implemented in one country. While much had been written about the effects of vertical health programmes on the health systems of recipient countries, my OPA focused on the organisational and management approach employed by the largest global health programme to combat a single disease, Human Immunodeficiency Virus/Acquired Immunodeficiency Syndrome (HIV/AIDS) the United States Government's President's Emergency Plan for AIDS Relief (PEPFAR) in Guyana.

The results of my OPA identified influencing factors that supported or created barriers to coordination and collaboration between the six U.S. agencies that implemented PEPFAR in Guyana. These included the presence or absence of a PEPFAR Coordinator; the organisational cultures of implementing agencies as well as agency understanding and buy in around the core philosophy of PEPFAR; and the influence of the factors above on the individuals and teams tasked with implementing a cross-agency partnership in the context of decreasing budgetary resources that often pitted them against one another (Brewer, 2012).

As with my thesis, I chose a country setting I was familiar with for the OPA. This made sense because I was living in Guyana at the time and had directly worked on the PEPFAR programme, giving me access to relevant people and information. The qualitative approach, in-depth interview methods I employed to study PEPFAR management and organisational structures,

and the opportunity to hone my interviewing skills all directly contributed to my thesis research experience, as did the opportunity to practise developing the topic guide and gaining a realistic sense of the sequencing and time allocations for interviews, transcription, and coding.

For the OPA, the experience of conducting inside research was very relevant to the role I will likely face in the future, including facing many of the inherent in conducting organizational research from this perspective: negotiating a dual role as researcher and participant and using my proximity to the organization I was examining while maintaining distance as a researcher (Coghlan & Holian, 2007). I viewed this experience as a significant opportunity to practise my role as an influencer from within my own public health organization. As part of the management structure of USAID country missions, many of which implement PEPFAR programming, the OPA was a chance to practise a critical examination of management and organization systems and functions from the perspective I will most often view it.

The experience of the Guyana PEPFAR programme also offered some insight into how collaboration and coordination can be used to implement global health programmes. The interest in my OPA report was immense, and I shared it with the network of those working in PEPFAR programmes globally. Many of the discussions that resulted from the operational characteristic that can either impede or enhance the ability to achieve the intended public health outcomes.

1.3 Leadership and team building

Perhaps as is the case for all LSHTM DrPH cohort groups, from the first day of the programme, I found myself in the company of an experienced group of public health professionals from around the world. Though we had some common threads of experience and interest, the opportunity to become acquainted with a diverse group of peers enriched my experience through all three DrPH components. We all came to the programme at different points in our careers and lives, and I found particularly meaningful the way in which my cohort members at times informally mentored each other or simply provided moral support and encouragement.

This manifested itself, for example, as input on course topics, thesis topics, or advice on career paths.

This type of team building manifested organically and was likely intrinsic in the type of person attracted to the public health approach of the DrPH degree. Being open to the expertise around you is a critical value as both a research student and public health practitioner, as is understanding that expertise is not limited to instructors and other faculty but peers as well. Observing and modelling excellence in work ethic, determination, critical thinking, and research skills that created an important method of self-evaluation was as much a core component as the official modules. One member of our cohort was based in Nairobi, but her research topic was set in Ethiopia. Each time she travelled Addis Ababa for fieldwork, we would catch up, share experiences with our study progress, and encourage each other. Because many of us were conducting field work outside of the UK, in person meet ups or periodic virtual reconnections during this phase helped me remain connected to a broader research community during sometimes challenges during sometimes challenging field conditions.

The impact of the three components was heightened through our ability to learn from and lean on each other over the course of our respective DrPH programme timelines. The inclusion of leadership, management, and development of influencing strategies as an approach has been very beneficial in developing my understanding of applied research, where the aim is not just quality research but research that leads to policy or programming changes, and developing my role as a public health practitioner in championing research within my organisation and field of expertise.

1.4 Research project

While I began the programme as a full-time student, I transitioned to part-time status for the thesis project phase to accommodate the fact that my husband's work moved us to Liberia and then to Ethiopia. Both of these factors had a profound impact on the course I had charted for my DrPH progress. The desire to conduct relevant and timely research led to a clarifying and

transformation of my research topic. The Seqota Declaration to end child malnutrition was signed in Ethiopia in July 2015, just after I returned to the country, as I was hearing anecdotally about the challenges of addressing stunting and micronutrient deficiencies with women who were constantly fasting. The support of my supervisor and cohort members was invaluable during this transition period, along with maintaining an adaptive and resilient mindset, which are as important in the battery of skills needed for conducting research as expertise in theoretical and methodological disciplines.

My next assignment takes me to Madagascar to assume my first assignment directing a USAID Health Office. I will be one of the few USAID Health Officers globally with a DrPH, even though the DrPH approach linking management and leadership with research skills is exactly what is lacking in such an implementation-focused part of public health. Working on the donor side of the research equation, we often have the commitment to funding research as a necessary box to tick in achieving evidence-based decision-making yet lack the deeper appreciation and knowledge of how the work needs to be done. Upon completion of my degree, the door will remain open to continued learning and improvement as a researcher with the confidence to translate research into action and promote sound public health policy and programming.

2 Paper outline

This DrPH thesis follows the following structure:

Introduction—The broad elements of undernutrition and the food-religion nexus

Background—The rationale for studying maternal fasting in Ethiopia; background and context setting of maternal and child nutrition, Orthodox fasting in Ethiopia, and definition of major concepts used throughout the paper

Scoping review—A review of available literature related to religious fasting during pregnancy and breastfeeding, both globally and specific to Ethiopia

Theory—The guiding framework used to structure the research project and framework for the analysis and interpretation of research data

Methods—A description of research method and processes

Results—Presentation of data, description of analysis work, and explanation of major and minor themes

Study process and context—A reflective overview of the specific context and challenges encountered during fieldwork

Discussion—Interpretation of the findings in relation to other research, public health implications of this study and recommendations for policy, practice and future research.

3 Introduction

Globally, 80% of undernourished children live in just 20 countries and of the 178 million children who are stunted, 90% live in 34 countries in South Central Asia and Sub Saharan Africa, including Ethiopia (Bryce, Coitinho, Darnton-Hill, Pelletier, & Pinstруп-Andersen, 2008). Ending malnutrition in its various forms has a renewed place within universal primary health care. The landmark 2008 Lancet series on nutrition refocused global attention on both the need to address undernutrition and interventions poised to do so. This watershed moment in elevating nutrition to global public health prominence was followed in 2013 by another Lancet series focused entirely on the need to address nutrition within the critical periods from conception to through the first two years of a child's life (Robert E Black et al., 2013).

Nutrition programming in developing countries is often aimed at improving food diversity and availability. Interventions such as improved technologies to increase agricultural and livestock production, poverty reduction, and improved market access lead the way in donor and host country investments for national nutrition programmes. Structural and policy interventions frequently focus on creating the systemic and enabling environments necessary to support a consistent supply of essential micronutrients. Through these, individuals, families, and communities are in a better position to gain the necessary nutrients to improve their overall health and ameliorate the physical, social, and economic effects of under nutrition in its various forms.

Around the world, what people eat is influenced by more than the availability of food and the consideration of food's nutritional benefits. Social and cultural beliefs and behaviour dictate to a great degree the type and amount of food consumed. People and food are diverse, necessitating a local interpretation of standard nutrition recommendations. Determinants of adequate nutrition, such as reduced poverty and increased food production, may not provide the complete picture to understand the diets of populations that practise religious fasting on a scale such as in Ethiopia; therefore, an examination of the broader contextual environment of

dietary behaviour is also critical to forming multi-sectoral interventions aimed at addressing undernutrition.

Despite significant improvements over the last 20 years, Ethiopia's stunting, under-five mortality, and maternal mortality rates, at 38%, 67 (per 1,000 live births), and 353 (deaths per 100,000 live births), respectively, remain substantial health challenges (Ethiopia, 2017; UNICEF, 2017). Each of these has links to nutrition in the first 1,000 days of life, defined as conception through pregnancy and up to a child's second year. As the second most populous country in Africa with a growing youth bulge, Ethiopia has the potential to significantly impact the absolute number of people affected by nutrition-related health problems in the region and globally.

3.1 Religion and nutrition

More than 40 million of the estimated 260 million followers of Orthodox Christianity worldwide reside in Ethiopia (*Orthodox Christianity in the 21st Century*, 2017). Religious fasting plays a major role in the eating patterns of Orthodox Christian Ethiopians, significantly impacting dietary decision-making over the course of their lives. Half of the second most populous country in Africa adheres to strict fasting regimen for more than half of the year.

This research examines the knowledge gaps on how and why Orthodox Christian Ethiopian women fast during pregnancy and when breastfeeding, how social and cultural factors influence fasting behaviour, and implications for policy and cross-sector nutrition programming. It offers the potential to make new, substantive contributions to a pressing public health problem in Ethiopia. Though not an ethnographic study, it explores the religio-cultural norms that pervade women's lives, directly affecting their diets during pregnancy and breastfeeding.

This DrPH study also contributes to the broader global health knowledge base and awareness of the role of religious fasting in nutrition programming. It demonstrates that there has been very limited published research related to Orthodox religious fasting and highlights important

differences between types of fasting that could influence the generalizability of findings from other religious fasting practices, e.g., Ramadan fasting to an Orthodox population.

The following questions are addressed in the next Chapter 4 Background:

- Why is dietary diversity important for maternal and child health? What are the consequences of poor dietary behaviours amongst pregnant and breastfeeding women and their children?
- Why is research looking at fasting behaviour amongst pregnant and breastfeeding women in Ethiopia needed?

4 Background

The relationship between nutrition is both a cause and consequence of disease (USAID, 2015). Direct and indirect outcomes of poor nutritional status of pregnant women include pre-eclampsia, haemorrhage, and obstructed labour, while maternal-child nutrition linkages can transmit the negative effects of a mother's nutritional status, including malnutrition, to her children (Christian, 2003).

Ten to nineteen percent of women of reproductive age worldwide are seriously undernourished (Robert E. Black et al., 2008). Anemia before and during pregnancy is associated with increased maternal and perinatal mortality and morbidity, and affects almost 42% of pregnant women worldwide, with 97% of deaths resulting from iron deficiency anemia occurring in middle- and low-income countries such as Ethiopia (Royston & Armstrong, 1989). Menstruation and pregnancy, particularly during the second and third trimesters, demand increased iron, folic acid, and zinc (Viteri, 1994). Whereas most women in high income begin pregnancy with extra iron stores that are depleted and replenished during pregnancy, in countries where malnutrition is prevalent many women begin pregnancy with an iron deficit that increases as pregnancy progresses (Allen, 2000).

Other indirect health issues associated with undernutrition include poor water and sanitation, resulting in parasitic co-infection, which further exacerbates anemia complications for women and fetal development. Studies on comorbidity between malaria and undernutrition have found an association between clinical malaria and food insecurity (Pérez-Escamilla et al., 2009). Vitamin A and zinc deficiencies increase the risk of infectious morbidity and mortality (Robert E Black, 2014).

During pregnancy, undernutrition can have a devastating impact on the healthy growth and development of a child. When women are malnourished during pregnancy, their children have a higher risk of dying in infancy (Moucheraud et al., 2015). Brain development is affected by intrauterine experience, and some mental illnesses could be associated with the effects of

maternal undernutrition and are more likely to face lifelong cognitive and physical deficits and chronic health problems (McGuire, 2015). Studies of women exposed to famine conditions prenatally have suggested an increased risk of schizophrenia in their children (Hoek, Brown, & Susser, 1998; St Clair et al., 2005; Susser et al., 1996). Beyond health, undernourished children tend to have lower educational achievement, while adult height is proportionally associated with income earnings and asset holdings. These and other effects associated with nutritional status are likely to have an impact on the health and social outcomes of future generations, just as short maternal stature due to undernutrition is associated with smaller babies (Victora et al., 2008).

4.1 Dietary fasting

A simple definition of fasting is the complete abstention from eating and drinking, though variations on what is included in a fast will vary across cultures and the reasons for fasting, for example, weight loss or religious observance. Intermittent fasting and other forms of caloric restrictive dieting has gained widespread popular attention, while in various forms, this has been practiced widely by numerous populations for religious purposes. At least one systematic review recognises that fasting may be associated with improvements in metabolic health, cognitive performance, and cardiovascular outcomes over the long term, including the degree of benefit; however, the threshold between the benefits versus negative impacts and the effects across a range of populations, both general and high-risk, remain without sufficient evidence (Horne, Muhlestein, & Anderson, 2015).

4.2 Fasting outcomes

Fetal origin hypothesis posits that a woman's exposure to health events during pregnancy, such as extreme caloric or nutrient deficits, has, by extension, the potential to affect the intrauterine environment and that these exposures may program the fetus to future diseases, whether latent or more immediate (Almond & Currie, 2011). Most of the available literature focuses on intrauterine and neonatal health and on short-term rather than long-term effects of fasting during the Ramadan fast and, to a lesser extent, religious fasting amongst Jewish women. The

literature on the effects of the specific type of fasting practised in Orthodox Christianity in Ethiopia is lacking.

4.2.1 Maternal health outcomes

Ketonuria, a marker of physiologic stress, has been associated with fasting among pregnant women during Ramadan in Iran and Turkey, particularly when caloric deficiency is greater than 2,000 kcal per day. The Iranian study concluded that ketonuria can be predicted in up to 70% of severely calorie restricted cases, defined as kcal deficiency of more than 2000 (Arab, 2004; Hızlı et al., 2012). Amniotic fluid index among both Turkish and Iranian pregnant women was found to be significantly higher in non-fasting compared to fasting women in two reviewed studies (Hızlı et al., 2012; Seckin, Yeral, Karsl, & Gultekin, 2014), but studies in other settings did not observe any significant difference amongst pregnant women who were fasting (Sakar et al., 2015, Moradi, 2011, Kamyabi and Naderi, 2004). Lower maternal glucose levels were significantly associated with fasting, which, if sustained over a long period of time, may be a contributing factor for lower birth weight (Malhotra, Scott, Scott, Gee, & Wharton, 1989; Mirghani, Weerasinghe, Smith, & Ezimokhai, 2004). While these results may not be associated with short-term effects on children, some of the delayed effects described below may be associated with prenatal fasting.

Yom Kippur, the Jewish Day of Atonement, requires a 25-hour complete fast from food and water. A study of Jewish pregnant women in Jerusalem found a marked increase in spontaneous deliveries in the twenty-four hour period following this fast in Jerusalem, but these were full-term, not premature, deliveries (Kaplan, Eidelman, & Aboulafia, 1983). The “Yom Kippur Effect” of onset of spontaneous labour in the day after the end of the fast was not found to be associated with an increase in the number of elective caesarean births; possibly, it is a result of decreased uterine blood flow caused by increased blood viscosity, which in turn triggers uterine contractions (IBID). The authors noted that strenuous fasting may increase the risk of pre-term delivery (PTD) among women predisposed to such an event (IBID). In a study of

Lebanese pregnant women, PTD, however, was not associated with fasting when compared to non-fasting pregnant women (Awwad et al., 2012).

4.2.2 Child health outcomes

The nutritional linkage between mothers and their children is affected by inadequate access to nutrition and unhealthy dietary behaviours, making the first 1,000 days of life, from conception to 24 months after birth, a vital window of opportunity for reducing undernutrition and its adverse effects (Awwad et al., 2012). Most studies on longer-term effects of fetal shocks, specifically those related to maternal exposure to malnutrition, have focused on “severe and rare” circumstances, such as famine; however, some evidence has emerged on socio-economic outcomes, such as educational performance as measured by cognitive performance among children, related to milder events like fasting (Almond, Mazumder, & Van Ewijk, 2011; R. J. Van Ewijk, Painter, & Roseboom, 2013). Almond et al. found that exposure to Ramadan fasting in the first month of pregnancy in Uganda and Iraq was associated with a 20% higher likelihood of a mental or learning disability (Almond et al., 2011).

There have been mixed findings on the relationship between fasting and on fetal development and neonatal health. For example, fetal development showed no statistical differences between fasting and non-fasting women in three studies measuring Doppler indices (Abd-Allah Rezk, Sayyed, Abo-Elnasr, Shawky, & Badr, 2015; Moradi, 2011; Seckin et al., 2014). Fetal breathing and fetal heart rate, however, were decreased among fasting women and the time required to detect fetal movements was significantly higher in women who were fasting (Chen et al., 2012; Mirghani et al., 2004). As van Ewijk points out, doctors may not be aware of or may not record a mother’s fasting circumstances when assessing or managing health problems during pregnancy (R. Van Ewijk, 2011).

Results on the effect of fasting on placental weight have varied. At the low end of the normal range, placental weight is associated with later risk of chronic disease, including coronary heart disease, stroke, hypertension, and type 2 diabetes amongst children whose mothers fasted during pregnancy and may also be associated with fetal distress (R. Van Ewijk, 2011). Alwasel

found that placental weight for babies who were in utero during Ramadan in Saudi Arabia and Tunisia was lower than for those that were not gestational during Ramadan (S. Alwasel et al., 2010; S. H. Alwasel et al., 2013). In a Turkish study, hypoalbuminaemia, a possible outcome of malnutrition, was actually associated with higher placental weight (Sakar et al., 2015). Though Almond et al. argue that birth weight as a proxy for fetal development is an imperfect indicator, referring to it as a 'first stage' effect of in utero shock, such as fasting, Alwasel found that babies who were in the second or third trimester of gestation during the Ramadan fasts had reduced weight at birth and that babies who had been in utero during Ramadan were smaller and thinner, and had smaller placentas, than those whose mothers had not been in utero during Ramadan (S. Alwasel et al., 2010; S. H. Alwasel et al., 2013). Among four other studies with smaller sample sizes, one showed increased low birth weight and three no change in birth weight (Jamilian, Hekmatpou, Jamilian, Ardalan, & Shamsi, 2015; Kavehmanesh & Abolghasemi, 2004; Ozturk et al., 2011; Ziaee et al., 2010). Jamilian et al. also included infant length and head circumference, with non-associative findings related to Ramadan fasting. Negative effects on breastmilk composition, when comparing fasting women to non-fasting control groups were not observed in two studies of lactating Muslim and Jewish women observing the Ramadan and Yom Kippur fasts (Bener et al., 2001; Zimmerman et al., 2009).

The effects of maternal fasting on a child during pregnancy may not be immediately apparent and may in fact appear in adulthood (Awwad et al., 2012). The effects of undernutrition go beyond proximal health outcomes and even beyond health outcomes alone, and Almond and Mazumder first attempted to associate the distal effects of maternal diet specifically with Ramadan fasting, an extension of Barker's fetal origins hypothesis that suggests that in utero conditions affect birth are associated with longer-term health effects, such as cardiovascular disease (Almond & Mazumder, 2011; Barker, 1995). Experiencing famine or Ramadan fasting in mid gestation was associated with higher adult rates of kidney problems and anemia (R. Van Ewijk, 2011).

The results of studies that focus on non-health indicators of children of mothers who perform religious fasts were inconsistent. Two studies in Indonesia that have looked at social or health outcomes amongst adults whose mothers had fasted during Ramadan while pregnant found that these individuals were thinner and shorter (R. Van Ewijk, 2011; R. J. Van Ewijk et al., 2013). There has also been little analysis of other changes, such as effects on sleep, anxiety, concentration, or longer-term health and non-health effects for children and breastfeeding and pregnant mothers who undertake religious fasts (Bajaj et al., 2012). Almond et al. did find significant effects on proxies for wealth and earnings and attribute the greatest effect on adult outcomes when Ramadan fasting occurs in the first month of pregnancy (Almond & Mazumder, 2008). In contrast, babies born eight months after Ramadan have shown slightly higher levels of productivity as measured by literacy, completed years of schooling, and employment status (Almond & Mazumder, 2011).

4.3 Nutrition interventions

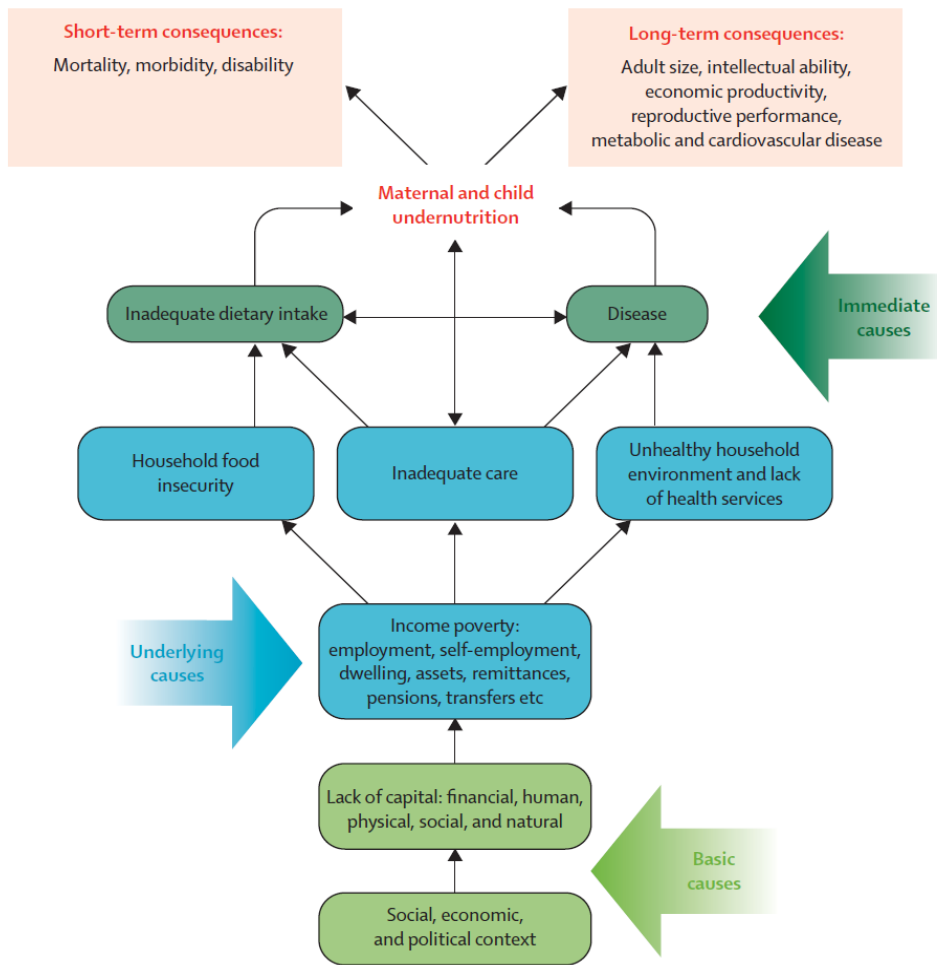
The Rome Declaration on Nutrition and 2013 Lancet series on maternal and child nutrition recognised the interconnectedness of nutrition programmes and policies across the human lifespan with particular attention to the period of pregnancy and importance of breastfeeding, highlighting the role of relevant scientific and socio-economic research and development to innovation and technology transfer (Robert E. Black et al., 2013; FAO, 2014). Particularly relevant to this study is the attention given to the more distal determinants of undernutrition noted by Gillespie et al. and the need to harmonise a range of stakeholders into broader nutrition sensitive approaches in impacted countries (Gillespie, Haddad, Mannar, Menon, & Nisbett, 2013). A multi-stakeholder platform includes a variety of sectors from host governments but also civil society, the private sector, the general public, and, in the Ethiopian context, the Orthodox Church.

One of the central messages of the 2008 Lancet nutrition series is that “effective nutrition actions exist but have not been implemented at scale and assessed, especially in countries where high proportions of the burden of disease are attributable to undernutrition” (Bryce et

al., 2008). Breastfeeding counselling, vitamin A supplementation, and zinc fortification were identified as having sufficient evidence to support their implementation in all 36 countries which are home to 90% of the world's stunted children. (Bhutta et al.; R. E. Black et al., 2008; Bryce, Coitinho, Darnton-Hill, Pelletier, & Pinstrip-Andersen, 2008; Victora et al., 2008). Adequate dietary intake during pregnancy was characterized as likely to provide value, but the need for additional programmatic experience was underscored. The 2013 Lancet series on nutrition continued to focus on nutrition-sensitive approaches and stressed the importance of building alliances between governments and other stakeholders, including identifying common ground issues and finding innovative ways to mobilise resource (Robert E. Black et al., 2013). This includes tackling anemia during pregnancy, for example, which is easily prevented and treatable with nutrition, supplementation, or fortification.

WHO's package of Essential Nutrition Actions (ENA) focuses on high impact investments in nutrition, including women's nutrition, early initiation of breastfeeding and exclusive during the first six months of life, complementary feeding from six months, nutritional care of sick and malnourished children, prevention and control of anemia, prevention and control of Vitamin A deficiency, and prevention and control of iodine deficiency (World Health, 2013).

Figure 1 UNICEF framework of the relationship between poverty, food insecurity, and other underlying and immediate causes of maternal and child undernutrition and its short- and long-term consequences



Source: (Robert E. Black et al., 2008)

4.4 Ethiopia demographic, health and nutrition profile

According to the last national census in 2006, Ethiopia's population was 94 million, the second largest in sub-Saharan Africa, after Nigeria (Agency, 2007). While the total fertility rate in Ethiopia has declined from 5.5 in 2000 to 4.6 in 2016, the total absolute population number is expected to double to 172 million by 2050, fuelled by a population growth rate of 2.5%, which is more than double the global average of 1.1% (T. W. Bank, 2014b; Demographic, 2016). The absolute size of the population means that changes in Ethiopia's health indicators will continue to have enormous influence on regional and global trends.

Ethiopia is administratively divided into eight regions and two city administrations. Amhara Region, the study location, is the second most populous region with 28 million people, of whom 83% percent are Orthodox Christians (Agency, 2007). The capital of Amhara is Bahir Dar, which is situated next to Lake Tana, the source of the Blue Nile.

More than 80% of the population live in rural areas, making Ethiopia one of the least urbanized countries in Africa (W. Bank, 2018). Ethiopia is in Stage 3 of the demographic dividend, characterized by urbanization and shifts away from subsistence farming, increased use of modern contraceptive methods, increased wages, improvements in the status of women, including more investments in girls' education, and reductions in the use of child labour (USAID/Ethiopia, 2017). The next census, delayed from its planned implementation in the spring of 2019, will provide insight into whether these trends are on track.

Ethiopia's progress across a range of these and other health and development indicators in the last two decades is notable. Traditional practices, including early marriage, marriage by abduction, and female genital cutting, place women at risk for poor health (Boyden, Pankhurst, & Tafere, 2013). For women, the national median age of first marriage is 17.1 years and 23.8 years for men according to the 2016 Ethiopia Demographic and Health Survey (Ethiopia, 2017). While there is a declining trend in early marriage in Ethiopia, among the youngest cohort of women nationally (ages 15-19), 6 % were married before the age of 15 (IBID). Amhara Region has the lowest median age at first marriage among women, at 15.7 years (IBID). Under-five and infant mortality made steep declines between 1990 and 2013, and immunization coverage for measles increased 38% for children ages 12-23 months (T. W. Bank, 2014a). In addition to an improved contraceptive prevalence rate (from 5% in 1990 to 29% in 2011), the total fertility rate declined from 7.25 births per woman to 4.8 during the same period (T. W. Bank, 2014b). The adolescent birth rate declined from 118 to 81 births per 1,000 women ages 15-19. The maternal mortality ratio has declined from 990 to 676 per 100,000 live births between 2000 and 2011, and the percentage of births attended by a skilled birth attendant has increased from 10% in 2011 to 23% in 2013 (EDHS, 2011). Still, the country has one of the highest rates of

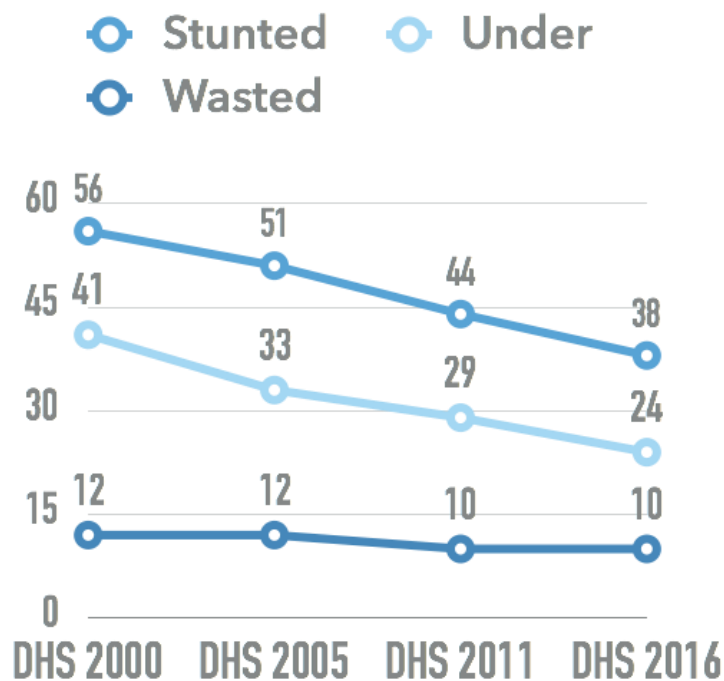
maternal deaths in sub-Saharan Africa, totalling 13,000 annually (World Health Organization & Bank).

4.4.1 Ethiopia trends in child and maternal nutrition

Ethiopia has committed to reducing child stunting to 20% and the proportion of underweight children to 15% by 2020 (E. FMOH, 2015). As of the 2016, under-5 stunting was 38% and underweight children was 24% (Ethiopia, 2017). The country's newly released Food and Nutrition Policy views ensuring the consumption of nutritious foods "at all times, to all citizens" as a "prerequisite for the creation of [a] productive workforce and sustainable economic development." (FMOH, 2019). The goal is for all Ethiopians to have optimal nutritional status at all stages of [the] life span..." (IBID).

Recommended nutrition practices are low in Ethiopia (Disha, Tharaney, Abebe , Alayon, & Winnard, 2015). Malnutrition underlies almost half of under-five deaths in Ethiopia (E. FMOH, 2015). Forty-five percent of child deaths in Ethiopia have malnutrition as the underlying cause (UNICEF, 2014). Figure 2 shows the sixteen-year trends for undernutrition in Ethiopia. Current trends for stunting indicate that a third of children under five will still be stunted in 2020, peaking among children at 24-25 months of age (UNSTATS), representing a major negative impact on the health of children in the first 1,000 days (UNSTATS, (Ethiopia, 2017). The prevalence of wasting among children under-five registered very little change between 2000 and 2016. The prevalence of children under five who are underweight is 25%, and severe acute malnutrition is the third most frequent cause of hospital admission for children under five, totalling 4.4 million clinical episodes (Health, 2014). Though the trend in exclusive breastfeeding is positive, increasing from 69% to 74% from 2005 to 2011, rates of early initiation of breastfeeding actually fell from 57% to 37% from 2005 to 2011 (EDHS, 2005 and 2011).

Figure 2 Trends in stunting, wasting, and underweight among children under 5, 2000-2016, Ethiopian Demographic and Health Surveys

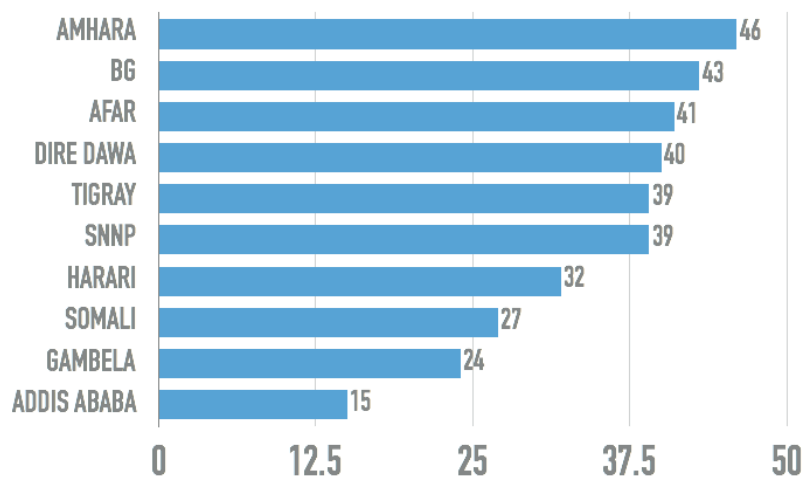


Source: (Demographic, 2016)

Variations in nutritional status differ across geographic locations within the country, with some studies showing higher prevalence of stunting, underweight, and wasting in children from lowland areas (Kinfe, Mulugata, & Tadesse, 2015). Nutrition-related indicators, however, are likely influenced by more than geographic variation and agricultural productivity. Social, cultural, and economic variables also contribute to dietary behaviours and nutritional status, as stunting occurs in areas that are food secure as well as those with food insecurity (Disha et al., 2015). Figure 3 below illustrates stunting rates by district. Though many districts in Amhara Region, for example, are considered food secure, more than 52% of children in the region are stunted, the highest rate of under-five stunting in the country (Disha et al., 2015). In absolute terms, nearly 1.4 million children in this single region of Ethiopia are stunted (Ethiopia, 2017). Consumption of animal source foods (ASF), which are prohibited during Orthodox fasting, is associated with child growth (Headey, Hirvonen, & Hoddinott, 2018). According to the 2011 EDHS, only 10% of children in Amhara ate ASF in the day preceding their survey, compared to

14% nationally. Anemia in children under five years of age, however, is lowest in Amhara Region (Ethiopia, 2017).

Figure 3 Under-5 stunting rates by region, Ethiopia 2016



Source: (Demographic, 2016)

Dietary diversity

Micronutrients are not produced by the body and must be derived from diet, and micronutrient deficiency is defined as a lack of essential vitamins and minerals required in small amounts by the body for proper growth and development (Bailey, West Jr, & Black, 2015). Of the approximately 4.5 billion people worldwide who suffer from micronutrient deficiency, the most vulnerable are young children and women of childbearing age (Dickinson et al., 2009). Dietary diversity can predict the adequate intake of micronutrients for pregnant women (Nguyen et al, 2018).

Ethiopia's average proportion of calories consumed from non-staple foods such as fruits is 25% compared to 37% for African countries on average (Minten 2016). Geographic information system mapping provides insight into diversity across the country, showing that northern regions, including Amhara, have the lowest scores in dietary diversity. While southwest regions, with more available arable land, have higher diversity levels, those living in lowland pastoralist

areas, such as Somali Region, consume more dairy, typically from camel milk, but less pulses than in other regions (GeoCenter, 2015). Only 14% of children under five had an adequately diverse diet according to the 2016 Ethiopian DHS. Children under two years of age in Amhara Region consume less ASF than the national average across all food groups.

Table 1 Consumption of ASF, children 0-23 months

| Foods | Amhara percentage (n=332) | National percentage (n=2,928) |
|--|------------------------------|----------------------------------|
| Eggs | 4.5 | 8.3 |
| Milk, fresh, powdered or tinned | 11.8 | 32.0 |
| Cheese, yogurt, or other milk products | 2.7 | 6.3 |
| Beef, pork, lamb, chicken | 3.3 | 5.1 |
| Liver, hearts, organs | 1.2 | 1.9 |
| Fish | 1.2 | 1.7 |
| Yogurt | 3.3 | 3.8 |

Adapted from Factors associated with infant and young child feeding practices in Amhara region and nationally in Ethiopia, Disha et al., 2015.

4.5 Orthodox Christianity and fasting in Ethiopia

As one of the oldest Christian nations, the Ethiopian Orthodox Church is one of the Monophysite or non-Chalcedonian Churches that became separated from the rest of Orthodox Christianity, commonly referred to as the Eastern Orthodox Churches that include the Greek and Russian Orthodox Churches, in the fifth century (Ware, 1993). Forty-four percent of Ethiopians identify as Orthodox Christian, while 40% identify as Sunni Muslim, concentrated mainly in the Somali, Afar, and Oromiya Regions (Lewis, 2013). The remainder belong mostly to the Protestant Christian religions (DHS, 2011). The northern regions of the country are predominantly Orthodox, including Amhara Region, the focus region of this DrPH. Though

infrequent episodes of tension and conflict occur amongst the religions, co-existence between religions is generally the norm (State, 2014).

The decision to focus solely on Orthodox fasting during pregnancy and breastfeeding in this research rather than including Ethiopian women of all religions is primarily based on the relative lack of evidence on the Orthodox fasting and the need to generate evidence in this population (Harvey, 2014). Though both Ethiopian Orthodox Christianity and Islam share some fasting rituals in common, there are distinct differences, which may have an effect on nutritional outcomes. These include the frequency and duration of fasting throughout the year, as well as the fact that a Muslim fasting diet does not exclude animal sources of food.

Ethiopian culture is characterized by a high degree of religiosity, and Orthodoxy plays a central role in both rural and urban communities. Ninety-eight percent of Ethiopian Orthodox Christians say that religion is very important in their lives, and 89% say they believe in God with absolute certainty. Almost eight in ten attend religious services weekly (Pew Research Centre, 2017).

Many common social practices have ties to Orthodox Christianity. Someone is welcomed into a home with *Yegizabihere engeda* (God's guest) or *Bet ye egizabihere newe* (A home belongs to God). The ubiquitous sticks carried by men in rural areas are associated with the biblical story of the staff Moses used to part the Red Sea. Regardless of whether they are Muslim or Christian, women and men dress in white clothing for special occasions, a practice with symbolic reference to the risen Christ appearing in a long white garment.

4.5.1 Rules governing Orthodox Christian fasting

Though fasting is an intrinsic part of Orthodox Christianity globally, Ethiopian Orthodox fast at an unparalleled level. Eighty-seven percent of Ethiopians fast during holy times compared to the global average for Orthodox of 64% (*Orthodox Christianity in the 21st Century*, 2017).

Despite the general exemption from fasting by the Ethiopian Orthodox Church of very young children and pregnant and lactating women (PLW), there is anecdotal information to suggest that Ethiopian women continue to fast into pregnancy (Harvey, 2014; Karl Eric Knutsson & Ruth

Selinus, 1970a). The historic Ethiopian famine of 1985 demonstrates the degree to which eating is a complex issue deeply connected to religious belief and behaviour. Relief workers reported that Orthodox Christians in feeding centres continued their fast, despite suffering from severe acute malnutrition (Edlin, 1985). Priests were dispatched to provide exemptions and were met with unwillingness (IBID). "The fact that people do fast during such a crisis is quite extraordinary, of course," remarked an aid worker at the time (IBID).

There are 180-200 days of obligatory fasting for all Orthodox Christians, with around 250 days comprising the standard fasting regimen for Ethiopian Orthodox Christians. These fasting days fall into two major categories, Wednesday and Friday fasting and the group of six fasts preceding major feast days. The first long fast of the ecclesiastical year, the Fast of the Prophets, which begins in November, is marked by the two months preceding Ethiopian Christmas in January. The next, and longest fast is *Fasika*, which precedes Easter and lasts 55 days. Another fast of three weeks takes place in August, and remaining fasting periods throughout the year last from one or several days to several weeks (Wolde-Mariam, 1985).

The second category of fasting includes on all Wednesday and Fridays throughout the year, with the exception of a period of several weeks following Easter when fasting is prohibited (Karl Eric Knutsson & Ruth Selinus, 1970a).

Table 2 Ethiopian Orthodox fasting calendar

| Fasts | Duration |
|-------------------------------|------------|
| Great Lent Fast | 55 days |
| Christmas Fast | 40 days |
| Gahad of Epiphany | 1 day |
| Jonah's Fast of 3 Days | 3 days |
| Apostles Fast | 10-40 days |
| Assumption of the Virgin Mary | 15 days |
| All Wednesdays and Fridays | - |

Ethiopian Orthodox fasting is comprised of two types, both of which are practised simultaneously during fasting periods. The first is a complete abstention from food and drink, usually until around sundown, which normally occurs at six in the evening. From six o'clock until sunrise the next morning, the second type of fasting, which is the prohibition on eating any animal products, begins. In practice, many Ethiopian Orthodox break their fast at three in the afternoon, rather than sundown.

4.5.2 Church letter on fasting

In 2015, a sermon guide to support priests in educating their constituencies about the importance of nutrition during the first 1,000 days of life was released by the Ethiopian Orthodox Church (Kahrmann, 2016). This action responded to anecdotal information that Ethiopian Orthodox women continue fasting during pregnancy and breastfeeding (Harvey, 2014). The sermon guide specifically instructs on the following points:

“[The Ethiopian Orthodox Church] believes that pregnant women carry children in their womb during 275 days. During this period, they require nutritious foods, including animal source foods. Therefore, the Church allows pregnant women to eat nutritious foods, including animal source foods, from conception to birth. Priests/father confessors are responsible to teach and ensure that pregnant women and followers abide with these guidelines.

“As priests have the responsibility over their soul children, they should understand that pregnant, lactating mothers and children under two need special care during the first 1,000 days and should teach them to feed children all types of nutritious foods, including animal source foods, without restrictions based on the eating Tradition of the Church.”

Though not the focus of this study, religious fasting amongst Muslim Ethiopians is also widely practised according to the tenets of the Muslim faith. This includes compulsory complete fasting from all food and drink, beginning from before dawn until just after sunset during Ramadan (El-Ashi). Though menstruating women, children, and pregnant and breastfeeding women are exempted from fasting, women are generally allowed or encouraged to make up the fasting when they are able (El-Ashi). With respect to Muslim fasting, a 2012 South Asian

consensus statement on women's health and Ramadan suggests that "deserving" women be reminded of the "generously available 'exemption from fast' provisions for the very old, sick, pregnant, and lactating women" (Bajaj et al., 2012). This document also suggests Vitamin A deficiency should be a focus of care for fasting women and that women should have the freedom to decide on whether to fast while taking into account the effect on their "health, safety, and well-being" (Bajaj et al. 2016). It is unclear, however, to whom this letter is directed: health providers, religious leaders or another audience. While unclear whom the audience of this letter is, the nexus of fasting-pregnancy-breastfeeding is notable enough to require a response.

4.5.3 Cultural aspects of food in Ethiopia

Eating is a form of social interaction in Ethiopia. Communal eating, sharing food from a common dish, is the norm in Ethiopia. Some segregation of men and women occurs during mealtimes, especially in rural settings. Ritual hand washing precedes meals, usually following a hierarchy from oldest to youngest. Women will generally give priority to men and children to eat first.

Basic foods, such as *injera* (flat spongy bread made with the teff grain) and *wat* (vegetable or legume sauce), and spices like *berbere*, involve a long preparation process (Javins, 2011). Food preparation is performed mainly by women, frequently holding religious connotations. Slaughtering animals during feasts that follow periods of fasting is performed by men, preferably those who are considered to be religious and have completed the fast. Women, as a rule, do not slaughter animals. Even the precise time the animal is slaughtered is important. After the Easter fast, the slaughtering of animal should take place after 3:00 a.m., when the church service has concluded and, at Christmas, after midnight. The preparation of consumption of food, and some segregation of men and women occurs, especially in rural settings.

4.6 Chapter Summary

This chapter has laid out the role of undernutrition in contributing to child and maternal morbidity and mortality and the particular role the first 1,000 days of life plays in the health children. It highlights the longer-term consequences of poor maternal health and nutrition during this period. The nutrition profile of Ethiopia and Amhara Region is improving is will likely require additional interventions that focus on wider socio-cultural contributing factors. Finally, background information on the religious features of Orthodox Christianity in Ethiopia provide context for the results and discussion contained in Chapters 8-10.

Chapter 5's scoping review will explore evidence on how—and if—women fast during pregnancy and breastfeeding, the social and personal factors involved as well as behavioural interventions to address fasting during the periods.

5 Scoping Review

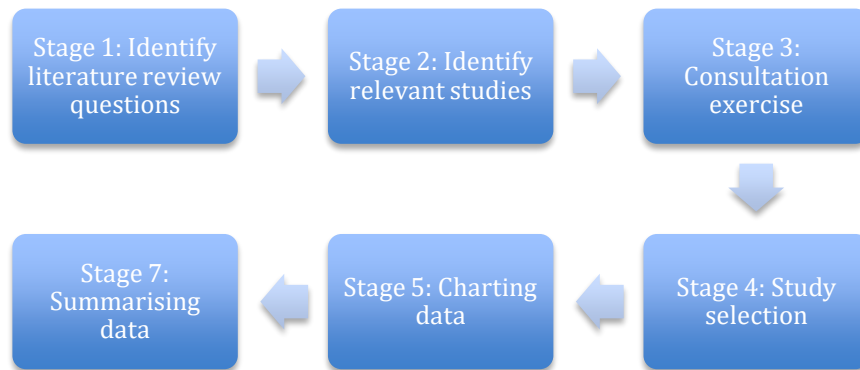
The aim of this literature review was to examine religious fasting behaviour during pregnancy and/or whilst breastfeeding and identify factors that influence these behaviours. The selection of an approach to synthesizing evidence was predicated on the current, nascent stage of evidence that has been generated on my research topic. The synthesis approach was intended to scope the body of literature, identify knowledge gaps, address whether there is sufficient evidence available to answer key questions, and provide a baseline for further evidence gathering, including the relevance of inclusion criteria (Munn et al., 2018).

5.1 Scoping review methodological approach

The methodology used to address the literature review questions was broad by design and incorporated aspects of the Scoping Study Framework (Arksey & O'Malley, 2005). The stages used for this review are illustrated in Figure 4 and provide the structure for the methods employed. Deviations from this framework are noted where applicable. The attempt to map literature in an understudied area such as fasting during pregnancy and breastfeeding presents unique challenges. One of these is that, as a relatively new approach to synthesizing research evidence, standardized methods of scoping reviews do yet not exist with the same degree of replication as other methods (Pham, 2014). Rather than aiming to focus on a narrow area of literature with defined outcomes, scoping studies link together divergent literature streams and a range of study types (Arksey & O'Malley, 2005).

The aim of a scoping review is not necessarily to evaluate the literature, but to scan the landscape for relevant literature and concepts that will help identify potentially valuable literature as well as determine discrete gaps in information (Pham et al., 2014). The scoping review was conceived as iterative, and the description of available literature is narrative in nature (Arksey and O'Malley, 2005).

Figure 4 Stages of scoping review



Source: (Arksey & O'Malley, 2005)

5.2 Review questions

Because religious fasting plays an important role in the lives of Ethiopian women, it is essential to understand the possible socio-cultural and interpersonal influences on this behaviour. To better understand the fasting behaviours of women during pregnancy and breastfeeding, the following questions have guided this scoping review:

1. How does fasting affect women's dietary behaviour during pregnancy and breastfeeding and to what extent are these are maintained during these periods?
2. How do women's socio-demographic characteristics and social/cultural and structural factors influence fasting behaviour amongst pregnant and/or breastfeeding women?
3. What behavioural interventions that target cultural and religious factors have been employed and how effective and acceptable have these been?

5.3 Identifying relevant evidence

The evidence synthesis in this chapter includes studies derived from the original search. The purpose of this search was to inform development of research questions for qualitative interviews with women.

5.3.1 Search strategy and study selection

To aid in transparency and replicability of the search process, this review incorporated the following search strategy: religio* AND fasting AND (matern* OR pregn* OR breastfeed* OR nursing OR lactat*). Searches were run in Popline, PubMed, and Web of Science databases on August 27, 2015.

Inclusion criteria for this review were comprehensive by design to capture as many sources as possible. Studies had to include information relevant to the research questions. The target population of the review included women at any stage of pregnancy or women who were breastfeeding. All breastfeeding women were included, regardless of frequency of breastfeeding, age of the child, or whether complementary feeding had been introduced. There was no limitation based on geography, region, religion, timeframe, or methodological design. The only exclusion criterion applied to searches was to limit results to English language studies. No limitation was placed on date of publication.

Referring to Step 2 of Figure 4 above, multiple steps were taken to refine initial search results based on the search strategy described in 5.3.1. After titles were reviewed and de-duplicated, remaining titles were then reviewed for relevance to review questions, and non-relevant titles were excluded. Reference lists for these were mined for identify additional titles. Search result abstracts were reviewed for relevance to literature review questions, with non-relevant titles identified and excluded. Papers without full document availability were excluded. Full papers were then reviewed.

Finally, to identify grey or unpublished literature and better understand the context of research on fasting in Ethiopia, a consultation with stakeholders was conducted. A total of four consultations took place in Addis Ababa, Ethiopia, between October and December 2015. Persons consulted were nutrition project staff with the ENGINE project in Ethiopia (multisectoral activity implemented in Ethiopia 2011-2016 to address undernutrition in the first 1,000 days of life) and the head of the nutrition programme at USAID in Ethiopia. These

stakeholders were selected due to their understanding of unpublished nutrition research in Ethiopia. No new papers were added as a result of consultations.

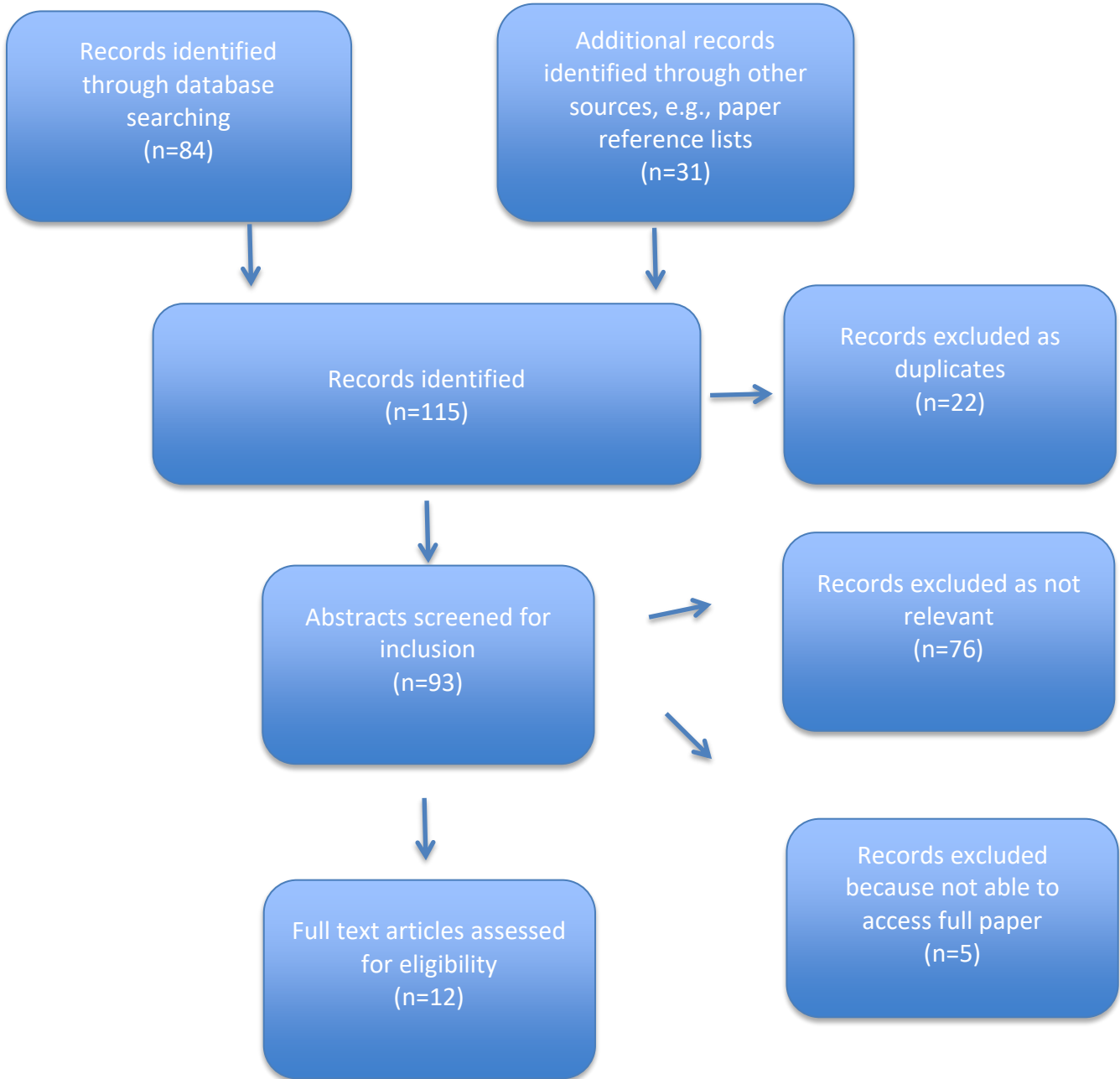
5.4 Results

Summary of key findings

The initial search yielded 84 results. After reviewing reference lists of studies included at this stage, 31 additional titles were identified; the total number of publications at this stage was n=115. Titles were reviewed for duplication, and de-duplicated titles reviewed for relevance. An abstract review resulted in 15 papers being excluded for non-relevance, with deleted papers at this stage mainly studies that focused on fasting related to chronic disease, e.g., diabetes and chronic kidney disease. An additional five papers were excluded because full papers were not available, resulting a total of n=88 studies. Full papers were then reviewed for relevance to the research questions, with 76 excluded. The majority of excluded papers focused on non-religious, medical fasting, for example, testing the fasting blood of diabetic pregnant women. The final number of included papers is n=12.

Three additional papers were identified as a result of stakeholder consultations; however, though these were useful background documents, particularly on the prevalence of anemia among pregnant women and IYCF practices in Ethiopia, these did not address fasting in general or the research questions in particular and were therefore not included.

Figure 5 PRISMA flow diagram



Mapping data

Papers were categorized by review questions, and some studies were relevant to more than one question category. The majority of identified papers focused on immediate indicators of maternal and child health during pregnancy or after birth that were discussed in Chapter 4. This includes birth weight and other anthropometric measures of infant health, amniotic fluid levels, and quantity of breast milk. Some long-term effects, such as diminished adult stature, were studied (Van Ewijk, Susser).

The available literature on religious fasting during pregnancy and breastfeeding is still at a nascent stage. There were only 12 identified publications that addressed women's dietary behaviour. Of these, only one study focused on Orthodox Christian pregnant women in Ethiopia (Knutsson and Selinus, 1970). Eleven studies focused on pregnant Muslim women in Canada and the United States, Great Britain, Morocco, Egypt, Uganda, Turkey, Iran, Singapore. Most of the study target groups were native to these countries, but four looked at the experience of Muslim women who had emigrated to other countries (Robinson and Raisler, 2005, Pathy, Mills, Gazeley, Ridgley, and Kiran, 2011, Jessri et al., 2013, Miller, 1995). The majority of studies used mixed qualitative and quantitative approaches. In addition, there was one systematic review (Sultan, Taha, & Hassanein, 2015) and one ethnographic study (Jessri et al., 2013).

5.4.1 Characteristics of included studies

All but one study focused on Muslim women. Six of the included papers were in high income country settings, all of which focused on Muslim immigrant women. The single paper on sub-Saharan Africa was also the lone study that looked at fasting Ethiopian Orthodox pregnant women. Four studies were among breastfeeding women, five focused on women who were pregnant and two focused or also included health providers. Half of the study designs were qualitative. Table 3 below provides a summary of each included study.

Table 3 Table Summary of included studies by location, target group, design and findings

| Study | Location | Target Group | Study Design | Key findings by research questions |
|------------------------------------|------------------|---|-------------------------------------|---|
| Ertem IO, et al. 2001 | Ankara, Turkey | Breastfeeding women with infants 12 months or younger (n=164) | Cross-sectional observational study | RQ1: Fasting by breastfeeding mothers of infants is common during Ramadan, and rates are affected by beliefs of mothers on the effects of fasting on breastfeeding. |
| Harrison, et al. 1993. | Cairo, Egypt | Breastfeeding women with infants 2-12 months old (n=20) | Longitudinal study | RQ1: Timing of weaning may be influenced by perceptions of summertime as a time of heightened risk of diarrheal illness, by the mothers' decision regarding fasting during Ramadan, and by a desire to minimize the period of vulnerability to illness between the time of weaning and the beginning of the following month in the Islamic calendar. |
| Jessri M, Farmer AP, Olson K. 2013 | Edmonton, Canada | Middle Eastern immigrant mothers (n=22) | Ethnographic study | RQ1: Most mothers practised fasting during breastfeeding because of misbeliefs and varying interpretations regarding fasting rules. |
| Joosop J, Abu J, Yu SL. 2004 | Singapore | Pregnant Muslim women (n=202) | Retrospective study | RQ1: Most women chose to fast during pregnancy, and they do so with adequate support from their spouses and family members. Most of them do not experience any adversities during fasting and even if they do, most were able to overcome them. Most women adopt a positive attitude towards fasting. However, there is a lack of basic |

| | | | | |
|------------------------------|----------------|---|------------------------|--|
| | | | | <p>religious knowledge among many pregnant women pertaining to the Muslim law of fasting during pregnancy.</p> <p>RQ2: Women reported internal pressure, having to do with religious values, and external social pressure to continue fasting.</p> |
| Knutsson KE, Selinus R. 1970 | Ethiopia | Women (n=92) | Cross-sectional study | RQ1: Nearly 100% of women reported fasting during pregnancy. |
| Miller. 1995 | United Kingdom | Pregnant women who had immigrated from rural Bangladesh (n=3) who had given birth in Bangladesh, two of whom were from rural areas of Bangladesh and one who was from the capital, Dhaka. | Qualitative case study | RQ2: Bangladeshi women rejected attempts to move other, traditionally private areas of their pregnancy and childbearing into a more public arena. At times, religious beliefs and practices were in conflict with the predominately western model of antenatal care. One woman stated that, while she did not intend to fast during her pregnancy, she perceived that pregnancy would not be a culturally acceptable reason not to fast. Another woman stated that, for women who are not religious, they prefer that their western doctor advise that they not fast. |

| | | | | |
|------------------------|--|---|-----------------------------------|---|
| Ozsoy, S., et al. 2014 | 13 primary healthcare centres in Aydin, Turkey | Breastfeeding women with babies younger than six months (n=101) | Cross-sectional study | <p>RQ2: 90.1% of mothers had fasted in previous Ramadans, and nearly 50% reported that fasting in Ramadan in 2010 when they were breastfeeding. Rate of mothers worrying that their breastmilk production could be affected by fasting was quite high (91 %). Age of babies, having the first child and beliefs that a woman can breastfeed while fasting were found to be significantly effective in mothers' fasting behaviour (p<0.05).</p> <p>RQ3: Women's interactions with health providers included receiving recommendations not to fast during pregnancy.</p> |
| Pathy, R., et al. 2011 | Toronto, Canada | <p>Somali and Bangladeshi Muslim pregnant women (n=13)</p> <p>Health providers working in the same neighbourhood where the women lived (n=22)</p> | Cross sectional qualitative study | <p>RQ3: Muslim participants considered the fast to be beneficial to health overall, whereas health care professionals tended to reflect on health concerns from fasting. Many health care professionals were not fully aware of fasting practices during Ramadan and some found it challenging to counsel patients about the health effects of fasting.</p> |

| | | | | |
|---|-----------------------------------|---|------------------------|--|
| Robinson T, Raisler J. 2005 | Southwest Michigan, United States | Pregnant Muslim women, including recent refugees (n=32) | Qualitative case study | <p>RQ2: 28 of the 32 women chose to fast for some time during at least one pregnancy. They value fasting as a practice that contributes to their spiritual, psychological, physical, and social health.</p> <p>RQ3: Recommendations for healthcare provider training to address fasting with pregnant and lactating clients was included.</p> |
| Setrakian HV, Rosenman MB, Szucs KA. 2011 | N/A | N/A | Review | <p>RQ1: In the Baha'i religion, the breastfeeding mother who exercises her choice to abstain from fasting may fast during another time if she wishes but is not required to "make up" for the fast that was omitted while breastfeeding.</p> |
| Sultan, I. E., et al. 2015 | Multiple | Pregnant women | Systematic review | <p>RQ1: Large gaps in knowledge and more large interventional clinical trials are needed. In the light of available research, the majority of pregnant women showed a strong sense of religious obligation and chose to fast, even though some of them did not fully recognize their right to be exempted. There is still no definite evidence that accelerated starvation due to Ramadan fasting during an uncomplicated pregnancy can adversely affect maternal health.</p> |

| | | | | |
|-----------------|---------|--|---------------------------|--|
| Tounzi, M. 2002 | Morocco | Gynaecologists (n=3) Midwives (n=2) | Qualitative case study | RQ1: Physicians differ in their perceptions of whether women should fast during pregnancy, from no fasting at all to fasting between 1 st and 3 rd trimesters, to only for non high-risk pregnancies. Likewise, midwives held different views on when and how women should fast during pregnancy. |
|-----------------|---------|--|---------------------------|--|

RQ1. How does fasting affect women's dietary behaviour during pregnancy and breastfeeding and to what extent are these maintained during these periods?

The majority of studies (n=10) address fasting during Ramadan. Only two studies looked at non-Muslim pregnancy fasting, the Knutsson paper on fasting amongst Orthodox pregnant women and the paper by Setrakian et al. on Baha'i pregnancy fasting guidelines during the month of March (Kaplan et al., 1983; Karl Eric Knutsson & Ruth Selinus, 1970b; Setrakian, Rosenman, & Szucs, 2011). Except for the Ethiopian Orthodox fasting practice of both complete fasting coupled with consuming only non-animal foods, the type of fasting practised by the other religions included in this review consists of the total avoidance of food and fluids during fasting times. That women may not have been aware they were pregnant during the earliest weeks of pregnancy may affect results, such as length of fasting.

Religions that maintain a fasting practice, including Islam, Orthodox Christianity, and the Baha'i faith, include exemptions for pregnant and breastfeeding women (Setrakian et al., 2011, plus, plus). Regardless of exceptions, religious obligation may play a strong role in women's fasting behaviour regardless of a woman's specific religious tradition. Pregnant women generally choose to fast for Ramadan, though the exemption offers the option to defer fasting to a later time, as fasting days must be made up. Baha'i followers could also elect to make up the fasting month at a later time but are not required to as was the case for Muslim women (Setrakian et al., 2011). Both native and immigrant Muslim women chose to fast even when aware of an option to make up the fasting days later and in spite of associated nausea, fatigue, and fever (citations to be inserted). Reasons for fasting during pregnancy included the desire to be a part of the community of those who were fasting, to participate fully in the religious activity of their families as well as not wanting to make up fasting days at a later time (Hoskins, 1992, Harrison et al., 1993).

With the exception of health professionals who were the focus of a qualitative study in Morocco (Tounzi, 2002), none of the included studies looked at the role, knowledge, or perceptions of other stakeholder groups, including priests, imams, or other religious leaders. The Tounzi study found that Moroccan physicians differ in their perceptions of whether women should fast during pregnancy, from no fasting at all to fasting between 1st and 3rd trimesters, to

only for “non high-risk” pregnancies. Likewise, midwives held different views on when and how women should fast during pregnancy (Tounzi, 2002).

Though small (n=5), Miller’s study of Bangladeshi women in the UK looks at the interrelationship of religious beliefs, including fasting, within a wider socio-cultural environment with differing customs. The public (outside the family/home) and private (inside the family/home) allowed some women to be excused from fasting, e.g., when a health provider provides them with an “authority” to not fast that is different from the imam. The extent to which Muslims coming from Bangladesh adapt their traditional practices, such as religious fasting, to fit in with the predominant traditions of British society may depend on whether they migrated from the rural areas of Bangladesh or from Dhaka, the capital city (Miller, 1995). More research is needed to analyse the underlying cultural background in which women who fast are living.

Interpretation and application of religious fasting rules is not uniform across cultures and populations. While most studies focus on the allowances for menstruating, breastfeeding, and pregnancy, the opposite perspective, that women must fast during a healthy pregnancy unless otherwise indicated, does exist (Joosoph et al., 2004a). For Muslim women, the literature also does not provide a clear picture of whether women are aware of the exemption to fasting (Joosoph, Abu, & Yu, 2004; Sultan, Taha, & Hassanein, 2015).

For breastfeeding women, nearly 50% of in one study reported that they fasted in the previous Ramadan when they were breastfeeding (Harrison et al., 1993). The mother’s decision to fast may play a role in timing of weaning and introduction of solid foods before infants reach six months of age. A high number of breastfeeding women who fasted, however, expressed concern that their milk supply would decrease and viewed supplementation with solid foods as an acceptable measure for the month (Jessri et al., 2013, Ertem et al., 2001). Fasting during summer months may increase a woman’s perception that her milk supply will be inadequate due to refraining from food and fluid for long periods of time and influence the decision to wean before the fasting month commences (Harrison et al., 1993).

RQ2. How do women’s socio-demographic characteristics and social/cultural and structural factors influence fasting behaviour amongst pregnant and/or breastfeeding women?

There is a lack of research on the socio-demographic characteristics and structural factors that contribute to women fasting when they are pregnant or breastfeeding. The single study on Ethiopian Orthodox Christian fasting did not address RQ2-related factors. Only two studies were identified that looked at socio-demographic/socio-cultural and structural factors among women who fast. Using the Born in Bradford dataset, the Petherick study focused on pregnant Muslim women of Pakistani and Bangladeshi origin in the UK. The study found an associative relationship between fasting and parity and body mass index (BMI), with women with a BMI labelled as obese and those with higher parity more likely to fast. Women in the first and second trimesters of pregnancy were also more likely to report that they were fasting. Higher educational achievement was associated with greater likelihood of fasting (Petherick, Tuffnell, & Wright, 2014).

The Ozsoy study of Turkish women who were breastfeeding found that mothers who fasted while breastfeeding were slightly older, had higher parity and lower educational levels, and were more likely to have started giving their babies other food, e.g., tea, formula, water. Of the 43 women who reported believing that fasting deteriorated breast milk production, 35 continued to fast.

Fewer women mentioned social pressure either from family or external community (Joosop et al., 2004). “Far from being a hardship or form of self-imposed suffering, Muslims value fasting as a practice that contributes to their spiritual, psychological, physical, and social health” (Robinson & Raisler, 2005).

RQ3. What interventions that target cultural and religious factors have been employed and how effective and acceptable have these been?

There were no behavioural interventions identified in this scoping review. Several studies recommended that behavioural and health promotion interventions should be undertaken, considering the extent to which women seem to continue fasting into pregnancy and during lactation, such as educational campaigns targeting Muslim women and provider training on the

issue of religious fasting in healthcare settings (Pathy, Mills, Gazeley, Ridgley, & Kiran, 2011; Robinson & Raisler, 2005; Tounzi, 2002). The Ozsoy study also noted that 88% of study participants reported that a health provider had inquired if they were fasting; only 8% of mothers themselves inquired of a health provider about whether they should fast. Those women who asked a provider or were asked by a provider about fasting were given a recommendation by the provider that they should not fast (Ozsoy, Adana, & Hazar, 2014). Whether fasting during pregnancy and breastfeeding is approached as a problem and contradiction to religious teaching or not is not always explicitly stated, but has implications for behavioural interventions, including health message development.

5.5 Strengths and limitations

One of the strengths of this review is that its scope was purposely broad without limitations on study type or size or with regards to religious, cultural, or geographic variables of the study population. The review of these questions was unprecedented and provided a useful exercise in focusing on women-centred approaches rather than a focus on outcomes related to maternal and child health that do not examine a key element of the socio-cultural context in which these occur. This review also allowed identification of discrete gaps in our knowledge of fasting in this particular health and cultural context.

Limitations of this literature review were the exclusion of non-English language studies. Only one study of Orthodox Christian women was identified. Possible reasons for the limited availability of literature on Orthodox fasting during pregnancy or breastfeeding may be that data exists but is not published or exists in anecdotal form.

The difference in fasting practices between Muslim and Orthodox may lead to different outcomes in the populations studied, and this may limit generalizability of review findings. The longest fasting period observed was 10-19 consecutive days by Muslim women, whereas the Easter fast for Ethiopian Orthodox is fifty-five consecutive days. In addition to dietary differences, the cyclic nature of both Ramadan and the Orthodox Easter fast, the longest fast of the Orthodox religious year, are based on lunar phases. While the Ethiopian Orthodox *Fasika* (Easter) fast moves within a maximum range of two months each year, the month of Ramadan cycles throughout different months year after year. European, Middle Eastern, and North

American countries with considerable variation in the length of days throughout the year will have a variation in the length of fasting hours per day, depending on sunrise and sunset times. Cultural context may also affect fasting practices. Fasting amongst Orthodox or Muslim women who have immigrated to other countries may differ from those of women in their native context where fasting is normative.

Based on the results of the initial stage of the scoping reviews, the choice of this methodology above a traditional literature review appears warranted. My experience was that the progression of the study over time, discussion of my research topic with public health and nutrition professionals in Ethiopia, and presentations of my early study findings yielded relevant studies for the scoping study in Stage 3/Consultation. This was an area where I found the iterative nature of the scoping methodology particularly useful, and this phase covered a longer period of time than I originally conceived. With the advantage of perspective, a useful addition to the consultation stage of the scoping review would have been to ask stakeholders what questions they have about fasting in pregnancy so that this information could be used to further focus and refine review questions (Mays and Pope, 1995).

Interest in this topic has grown in the time work on this thesis began. While still primarily a topic adjacent to other areas of primary interest, one paper was identified after completion of this scoping review that has particular relevance to this study. The Bazzano et al. study of IYCF in Ethiopia was a qualitative study included both Muslim and Christian women in four regions of Ethiopia, including Amhara Region, and found that fasting constitutes an integral part of dietary practices amongst women. The authors concluded that understanding this sociocultural context can be integrated into targeted nutrition programming for women and children (Bazzano, Potts, & Mulugeta, 2018). Using focus group discussions and in-depth interviews, the study focused on the physical effects of fasting on PLW and notes that these may not necessarily be detrimental, aligning with most of the available data on PLW fasting outcomes included in this review. The authors further note the possibility that effects could also be positive but do not explore this within the wider concepts of religiosity and women's agency and their relation to broader understandings of health and well-being.

5.6 Applicability to research topic

Considering the social and cultural context of women and children's health that was introduced in Chapter 4 and the importance of optimal nutrition during the first 1,000 days of life, this scoping review introduced the evidence base on religious fasting practices among women.

While this scoping review identified diverse literature on the custom of religious fasting during pregnancy and breastfeeding, there remain gaps in knowledge, including a dearth of information on Orthodoxy's particular form of fasting during these periods, e.g., frequency, duration, prohibited foods. The evidence is unclear as to whether there are multiple understandings of fasting rules and how these influence women's interpretation of whether she has a choice in fasting as well as which set of rules she may be break by fasting, her doctor's or her religion's. Conclusions from the literature reviewed for four of the religious traditions that incorporate fasting cannot necessarily be applied Orthodox women. In particular, this review highlights some key concepts about Orthodox fasting that should be considered.

Specifically, issues related to the cultural and social and structural influences on fasting during pregnancy and breastfeeding should be examined in order to answer important questions about how fasting during pregnancy and breastfeeding are perceived by Orthodox populations within Ethiopia and the contextual background of undernutrition. There was some evidence from the literature that these influences did affect fasting behaviour amongst Muslim women.

The contribution of this research activity will be to help fill this gap in knowledge by studying the influence of person-related and social/cultural environmental determinants of fasting amongst Orthodox women who are pregnant or breastfeeding. Key findings from this review, such as women's perceptions of fasting and their decision-making related to fasting, especially as it relates to wider family and community norms and networks, need to be explored within the Ethiopian context. In addition, whether women are informed of their option not to fast during pregnancy and breastfeeding is another review finding that will be explored, particularly in light of recent fasting guidance from the EOC on this issue. These findings inform the study's direction of generating information about how Orthodox women in Ethiopia experience the linkages between information, behaviour, and broader societal structures that result in their

fasting behaviour. This focus requires an analytic framing that considers this complex range of influences.

Chapter 6 will focus on the theoretical framework used to interpret the data.

6 Theory

In this chapter I define and provide a rationale for the theoretical approach used to interpret data from amongst other available theoretical approaches. As a complex and multidimensional domain of life, religion encompasses a range of attitudes, behaviours, and experiences (Ellison & Levin, 1998). Dietary behaviour, such as fasting, is also influenced by a complex intermingling of determinants. While interpersonal determinants and family and social relationships influence an individual's dietary behaviour, the broader contextual background, including availability and accessibility to food, and institutional influences also contributes (Contento, 2008). This study draws upon an interpretive approach to develop an understanding of the phenomenon of Orthodox religious fasting and its relation to maternal and postnatal dietary behaviour in Ethiopia.

6.1 Social Ecological Framework

The overarching framework of this study is a social ecological perspective that recognises multiple levels of influence on behaviour, from the deeply personal (individual) to the environmental (beyond the individual) influences on Orthodox women who are fasting while pregnant and breastfeeding. It also acknowledges, as outlined in Chapter 3, the nascent stage of information on the dynamic complexity and full contextual reality surrounding fasting-nutrition issues in Ethiopia and attempts to understand how women are influenced at various levels within the framework while they are pregnant and breastfeeding (Lounsbury & Mitchell, 2009).

The Social Ecological Model (SEM) recognizes that health is affected by a diverse and sometimes competing, sometimes complementary, set of forces. Women's fasting includes the kinds of shared meanings and rituals included in Urie Bronfenbrenner's original concept of the interrelations of person and environment that contribute to an the understanding of women's religious fasting experiences while pregnant and breastfeeding (Bronfenbrenner, 1994). Bronfenbrenner's themes of social influences on human development was used to organise data in a way that allows fasting to be neither completely static nor necessarily in constant flux, but that can change based on women's reprioritization of these influences.

SEM can also generate research outcomes that give insight into this dynamic interaction of individuals with their environment across time and space (Lounsbury & Mitchell, 2009).

Lounsbury and Mitchell define good social ecological research as having a valid ecological unit of analysis that is self-generated (naturally occurring), given a specific time-space locus, and internally constrained (Lounsbury & Mitchell, 2009). For the purpose of this study, the ecological unit of analysis is the fasting year, comprising the approximate 250 days of fasting of the Ethiopian Orthodox religious calendar.

Though individual level determinants of diet are significant, these do not exist in parallel but instead interact with the “social causation of disease,” as McLeroy et al. term an ecological approach, in which health results from the interaction of people and their social and physical environments (Weiner et al., 2012, McLeroy et al., 1988). In the case of Ethiopian Orthodox fasting, the social ecological model acknowledges the multiple, sometimes competing, layers of influence on women’s dietary behaviour. The time-based dimensions of fasting have their beginning at the age of seven and are further intersected over a woman’s lifespan by such transitions as adolescence, pregnancy, and motherhood the latter two of which are the focus of this study (Disha et al., 2015).

The ecological systems that are represented in SEM can also help explain possible differences in settings based on the specific forces that influence these (Sallis, Owen, & Fisher, 2008). For example, there may be differences between women’s fasting behaviour in different families and rural versus urban communities, as well as similarities.

6.2 Social Ecological Model: Levels of influence

This study draws on multiple spheres of a social ecological model of fasting for pregnant and breastfeeding women. Table 4 provides a brief description of the five spheres of influence of the SEM: Individual, interpersonal, community, organizational, and policy/enabling environment.

Table 4 Social Ecological Model: Levels of influence

| Level of Influence | Description |
|--------------------|-------------|
|--------------------|-------------|

| | |
|------------------------------------|--|
| Individual | Characteristics of an individual that influence behaviour change, including knowledge, attitudes, behaviour, self-efficacy, developmental history, gender, age, religious identity, racial/ethnic identity, sexual orientation, economic status, financial resources, values, goals, expectations, literacy, stigma, and others. |
| Interpersonal | Formal (and informal) social networks and social support systems that can influence individual behaviours, including family, friends, peers, colleagues, religious networks, customs or traditions—particularly those learned early in life. |
| Community | Relationships amongst organizations, institutions, and informational networks within defined boundaries, including the built environment, village associations, community leaders, businesses, and transportation. |
| Organizational | Organizations or social institutions with rules and regulations for operations and their ability to affect the health of an individual or group. |
| Societal/Policy Environment | Societal norms, religious and cultural belief systems, state, national and global laws and policies, including policies regarding the allocation of resources for maternal, newborn, and child health and access to health services, restrictive policies or lack of policies. |

Adapted from “The Social Ecological Model: A Framework for Prevention, U.S. Centres for Disease Control and Prevention (Centers for Disease, 2002).

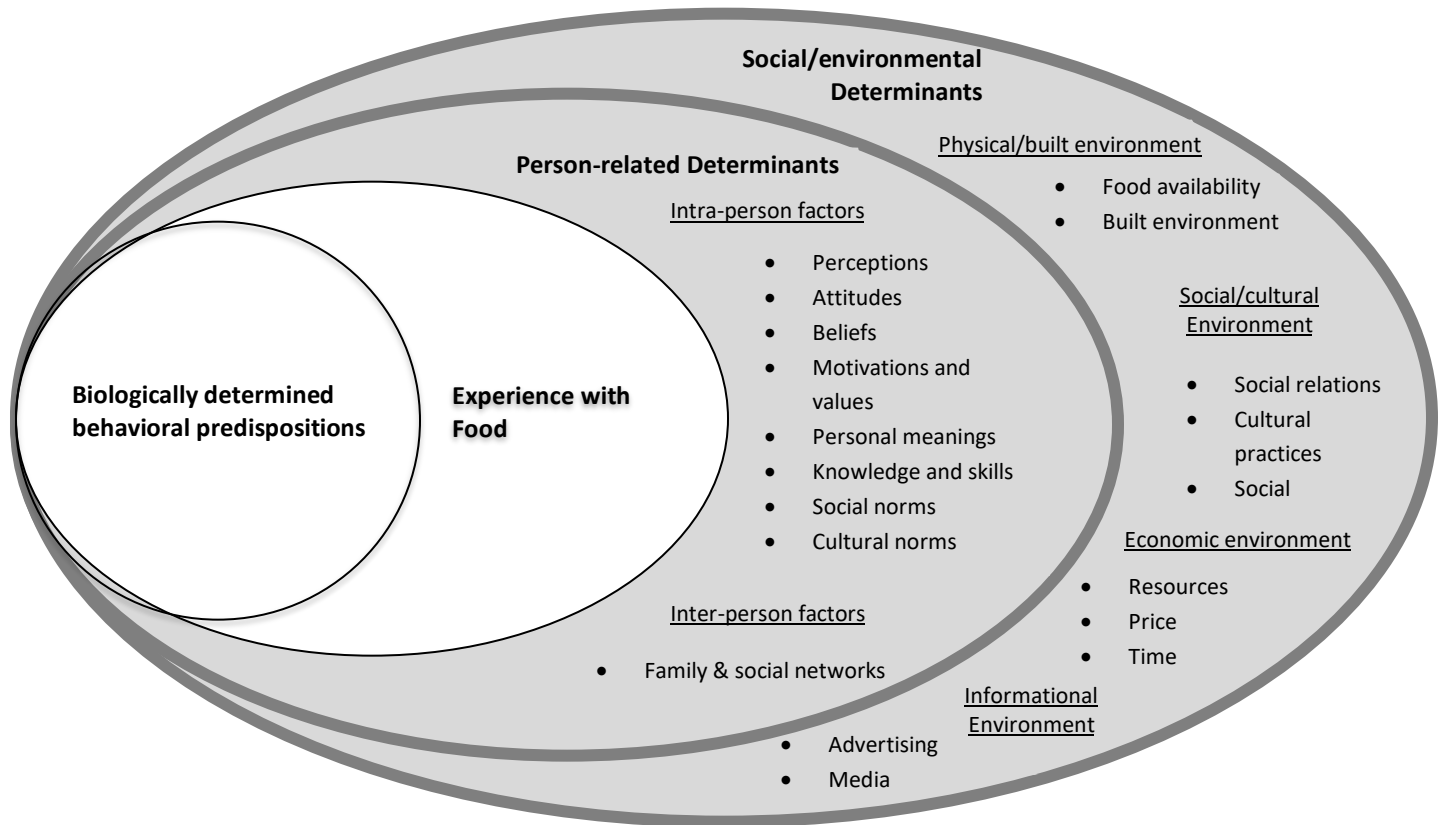
SEM has also been utilized for understanding a variety of health issues beyond nutrition, including the healthcare seeking behaviour of women and girls across multiple country contexts, for example to design programmes aimed at overcoming barriers to utilization of women’s health services and behaviours, including the promotion of skilled birth attendance at delivery, exclusive breastfeeding, and prevention of mother to child transmission of HIV (Shahabuddin et al., 2017, Gombachika et al, 2012, Buzca, J. et al., 2012). SEM also provides a means to trace cross cutting elements such as gender and autonomy in health decision making across levels of influence in order. The ability to seek out and decipher multiple elements of influence aligns more readily with reality of women’s lives as a complex interaction of various elements rather than discrete and disconnected phenomena. Recognizing its contribution to providing a framework for issues surrounding nutrition, Contento’s ecological model for food

choice and dietary behaviour is shown in Figure 6. The Contento model applies the levels of SEM to diet and shows the contribution of both the social and individual factors that contribute to the complex food choice process (Furst, Connors, Bisogni, Sobal, & Falk, 1996).

The utility of SEM in formative research on emerging areas of public health interest is also valuable, given that little published or grey literature related to the areas of enquiry is available (Newes-Adeyi et al, 2000). Multisectoral approaches to nutrition are identified as critical for nutrition programmes that are broad enough to create the needed impact on high levels of stunting and maternal anemia as those found in Ethiopia; therefore, SEM's inclusion of multiple levels of influence allows detection of institutional influences with existing and potential policy and guideline implications for health behaviours. Defining multisectoral approaches to nutrition requires bringing together a wide array of stakeholders guided in action through analysis of what may appear to be, in their singular form, disparate underlying contributory aspects of nutrition. SEM lends itself to defining and applicable multisectoral actions by identifying social ecological linkages across levels of influence and highlighting possible areas of collaboration.

Areas that will be explored in this study include the social conditioning to fast, the norms and attitudes surrounding fasting, and the social determinants, including social structures, that influence fasting. Further information may be introduced to analyse, for example, food availability and its influence on fasting practice. Broader changes at the societal level, if needed, require modification "in the behaviour of those who control or influence those critical conditions" and are discussed among the recommendations in Chapter 10 (Simons-Morton, 2013).

Figure 6 Determinants of food choice and diet-related behaviours



Adapted from Contento et al., 2000

Nested within the social ecological framework, social norm frameworks for gender and religion can provide a valuable lens through which to view fasting behaviours. Women and children are disproportionately affected by under nutrition, and gender norms and women’s status has been linked to the nutritional status of both women and their children (Verhart, van den Wijngaart, Dhamankar, & Danielsen). While gender norm frameworks may focus on issues of power and empowerment relevant, they may unnecessarily narrow to easily accommodate other influences on fasting that are highly context driven. Given that women’s empowerment may be highly linked to the context in which that power is derived, viewing women’s fasting through a singular lens such as gender has the potential to obscure other elements of equal importance. Further, gender norms may be examined within a social ecological framework for fasting given that gender norms are influenced at multiple layers of SEM.

Religion-focused frameworks are similarly useful to understand fasting. As Ellison and Levin contend, religious norms [may be] highly internalised by group members and may induce members to conformity, including altering lifestyle to align with fellow members (Ellison and Levin, 1998, p. 704). Beyond an increased understanding of the more direct relationship between religious fasting and maternal and child health outcomes, both positive and negative indirect associations may be experienced. At an individual level, these would include such relevant mental health associations with increased feelings of well-being and coping mechanisms in response to stressful events. Those most relevant to this study include interpersonal microsystems within which an individual's dietary behaviour is influenced by roles within the family and community as well as larger socio-cultural norms, including gender and age. The Ethiopian Orthodox Church and its role in influencing fasting are part of the mesosystem of organisational factors, while exosystems are community-level influences that may include differences linked to regional and urban-rural variations in dietary behaviours (Raingruber, 2014). While useful in highlighting micro and macro spheres of influence for religious fasting, similar to gender frameworks, the potential limitation of these models is a tendency to overestimate the outcomes of religiousness (Ellison and Levin, 1998).

In viewing the systems and processes associated with the Social Ecological Framework, this study will generate findings that can be applied to a public health framework through which to focus programmatic action to address under nutrition for mothers and children in Ethiopia (Simons-Morton, 2013). Social Ecological Framework creates adequate space for a multi-stakeholder application of findings consistent with the need to engage multiple sectors in addressing the complex and inter-connected issues relevant to nutrition noted in Chapter 4 (SUN, 2014).

While all theoretical approaches possess inherent and practical, the use of SEM for newer areas of interest within women's health and nutrition in Ethiopia was assessed to be highly valuable. While recognizing the importance of a certain context that exerts influence on what women eat, it provides great flexibility in defining these influences and the ways in which they act upon and influence each other. Through the analytic lens of the Social Ecological Framework,

qualitative methods will be used to allow exploration of the human-environment relationship that contributes to Orthodox fasting behaviours during pregnancy and breastfeeding.

Chapter 7 will focus on the methodological approach that will be used for this study.

7 Methods

In this chapter I will:

- Outline the rationale for the selected research methods
- Describe the research methods
- Describe the ethical considerations used to protect study participants

7.1 Research aims and research questions

The overall aim of this research is to:

- Increase our understanding, using a socioecological approach, of how and why Ethiopian Orthodox women observe religious fasting during pregnancy and when breastfeeding through their own accounts

Research questions to be answered:

1. How do women fast—if at all—during pregnancy or while breastfeeding?
2. What are the social and person-related factors that contribute to fasting behaviour during pregnancy and breastfeeding in Ethiopia?
3. What are the perceived advantages and disadvantages of fasting during these periods?

7.2 Research methodology

This study utilized a qualitative research design. A qualitative design is seen as the most appropriate approach due to the lack of evidence and understanding around experiences/perceptions of Orthodox fasting practice during pregnancy and breastfeeding and the ability to ask nuanced questions to explore the topic and emerging themes in detail.

Qualitative methodologies constitute valuable health science research designs that allow refinement of research agendas, mapping of emerging research areas, understanding health experiences, and identifying the potential application of further research activities (Boeije, 2009). As qualitative studies answer questions of how, what, and why, this is an appropriate design for this study, given the intention to answer the research questions defined above (Green and Thorogood, 2013). In addition, the ability to incorporate an iterative and flexible approach in exploring a complex and contextually-based behaviour such as fasting is important.

7.3 Methodological Approach

A basic underpinning of grounded theory is that social phenomena are not static and undergo change as a result of surrounding environment (Corbin and Strauss, 1990). While a full incorporation of grounded theory was not utilized, some aspects of grounded theory were incorporated to inform a social ecological model of interpreting Orthodox religious fasting in Ethiopian society (Glaser & Strauss, 2009). By continuously interacting with the data, grounded theory assists in avoiding misinterpretation of data by requiring a constant and deep delving into analysis along the stages of data collection (Charmaz & Smith, 2003). This repeated reflection on data assisted in the formation of a meaningful understanding of complex phenomena such as religious fasting (Strauss & Corbin, 1994).

Inducing patterns within and between the levels of influence on maternal fasting that informed an understanding of the social processes and individual understandings which experimental approaches would not adequately address (Green & Thorogood, 2013). It provides a framework for the incorporation of this contextual environment, as the theory seeks to unearth the interaction of conditions that are at play (J. M. Corbin & Strauss, 1990).

Because a social ecological model will evolve along the course of the study's implementation, continuous analysis of collected data and application of outcomes to theory is critical. The timing of data collection and analysis was designed to be synchronistic rather than sequential, with sufficient time built in for continual comparative analysis.

7.4 Study setting

The setting in which qualitative research takes place is important to set the scene in which fieldwork occurred but also provide a description of the context in which participants in the study live. As in other parts of the country, outward symbols of religion are apparent. The sight of an Orthodox priest in his vestments walking down the street; rural women with crosses tattooed on their foreheads; both urban and rural men and women wearing wooden crosses around their necks. A common urban street scene is meat shops that are marked as Christian or Muslim, indicating that their products adhere to religious food handling rules. From morning and well into evening, the sounds of the call to prayer or church services can be heard

daily throughout the year. In most urban and some rural settings, these are broadcast via loudspeakers from both churches and mosques. On specific days commemorating saints, entire urban streets will be blocked with around churches by people wearing all white making their visit on foot.

Photo 1 Urban Christian meat shop



While Bahir Dar is a bustling city, streets filled with cars, bicycles, tuk tuks (three-wheeled motorcycles) and pedestrians alike, hotels situated next to Lake Tana, men fishing with nets in the lake, a major university, cafes and restaurants, but still a relaxed pace of life compared to Addis Ababa. A security presence is seen and felt, and an assortment of young police officers is always milling around.

Paved two-lane roads lead out of the city in several directions. Along these roads are larger villages or small towns, with people wearing a mixture of more modern and some traditional clothing, punctuated by the occasional large commercial operation. There is great diversity in ethnic groups and languages in rural areas, sometimes differing from one village to the next. Driving off the main road, the scene begins to change dramatically as it becomes more rural. The roads are unpaved. The distance between groupings of tukuls (traditional circular houses made of mud) grows larger. There is a high youth population which is visible in groups of

children walking to and from school wearing uniforms. Not all children attend school, and the daytime sight of young boys tending fields or herding goats and young girls carrying water becomes more frequent. It becomes less and less likely to see Western clothing in these areas. A rural custom not seen in Bahir Dar is that some women shave their hair. Shoes are often in the form of plastic sandals, but women in these areas may cover large distances barefoot each day. A steady stream of people is everywhere, and all land is occupied in one way or another. On market days, it is possible to see long lines of people walking several kilometres to buy or sell animals or ingredients for cooking or for other household supplies. People work their small tracts of about two hectares of land, which may be barely sufficient to meet their needs. Farm machinery is uncommon. Instead they are in fields working with their hands, hoeing or utilizing animals for ploughing.

7.5 Local study advisory committee

A local study advisory committee (LSAC) helped guide work by strengthening community participation of in the research process and contributing to incorporation of local context throughout the planning, implementation, and post field work research phases. Participants included a nutrition expert, a representative of the Amhara Public Health Institute, a priest, and a Health Extension Worker. The LSAC met four times prior to data collection, twice during data analysis, and once at the conclusion of data collection and analysis. The LSAC has provided input into content and cultural appropriateness of the participant referral card and study information sheet and their feedback was incorporated into revisions to the interview topic guide (Appendix 5), identification of appropriate support services in the community for participants who required or requested information or support during the course of data collection, and has assisted with identifying useful local channels for dissemination of study results. While the LSAC was informal in nature, each member agreed to participate in person and/or by email over the course of the study. Our group discussions on the topic guide or presentation of preliminary research results not only provided me with valuable feedback from multiple stakeholder points of view, local engagement and interest in the process validated the relevance of my research focus.

7.6 Participant selection

A purposive sample of up to 20 participants, split between rural and urban, was taken from the pool pregnant and breastfeeding women in consultation with Health Extension Workers, a cadre of public health workers who maintain a list of pregnant and recently delivered women in their catchment areas. I purposively sampled to ensure representation of pregnant and breastfeeding women and both nulliparous and multiparous women. While a convenience sampling is not meant to be representative or lead to data saturation, a rural-urban variable criterion was used to ensure some diversity in participant selection. With a small sample size, this increased the likelihood that a more robust construct of fasting can be formed. It may be that there are differences not only in beliefs about fasting between rural and urban women but factors, such as availability of foods in different geographic locations, which affect whether and how women fast.

7.6.1 Sampling strategy

Inclusion criteria were women who were Ethiopian Orthodox Christian and either pregnant or breastfeeding. Participants were also able to reflect on fasting experiences during previous pregnancies and breastfeeding experiences.

All potential participants were first reached in the weeks prior to the study via leaflet disseminated through the Health Extension Workers during routine ante- or post-natal visits with women in their homes or at a health post. For the first group of interviews, women who were planning to attend a Pregnant Women Conference were invited to participate in interviews. The second group of interviews took place at women's clinic at a hospital in Bahir Dar. The third group of interviews took place in a Health Extension Worker (HEW) catchment area in a neighbourhood of Bahir Dar. The fourth and final group of interviews took place during a routine Sunday women's health talk organized by HEWs outside the local church. On the day of interviews, women who were interested in participating in the study were invited to learn about the informed consent process and, if still interested, to be interviewed. Photos taken at three of the four interview locations are included below. The rural Picolo health centre interview room, the interviewer in the interview room at the Felegehiwot ANC urban site, and an image taken from the rural church interview site, from the interviewers point of view of the

interviewer as rural women carry cinder blocks nearby. Because the rural church interviews were in the open air, they took place around normal community activities happening outside the church. Photos of the second urban interview site are not included here because they took place inside women's homes often with their newborn or older children in view.

Photo 2 Scenes from rural and urban interview sites



**Picolo Health Centre
rural interview site**



**Interviewer at urban
ANC clinic interview
site**



**Church rural interview
site**

The selection of HEWs as the main interlocutors and first point of contact with potential participants was chosen for two reasons. First, the study was likely the first time that women had participated in a research activity. Ensuring that women trusted and were comfortable with the research process was both an ethical and design priority. The qualitative design of the study relies on women's ability to discuss freely their opinions on a health matter which necessitates that they feel the information they share is respected and protected.

The second reason for involving HEWs was that they are members of the community that they serve. As such, they would remain connected with participants should any need for post interview follow up arise, for example, if a participant requested additional information about the study.

To minimize potential selection bias, I met with each HEW twice prior to selection of participants to ensure the selection process was well understood and consistent across the sites. Through the translator, I also kept in contact with HEWs via telephone as the interview dates approached.

7.7 Sample description

Twenty women were interviewed in two locations in Amhara Region, Ethiopia. Four women were breastfeeding and 15 were pregnant at the time of interview. The majority of women interviewed had more than one child. For five women, this was their first pregnancy. Ages, when known by the women, may have been estimated because rural participants did not always know their exact birthday. Table 5 summarizes the characteristics of participants. One woman declined to be recorded. While the interviewer took notes during the interview, after these were translated into English, I concluded that they were insufficient to include in the data set.

For most if not all participants, their participation was their first experience with a research study and, as one woman noted, it may have been the first time anyone asked for their opinions about fasting. Women were not experienced with the informed consent and interview processes and required significant prompting during the interview.

Table 5 Participant profile

| | Pregnant | Breastfeeding | Primigravida | Primiparous | Multiparous |
|-------|----------|---------------|--------------|-------------|-------------|
| Rural | 10 | 1* | 1 | 1 | 8 |
| Urban | 5 | 4 | 4 | - | 5 |

* One pregnant woman was also currently breastfeeding.

7.8 Data collection

To explore how social norms shape dietary behaviours, semi structured interviews with pregnant and breastfeeding women were used. Focus group discussions were also considered for their role in obtaining information on social norms, but ultimately not chosen due to their limitation in obtaining information about individual behaviours, and women may be unwilling to share views in a group setting, for example, if the cultural norm is to fast during pregnancy but a woman does not.

No single method will entirely address the multiple facets of a corresponding research question and the use of more than one method can be used as a strategy to lessen the weaknesses of any single method and reduce data bias (Flick, 2009). While interviews with women were the singtrale method of capturing their fasting experiences in this study, using a constant comparison technique enabled the validity of each interview to be substantiated (Anderson, Claire, 2010). Organising individual interviews of three to five women in the same afternoon and scheduling time between each group of interviews allowed adequate time to look at each translated interview separately but also as part of a whole when compared with previous interviews.

An interview topic guide (Appendix 5), informed by the theoretical framework and findings from the scoping review, was developed to gather data from participants in the two selected communities. The guide was structured according to three main areas: warm up and introductory questions on fasting social norms, questions on fasting behaviour, and questions specific to fasting during pregnancy and breastfeeding. A pre-testing of the guide took place with members of the LSAC, including the Health Extension Worker in Addis Ababa, and their feedback used to revise the tool before it was used with participants.

The role of the researcher in attitude, experience, and knowledge affects all aspects and stages of the research process, including the choice of research topic and methods chosen. Yet, while all researchers inherently bring preconceptions, whether known or uncovered over the course of the research process, it is a systematic and transparent understanding of these, or reflexivity, that is critically needed (Malterud, 2001).

Steps taken to foster reflexivity:

1. Maintained a researcher journal that includes entries reflecting on decisions made at each stage of the research process and how my attitudes, perspectives, and beliefs may have affected these.
2. Included a written cataloguing of women's perspectives, values, and beliefs as part of the analysis and write up.
3. Dialogued with Local Study Advisory Committee members to triangulate similar and divergent understandings of the research context and data as they emerged.

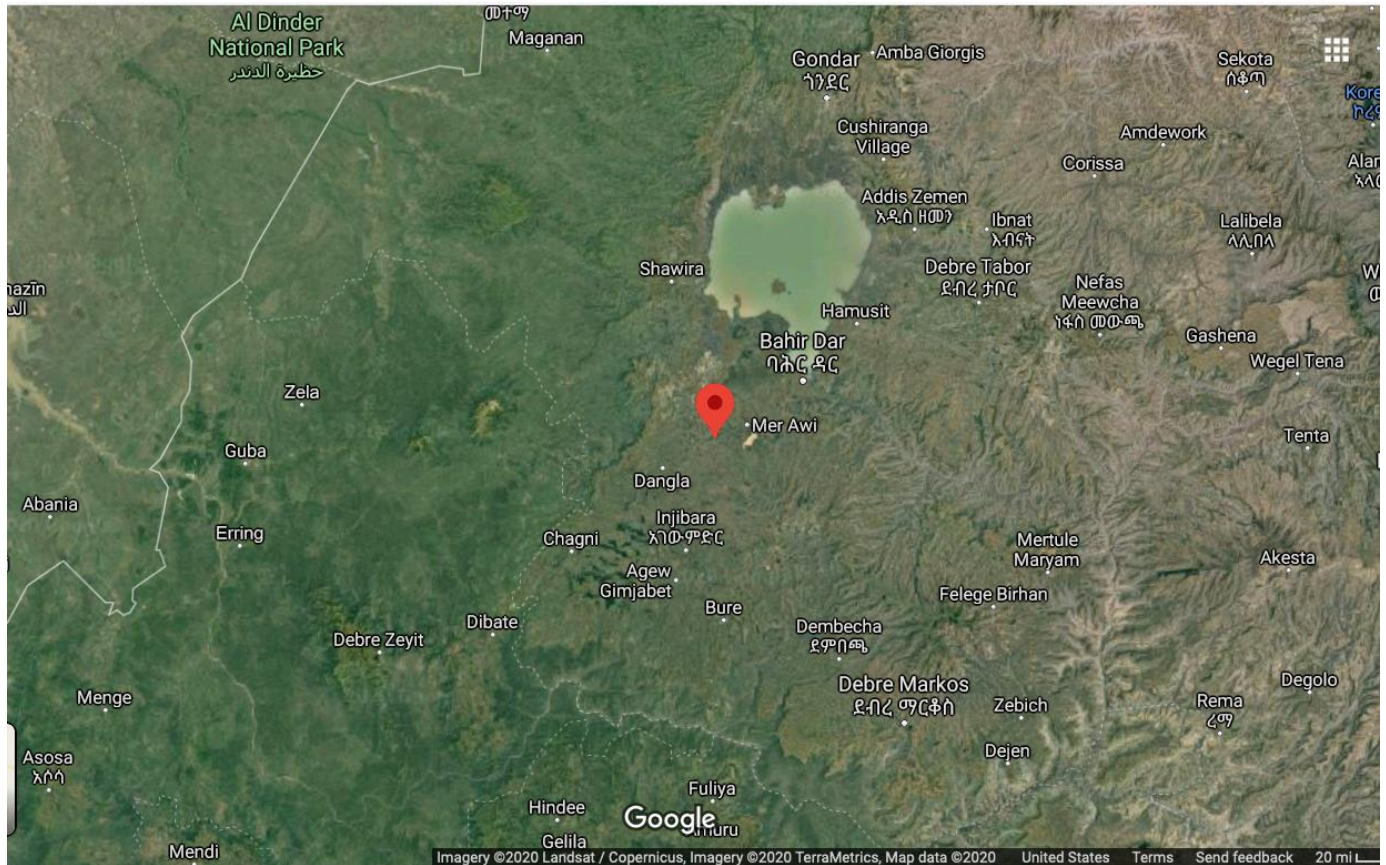
No women discontinued the interview. One woman did not consent to audio recording of the interview. With the permission of participants and as long as my presence did not present a distraction to the process, I was present for all interviews and recorded notes, capturing non-verbal information, e.g., body language and expressions. Daily post-mortem of interviews included a discussion on my continued presence in subsequent interviews. Neither the interviewer nor I detected a negative effect from my presence and agreed that it was beneficial for me to continue my observation of interviews.

At the end of each day of interviews, the interviewer and I debriefed on each interview separately and how the interviews compared and contrasted with each other and previous interviews. To enhance responsiveness and explore new areas that arose in prior interviews, the interview guide was amended. An example of this was the introduction of a question on the consumption of a local alcoholic drink called *t'ella*.

Data collection took place in two locations (Figure 7), one urban and one rural setting in Amhara. The urban location was the city of Bahir Dar, the capital of the Amhara Region, and two rural locations near the town of Picolo. Amhara Region was easily accessible by air from Addis Ababa, where the interviewer and I were based. Picolo is a driving distance of thirty-five kilometres south from Bahir Dar. Informed by community norms and key informant input, the primary objectives of the interview setting were privacy and freedom from distractions and interruptions, though this was not always achieved. Health facilities were selected for two sets of interviews, one rural and one urban. The remaining interview groups took place in women's

homes and next to a church. Interviews were scheduled for mornings rather than afternoon so that they would not interfere with participants' ability to eat when they broke their fast after 3:00 p.m.

Figure 7 Googlemap of Bahir Dar and Picolo locations



Offering childcare for study participants was considered during the methodological design phase. There was mixed support for this among LSAC members. Some felt that in a rural context it would be viewed as a cultural anomaly that might distract from the interview process, as children are not under tight supervision of adults during the course of the day and other family members, such as older children or grandparents, typically watch younger children when the mother is working around the home. Other members of the LSAC felt that having an outsider provide childcare would be viewed favourably by mothers. Ultimately, only one group of urban interviews took place in women's homes. Because urban women normally employ house helpers who provide childcare duties, it was not necessary—and was viewed as being more invasive—to introduce an additional person for this purpose.

There were no travel costs associated with women's participation in the study. Interviews took place in women's homes or where women normally gathered, i.e., at a health facility or at church.

Interviews were recorded with more than one digital recorder to prevent loss of data due to device failure or human error, for example, accidentally deleting an interview or forgetting to start recording. The average interview time across all sites was around 30 minutes, excluding the informed consent process. After each interview, information was transcribed, translated to English, and back-translated to Amharic to verify its accuracy. Transcription and translation from Amharic to English were performed by two separate people. It would have been preferable to have third person back translate from Amharic to English and compare this with the original English interview transcripts. Instead, the original transcriber performed the back translation and compared with her original Amharic transcription. Though transcribed interviews were not returned to participants for their comment, the interviewer reviewed English transcriptions as they were available, cross-referencing with her interview notes. It should be noted that Ethiopia uses a different system of telling time, with an approximate six-hour difference between the clock elsewhere. The 24-hour Ethiopian clock begins at sunrise. For example, when the non-Ethiopian clock says it is 10:00 a.m., it is four using the Ethiopian clock. Where women described the timing of fasting or other activities marked by the clock, these were "translated" into non-Ethiopian time system during transcription. The English interview transcripts and description of times in the Results chapter use times converted to the non-Ethiopian clock.

7.9 Data analysis

With the "primary purpose of the inductive approach is to allow research findings to emerge from the frequent, dominant, or significant themes inherent in raw data," an inductive strategy to reviewing and analysing data was used to identify and explore themes through an ongoing and iterative process (Thomas, 2006).

Analysing qualitative data can be challenging, given the volume of complex information derived through methods such interviews and the reality that people can differ in their experience and understanding of phenomena such as fasting. The emergence of an understanding of fasting

may occur non-linearly; as data are collected and analysed, they may point subsequent focus in a direction that cannot be entirely anticipated and must be attentive to minority views, for example, women who do not fast and their perspectives (Bandawe, 2012). As data collection and analysis progressed, recurrent themes and patterns began to emerge, as well as exceptions from SEF, that made these data patterns unique. They were sorted with the aid of the Social Ecological Model. NVivo10 software was used to aid in centrally managing data from all sources as well as provide a tool for coding and classifying data and detecting patterns and themes from participant responses.

Though greater rigour may have been achieved through double coding, as this work forms part of a doctorate, I was the sole person coding data. I engaged in regular meetings with my supervisions to discuss the coding framework and required refinements throughout the entire process of data analysis.

To assist with analysis, the SEM helped to provide initial structure, label and define the data as well as assist with a coding plan for analysis, though themes were not constrained by SEM levels. The link to grounded theory during analysis is critical, as it revolves around the cyclical process of using data analysis to identify emergent themes, develop conceptual labels, and inform subsequent data collection stages. The analysis aimed to accomplish the following (Mays and Pope, 1995): Reviewing data both during the interview period and after all interviews have concluded, identifying themes and relationships in the data and organize data into groups, coding data, interpreting data, reducing, and displaying data, and drawing conclusions.

Therefore, preliminary data analysis began as the interviews were conducted and areas for deeper exploration began to emerge that were explored in further detail during subsequent interviews. One example of this was the emergence of the term *t'ella*. It was first reported during the 4th interview. Through post interview debriefing, I was able to gain a basic understanding of the concept of *t'ella* which provided an opportunity to communicate to the interviewer that this was a topic to inquire about in subsequent interviews.

7.10 Ethical considerations

The collection of data, including how they are collected, documented, and interpreted, should benefit or, at a minimum, should not harm study participants (Patton, 1999). Protection of study participants and minimizing risks to them is not a one-time event but was implemented as an ongoing process through the timeframe of the study and beyond.

7.10.1 Ethical Clearance

The LSHTM Ethics Application and CARE Form was submitted in LSHTM Ethics Online (LEO) and approved on August 4, 2016. Local institutional review was submitted through the relevant administrative body, the Amhara Regional Laboratory (ARL). Shortly after submission of local ethics application to ARL, all ethics applications that were in process were put on hold while responsibility for local ethics approval shifted from ARL to the newly founded Amhara Public Health Institute with approval provided in August 2017.

To minimize the risk to participants at each stage of the research process, every attempt was made to guarantee participant confidentiality. Participant confidentiality principles were detailed in written consent forms, which also provided each participant with the overall aims and objectives of the study, how information will be collected, protected, retained, used, and communicated back to participants, duration of the study, potential risks and benefits of participating in the study, and the timeframe of the researcher's availability, and the researcher's contact information (Corti et al., 2000). This information was presented in Amharic in clear, understandable language so that potential participants could make an informed judgement about participating. Each potential participant was also briefed on the form, its contents, and offered an opportunity to ask questions about the research process before the interview and reminded that she could do so at any time during or after the interview.

Because only 38% of women in Ethiopia are literate, the written informed consent mode may not be appropriate (Central Statistical Agency, 2014). The interviewer read the information sheet (Appendix 1) and consent form (Appendix 2) and participated in a question and answer process on these with each participant. In addition, a thumbprint "signature" option was included and used for two women who were unable to sign their names.

Identifying information captured during interviews was removed through data anonymisation using ID codes. Both the interviewer and transcriber received training in confidentiality and protection of participant information and signed a confidentiality agreement. At each stage of use, data was stored electronically and access to it was strictly controlled through password protection. The final repository of all data collected, transcribed, translated, and analysed will remain with me as password-protected digital files.

Beyond the risk of breaches in confidentiality as they relate to data quality and privacy protection, minimising harm during the research process also extends to the possible divulgence of sensitive information during the interview exchange. Given that participants were asked to share personal experiences, including those with religious meaning, there was a possibility of an emotional response to the topic under discussion, (J. Corbin & Morse, 2003). Additionally, the potential for the divulgence or observance of sensitive information by participant and interviewer during the course of the interview was considered. To address this, appropriate referral pathway was developed and included as part of the ethical review process submission both for LSHTM and local ethical approvals (Ellsberg & Heise, 2002). This included a referral card with local support services as well as helpful information on breastfeeding and dietary diversity was developed and left with participants at the conclusion interviews (WHO, 2001).

7.11 Dissemination of results

The presentation of study findings and recommendations in public health fora within and outside Ethiopia has been a planned output from the inception of the study. This study aims to provide a return of results to all participants to ensure that participants have an opportunity to benefit from the full information to which they have contributed. For research into emerging research topics, a practice of returning results to study participants also contributes to greater likelihood that future research into fasting and maternal health outcomes will be viewed positively by communities. A community conversation approach for deciding the most appropriate way to disseminate results e.g., informal community gathering with women, was explored with the LSAC. Two presentations have already taken place in Ethiopia within the public health and nutrition community in Ethiopia. Additional presentations are planned in the

study region of Amhara and at USAID in Washington, D.C. Following the completion of my DrPH, I intend on submitting articles for publication of my work to relevant journal publications.

8 Results I

Results are divided into two chapters. The first presents the major findings from the data and summarises the ways in which women described their thinking about and behaviour related to fasting. From a social ecological perspective, the ways in which women narrated their thinking, feelings, and behaviour revealed a complex system of social interactions, individual interpretations and decision-making, and societal norms. The key themes that are discussed in this chapter are the physical nature of fasting and its juxtaposition with the spiritual aspects of health; the concept of religiosity in develop women's perceptions of fasting; women's agency in fasting decisions; and the networks and influencing figures that help shape women's fasting behaviour. The second part of the results continues in Chapter 9 and focuses on my personal reflections on the research process and the particular contextual environment in which the project took place.

8.1 Overview of fasting behaviour

Eighteen of the women stated that they were fasting or intended to fast during the 55-day *Fasika* fast. While all women identified as Ethiopian Orthodox Christians, one divergent case emerged, a pregnant rural woman had left the Church when she married and moved to another region of the country. During that time, she practiced an Evangelical form of Christianity. Upon her return to Amhara Region, she returned to the Ethiopian Orthodox Church and resume her practice of regular fasting.

Modification of fasting was a commonly mentioned adaptive practice used by women to continue fasting while at the same time responding to their changing physical needs while breastfeeding. A modified fast included ending the fast at a point earlier in the day than 3:00 p.m. and eating some food in the morning then fasting again until 3:00 p.m.

8.2 The physical

At the individual level of SEM, the physical states of pregnancy and breastfeeding and the impact of fasting on these were two of the most common narratives women related during interviews. Physical symptoms of pregnancy are viewed from multiple levels of SEM so that

even when a physical need is expressed, e.g., fatigue, women may prioritize institutional or interpersonal SEM levels of influence.

Women demonstrated that they were knowledgeable about their increased nutritional needs when breastfeeding or during pregnancy and that physical complaints could be exacerbated by going for long periods without eating or drinking. The Health Extension Worker was the most common source of health recommendations to eat well during pregnancy and breastfeeding.

Participants were asked an open-ended question about how they felt while they fasted while they were pregnant or breastfeeding. This included their current pregnancy, if pregnant, and some women also offered their experience in previous pregnancies. Questioning on nausea, fatigue, and other physical experiences was also prompted after the first set of interviews because these were repeatedly mentioned.

The most frequently noted physical conditions were fatigue, poor milk production, and nausea. These were often viewed from the perspective of an already-established intention to fast. These manifested in most women to one degree or another, regardless of geographic boundaries of urban or rural residency, age, and thus provided a unique way to view women's responses to basic physical discomforts in relation to spiritual needs. Understanding how women navigate their desire to fast with the physical needs of pregnancy and breastfeeding is important as it shows that the lack of physical pregnancy/breastfeeding symptoms is not always the greatest motivating factor in nutrition-related decisions, even during periods when nutritional requirements are elevated.

By their own accounts, women described fasting as an intentional weakening of the body that results in spiritual gains.

“Religious fathers tell us we don't have to eat protein as the main aim of fasting is to weaken our body.” – BDO07U

While acknowledging the increased nutritional needs of pregnancy and breastfeeding with behaviour intended to make the body physical weak through restriction of food might seem contradictory, women's narratives did not convey difficulty in joining these two purposes.

Within this view, some women also described a self-imposed and perceived limit with regards to how much fasting they were able to perform before exposing their babies to physical harm.

A breastfeeding urban woman on giving advice to her friend:

“I tell her to fast in such a way to protect the fetus from harm. We can’t fast until 3:00 p.m. or 6:00 p.m., no problem if we fast until 12:00 p.m.” – BD012U

Women’s ability to strike this balance of helping themselves while not causing harm to themselves or their babies is dependent not only on their success in rationalizing these competing needs but also on having the necessary decision-making authority to exercise judgement and behaviour modification outside of normally accepted standards of fasting while they are pregnant and breastfeeding.

It is not surprising, then, that on the theme of the physical effects experienced during pregnancy and breastfeeding, women’s narratives. While it is easier to appreciate the possible added physical burden triggered by fasting for these women, in their narratives some interviewees discussed the beneficial physical effects provided *by* fasting. One rural woman commented that fasting provides physical strength.

“I feel tired when I eat after fasting. I feel strong before eating. We work before eating when we are pregnant because we feel tired after we eat.” – PC019R

Fatigue

Dikam (fatigue) was one of the most frequently mentioned physical aspects of fasting while, particularly for those who were pregnant. Most narratives on this topic associated the impact of fasting with causing or exacerbating *dikam*. Both urban and rural women mentioned the linkage between fasting, fatigue, and pregnancy.

“Fasting while pregnant has never affected my activities except that I sometimes feel tired.” – BD015U

“When it gets worse I sleep and get up when I feel better because I have to carry out household chores and go out for shopping.” – PC016R

In rural areas, women contribute significantly to household tasks, fetching water, childcare, cleaning, and cooking, while men tended to livestock away from the home during the day. Additional household work for rural women, including fetching water for drinking, cooking, and cleaning, contributed to or exacerbated their physical symptoms during pregnancy.

“I prepare food at home but I don’t bring water because I feel sick around my waist and I am weak to do so.” – PC016R

Both rural and urban women also expressed a belief that fasting caused or contributed to the feeling of *dikam*, demonstrating an understanding of the difference between normal pregnancy fatigue and one that was intensified by fasting:

“I feel tired when I carry out household chores while fasting.” – BD014U

“When we fast for many hours, we feel tired if we work more.....There is not rest in the life of a farmer.” – PC003R

Physical effects of fasting on breastfeeding

The main physical experience noted by breastfeeding women was a concern about diminished milk supply caused by fasting. For those that experienced fluctuations in milk supply, they noted that they produced more milk when they increased the amount of food or water they consumed. Women were in effect able to conduct a simple experiment with their consumption of any food and ASF and compare the effect on milk supply. Some women’s perception was that there was a direct cause and effect attributing fasting and decreased milk supply.

“When I don’t fast my breasts produce enough milk. The amount of my breast milk changes when I eat and don’t eat. When I don’t eat food, my breasts don’t produce milk. But when I take food and drink, they generate more milk.”

– BD008U

The common adaptation of ending the fast before 3:00 p.m. was also described by breastfeeding women, but the reason for selecting the time of 11:00 a.m. to end the fast was it was unclear. For both breastfeeding and pregnant women, ending the fast at close to midday contributes to less overall hours fasting. Women, however, typically begin their days very early

in the morning and, despite a reduction in fasting hours, were fasting six or more consecutive hours each day.

“Fasting during breastfeeding makes me tired. I feel tired. Most of the time I fast until 11:00 a.m., then I eat because the child will not get enough breast milk. The amount of my breast milk would decrease and I feel tired.” – BD008U

Some women talked about the Church-defined immediate postpartum period during which women are excepted—and even encouraged—to cease fasting. This non-fasting period lasts from delivery until the baby is baptized, which happens at 40 days for a boy and 80 days for a girl. It was unclear from the data why there is a difference in baptism periods for girls and boys. It allows women time to recover from childbirth and eat what and when they prefer. Two breastfeeding women conveyed her decision not to take up fasting again after delivery.

“I am not fasting after delivery because I think that the child will be hurt. The other thing is that I feel tired and quit fasting until I become strong.” – BD008U

In addition, breastfeeding women talked about their decision to take at least some amount of animal products during the *Fasika* fasting period more than pregnant women.

Nausea

In addition to fatigue, pregnant women reported experiencing nausea or disliking particular foods as symptoms they experienced during their current or previous pregnancies. Alleviating nausea was a commonly reported reason for limiting the number of hours fasted or ending fasting altogether while pregnant, even by some women who had intended to fast strictly. This illustrates the challenge women face in accommodating both their physical and spiritual needs during pregnancy and the ways in which they navigate these decision points.

While some women accommodated their nausea by reducing the number of hours they fasted or, as one woman described, by eating some food in the morning,

“I eat breakfast at 8:00 a.m. as I have morning sickness. I vomit whether I eat or not but I know that the fetus will not be hurt if I eat. – BD013U

Another woman described lengths to continue fasting despite feeling nausea and craving a dairy drink:

“... I may get sick if I go out without eating food. It may also make me vomit or suffer from headache..... I want to drink whey, but they tell me to wait. And there are impacts like this. Now only a week remains to break fasting.” – PC002R

The women who persisted with their fasting gave reasons for their behaviour that included the belief that eating or physical labour, not fasting, was the source of their nausea.

“As I am pregnant, I feel nausea when I eat food. I also feel as if having wound on my belly may be because of a lot of work.” – PC002R

HIV, pregnancy, and fasting

During interviews at Felegehiwot Referral Hospital in Bahir Dar, two women disclosed their HIV positive status, detailed in Chapter 9. Both women were breastfeeding at the time of interviews and recalled both their most recent and previous pregnancies as well as their experience of breastfeeding. They described their unique physical challenges of fasting related to the management of their health, which in addition to HIV, included anaemia for one of the women. To alleviate nausea, they had stopped fasting in the morning in order to take their daily regimen of antiretroviral medication. For one of the women, it was her *yenefs abat* whom she mentioned seeking counsel from in deciding to interrupt her fasting in the morning.

“My God Father taught me about fasting. For example, I always take medicine so I consulted with my God Father what I can do. I asked him if I can take the medicine after fasting. He told me not to fast while taking medicine and allowed me to take only fasting foods anytime.” – BD009U

They both seemed to be compliant with this guidance and did not explicitly raise concerns about the inability to fast throughout the day. Though one woman eats in the morning in order to take her medicine, she still does also does not break the fasting prohibition on animal products. “I take fasting foods. I don’t eat meat and the like.” – BD009U

No reported fasting symptoms

The absence of physical symptoms of fasting and pregnancy or breastfeeding was not the norm as described study participants. Not all women, however, reported experiencing notable physical effects while fasting during pregnancy and related this experience to either the longstanding habitual nature of their fasting or the physical-spiritual connection between fasting and physical well-being. Some women made a direct connection between fasting and their lack of nausea or fatigue or even an improvement in their physical state. Their view was that their bodies were so accustomed to fasting over the years that the physical changes of pregnancy had no effect on their state of being.

“I don’t feel tired during fasting time because I started fasting at the age of seven and I am accustomed to it. It has no impact. I can fast until 2:00 p.m.” – BD006U

8.3 The spiritual

Fasting practice is rationalized in a way that accepts rather than diminishes the added physical discomfort women experience because they attribute it to a different yet at least equally important purpose. This is one of the ways in which the SEM levels of individual and societal are most exposed. Religion-based practices and spirituality are individually-based and enacted are in constant contact with community, social, and SEM institutional levels. While women discussed the role of health workers, including HEWs, in their experiences with gathering nutrition information, most women did not report talking about fasting specifically with health workers. While this group may be key in most areas of antenatal and postnatal care of women and babies, their voice in the fasting conversation among networks of women was notably missing.

“I know that a pregnant woman should get a balanced diet. I also know that she must consume more food. I am aware that the fetus can be hurt but fasting is related to our soul.” – BD007U

Some women felt better equipped to manage their physical-spiritual simultaneously during pregnancy or while breastfeeding and displayed a comfort with the notion that if God wished her to fast, a way to do so without it being bad for the woman or her child is also provided.

“I will continue to fast after giving birth to my baby in a way that doesn’t harm the child because God allows fasting.” – BD006U

Women talked freely about the balancing act of fearing social judgement about abandoning the fast with receiving advice on how to remain strong during a practice designed to make them physically weak. Referring to her family members, who themselves are fasting, an urban pregnant woman said:

“As they are Christians, some of them tell me to eat before time saying that fasting during pregnancy makes me weak. Most of them are afraid to violate.”

– BD007U

Religiousness did not appear only at an institutional level as part of a doctrine observed solely for religious purposes. The concept of a woman’s duty to fast, even while pregnant and breastfeeding, was juxtaposed with a subtheme of individual benefit gained through fasting, along with a clear depiction of fasting modifications made during pregnancy and breastfeeding, as part of the individual decision-making power of women. Similarly, the institutional figureheads of the local priest and *yenefs abat* played a practical role in women’s daily lives as part of the support and information network of women, where religion and culture as part of everyday matters are not always distinct and separate systems.

Women’s agency is related to spiritual beliefs and perceived benefits of fasting. Fasting and religion, or what might be more aptly described as spirituality and faith, appeared closely linked to individual level beliefs, autonomy, and decision-making power. Women’s interpretations of the rationale for religious fasting and how and why to continue fasting during pregnancy and breastfeeding are presented simultaneously as intended to weaken the body and give strength to women. Strength here may be interpreted as a spiritual strength rather than simply physical power. While woman described physical benefits to fasting, even these were linked to a spiritual payoff as well.

“I don’t feel tired when fasting because fasting gives strength. I fast happily. I think fasting makes me strong. Fasting is a time to pray for my soul.” – BD007U

Fasting is inextricably linked to the spiritual side of life, with fasting constituting a physical price paid for protection of one's soul. "I fast for my soul. Anyway, no one is living forever in this world. We go once for all. Fasting is important for our soul." This quote illustrates the two-world (physical and spiritual) view of Amharan women and brings attention to their ability to combine the here and now related to their physical health and comfort with the perceived need to attend to the invisible and future needs of their souls.

While women discussed the role of health workers, including HEWs, in their experiences with gathering nutrition information, most women did not report talking about fasting specifically with health workers. While this group may be key in most areas of antenatal and postnatal care of women and babies, their voice in the fasting conversation among networks of women was notably missing.

It was not readily clear how women merged the idea of weakening the body with health messages delivered by HEWs during routine antenatal visits and aimed at strengthening and growing the body during pregnancy (woman, baby) and breastfeeding (baby), but it was apparent that these were not viewed as being in opposition to one another. Women were able to hold both beliefs, protection of themselves and their babies, with the knowledge of nutrition instilled by health workers and religious views from the church and its messengers forming two equal and important value zones.

Religious adherence cuts across geographic and socioeconomic boundaries in general in Ethiopia and Amhara Region specifically. While the data collection methods cannot measure the level of intensity of religious belief and behaviour held by women, they do highlight that religion and religious fasting are pervasive, regardless of differences in demographic characteristics. These descriptions start with religion as an established set of beliefs.

"Fasting is for belief, religion." – BD006U

"I fast as it is my religious obligation." – PC005R

"Our Orthodox belief commands us to fast." – BD011U

"Fasting is taught by Christ, and I fast as it is my belief." – BD012U

The first two quotes above are from rural women, and the second set of quotes are taken from transcripts of interviews with urban women. They represent the universality of fasting among Orthodox Christian women as part of the socio-religious context in Ethiopia, a fact tethered not to geographic location, or socioeconomic status, and underscore the importance of religion as an initial point for interpreting the world, including the human process of childbirth and child feeding practices.

EOC letter

From women's accounts, it is difficult to judge the level of awareness that priests have of the Church's letter on fasting during pregnancy and breastfeeding based on the fact that so few women have heard of it or could clearly indicate its meaning or application of it in their lives. If priests are aware, it is unclear what level of endorsement of the written message actually exists, as most women interviewed stated that the message they received from their priest was that fasting is compulsory.

8.4 Women's agency

Women's descriptions of their decision-making in anticipation of major fasting periods indicated a strong belief in self-authority that they assign to themselves while at the same time accepting variability among women to act in diverse ways. This intrinsically captures the concept of agency as being variable, since it will depend on factors that vary from person to person.

Religion both limits and provides space for women's autonomy. This occurrence illustrates the linkages between SEM levels, where religion is equally represented in institutions, family and social relationships, societal expectations and norms, and women's power to use multiple levels in making individual dietary decisions. As fasting in the Ethiopian context holds religious associations, for women who continue to fast into pregnancy and lactation despite others' concerns, the generally accepted religious imperative to fast may provide additional support for autonomous decision making. By leaning on doctrine, a woman's choice to fast, even in a modified manner, is given weight by the church which is a reinforcing signal to women to fast. This is despite the EOC letter encouraging non-fasting during pregnancy because the implementation of the letter is still left to individual interpretation and action by priests.

“... as a Christian I feel I am obliged [to fast] as we follow the path of our mothers and fathers.” – BD008U

“I fast for myself, my belief, and religion. A person is responsible to respect his or her religion. I fast for myself. No one fasts for another person.” – PC019R

Women accepted that fasting choice can accommodate a variety of behaviours for pregnancy and breastfeeding, plainly communicating that in possessing an individual choice in fasting, other women, also exercising their power to decide, may act differently. Specifically, women accepted a level of flexibility for themselves and among other women to decide if, when, and how to fast. This is expressed in many ways:

“All differ in their choice and interest [to fast]. It is their choice if they eat whatever they want during the fasting season. For example, I feel so tired if I go to the market without eating food. There are some who don’t feel tired. It is according to their interest [to eat or not].” – PC016R

“According to her mind she decides to fast...” – PC003R

Even though fasting is a cultural norm, women assigned individual spiritual benefits to their eating habits that they connect with their belief in each person freely deciding to fast—or not. These were described in physical terms such as strength and greater energy. It may be that the close connection with spiritual necessity and value assigned to fasting contributes to women’s perception that this is a highly individual decision that, while influenced by various actors, ultimately resides with each person.

The very act of fasting is an act of self-control and agency. Both urban and rural women viewed fasting as an intrinsic part of their ability to act in concert with their religious beliefs, and this clearly entailed a degree of self-denial of human cravings by excluding animal source foods and not eating and drinking until afternoon. While the cultural norm to fast is strong in Ethiopia, this does not lessen the significance entailed in harnessing the physical will to refrain from eating and drinking for sustained periods of time over many weeks. Starting from the principle that fasting is itself an act of control, women described controlling their diets in terms that resonated with that facet of individual power.

“If lured to eat, it is a problem. It is a self-decision.” – PC002R

Fasting or not fasting is not a single decision but a series of decisions made over the sustained period across pregnancy and breastfeeding. Though women often described a preferred choice to fast, there were numerous smaller acts of autonomy available to women throughout the pregnancy and postpartum periods. For example, one pregnant woman described her transition from strict fasting at the start of her pregnancy to beginning to eat food earlier in the day as her pregnancy progressed. These smaller points of decision-making were often influenced by the physical changes women experienced, for example, the arrival or cessation of morning sickness, the degree of physical exhaustion experienced at different stages of pregnancy, and real or perceived quantity of milk.

Women process a range of information before choosing a fasting path. Women’s sense of personal agency included the ability to assess the landscape of sometimes divergent opinions, information, and influencers to arrive at a dietary behaviour choice that was best suited to the individual. The processing of these factors, however, is not necessarily static and may change over the course of time. Ultimately, the decision is a convergence of multiple information sources: women’s own physical state and comfort, social norms, and personal deliberation:

“I stopped fasting as there are many things I need as I am pregnant. I stopped fasting to get what I need while pregnant. I decided not to fast as my friends told me that there is no problem if I don’t fast during pregnancy.” – BD013U

8.5 The interpersonal

The yenefs abat

Because the self does not have distinct start and end points with respect to the body and soul, or the physical and spiritual dimensions, the *yenefs abat* is often conferred with on matters that have direct health consequences. At the interpersonal level of SEM, he is both influencer and health educator. Along with husbands, he is a key interpersonal influencer, while also representing a figurehead of the Ethiopian Orthodox Church. Underlining that the church is not simply an institution but is alive in the person of the *yenefs abat*, women often cited the influence of their *yenefs abat* over the course of their lifetimes, beginning with early education

about fasting in childhood to consultant for fasting in adulthood. Women are both recipients of health messages from priests but also seek out advice on health matters. A woman living with HIV described the following:

“He told me that I can fast when I get my health back.” – BD009U

Where the edges between culture and religion are blurred, priests serve effectively as health educators who may or may not possess accurate health information, while also filtering health related information through a religious lens. At times, this may be at odds with the information and services provided by health workers.

“My godfather advises me not to take birth control saying that it is a sin.”

– PC001R

But there is also partnership implied in the relationship, one that does not diminish the importance of fasting but seeks to reposition its burden to compensate for the limitations of the physical self. Several women discussed “making up” the fast when they were able after pregnancy. This was not necessarily an outcome of discussion with the priest but rather a modification of fasting similar to the modified fasting hours used by many women during pregnancy.

“If the disease is serious, I will tell my godfather and eat as per the order of the [health] professional. My godfather will fast and pray for me.” – PC019R

There was less narrative about women proactively discussing fasting with the *yenefs abat*, while some women noted that they would talk to him to ask forgiveness for not fasting according to strict dogma as they believed it. This may be related to such issues as women’s discomfort with straying outside of acceptable official fasting practice, breaking cultural norms, and the individual priest and his comfort discussing social and family related matters that have a health implication. Women’s narratives about this area of interaction with the church are not uniform but do demonstrate a level of women’s preference for working autonomously in these grey areas by exercising decision making that meets a personal set of criteria, including physical and spiritual needs.

Most women were unaware of the letter issued by the Ethiopian Orthodox Church that exempts them from fasting when pregnant and breastfeeding. Though not representative statistically of women in Amhara, this finding suggests that the communication and acceptance of the information in the letter is lacking if the intended outcome of issuing it is to encourage more women to stop or limit fasting when they become pregnant and while they are breastfeeding. While one woman referred to her experience of hearing about the letter from “health professionals,” most women offered no clear linkage between antenatal care visit or health education messaging on the letter by from health extension workers with respect to their views about nutrition in general or during pregnancy and breastfeeding. These were dictated more by their religious views and their personal decision on whether and how to continue fasting until delivery or weaning their baby. Several participants shared that, despite being unaware of the letter, they were already practicing a modified fast, with some saying that they would later confess this to their *yenefs abat*.

Several women expressed that they were aware of the letter but had not changed their behaviour and would not trust this information until hearing it directly from their priest. Even then, the practice of fasting as a foundation of daily life presents challenges to implementing the intent of the letter among women.

“I haven’t seen the statement....I have to get confirmation from religious fathers because the Orthodox Church orders the faithful to fast. I don’t believe that it allows to eat during fasting season.” – BD014U

This theme captures the range of actors in women’s social networks as separate from general culture and tradition. It includes husbands and other family members and friend groups in the community, and how these groups interact with women to influence their perceptions and decisions about how and when to fast. Influencing is not, however, a flat relationship and does not occur in only one direction; there is a dynamic push and pull of influence within these groups. When considering the bidirectional nature of influence, the complexity of these relationships increases, with women who are pregnant and breastfeeding both influenced by and influencing their social and family group members.

The theme of women's agency and relative decision-making power was also highlighted in how women talk about their social relationships and whether they perceive these to be influential in their decision making or merely informational. Women's voices clearly emerge as they discuss how they process information from their social networks and whether it crosses their given individual threshold to influence their fasting behaviour. Women's construct of who they are and their autonomy to make decisions is more than just being a passive receiver of influence, i.e., being acted upon. Their voices emerge clearly when they talk about themselves vis a vis the social roles they inhabit as sisters, daughters, friends, wives.

The interplay between social groups and the church, often in the form of the local priest or personal/family priest (*yenefs abat*), was difficult to separate from the social web; yet, while clearly part of the social construction of women's environment, these influencers are discussed as a separate theme.

Husbands

Husbands play an influential role in women's fasting behaviours. While the majority of women interviewed were married, two urban women had separated from their husbands, either by their choice or his, usually after disclosing the pregnancy. For women whose pregnancy was in its early stages, her husband was often the only person or one of a small number to be aware of the pregnancy. Women described waiting until they had passed the twelve-week mark of pregnancy to begin telling others, including close family members, a cultural practice with wide and apparent acceptability. One rural woman explained:

“We don't tell them because of our tradition. Being pregnant is not shame; however, we do not have the courage to talk about it because of tradition.”

– PC020R

For women who continued to fast while pregnant and whose husband was also fasting, they described this as an alignment of their mutual faith in a higher purpose. There was indication, whether stated or implied, that they made a decision to fast together and that this is a source of strength to women who fast. Having a fasting partner in the house, especially during the first trimester of pregnancy when nausea and tiredness are heightened, provided women

encouragement and support. This was also characterized as a feeling of togetherness as a family unit, sometimes in contrast to other parts of the extended family.

“My husband and I fast together. My in-laws are not that much serious in fasting.”

– BD006U

Even for women who practiced a modified fast, e.g., eating no animal source food but breaking her fast earlier than normal in the day, men who this modified fast were recognized for their input into this practice. Several women who noted that they were practicing a modified fast linked this with their husbands’ views. To some extent, women may feel supported in their modified approach to fasting by their husband’s backing.

“My husband would advise me to not fast. He would tell me to eat eggs and chicken as we had many.” – BD009U

For women who were not fasting, they often described this in connection with their husband’s belief that fasting hurt the baby. Even if her husband was fasting during her pregnancy, a few women did share that they had stopped fasting or, during the upcoming fasting period, had no plans to fast.

“Only my husband doesn’t want me to fast but he is fasting himself.” – BD014U

An opposite perspective from the women described above emerged from those who broke with their husbands’ views of fasting and pregnancy. For women who desired to continue fasting during their pregnancies despite her husband’s concerns, this was not reflected on as a source of simmering contention within their relationship. Women described this as a difference of opinion rather a reason to discontinue fasting to align with the husband’s wishes. When asked about her husband’s opinion of her fasting during pregnancy, a rural woman responded:

“Nothing prevents me from fasting - I fast.....My husband didn’t want me to fast. He used to eat. He would ask me to eat with him. He would encourage me to eat when I was pregnant, saying that the fetus would be strong. He was careless about fasting.” – BD008U

If both are committed to fasting, husbands may provide additional moral support for their wives who continue to fast while pregnant or breastfeeding. Compared with issues such as family planning, women's narratives indicate there is more openness for couples to discuss fasting and even to maintain differences of opinion on its practice during pregnancy and breastfeeding.

Other Family Members

Participants recognized the fasting beliefs of their family members, though in ways that sometimes implied understanding them in broader cultural values rather than having engaged in direct discussion on women fasting during pregnancy or breastfeeding. This relates with statements from women that imply "everyone" fasts because it is part of their faith to do so. Concurrently, women returned repeatedly to the theme of individuality in fasting. The deeply personal nature of fasting for many women is illustrated by a rural woman when asked about her family members' opinion of her fasting while pregnant.

"I can only talk with myself about fasting." – PC001R

It may also be that the timing of the interview for pregnant women mattered because, as noted above, women may not have introduced a pregnancy to the broader family or community.

"Members of my family haven't said anything so far because they don't know that I am pregnant." – BD006U

Similar to husbands, other family members expressed divergent opinions about women fasting during pregnancy, ranging from promoting fasting during this period to recommending that woman not fast. Women, though, were not always influenced by either of these. These examples illustrate that women may act in opposition to prevailing family beliefs on fasting.

"My family doesn't want me to eat non-fasting foods because they say that they were fasting when they were pregnant. They say that to stop fasting is not good. But as I understand the difference and as I have to take care of the fetus, I stopped fasting. They want me to fast even if I am pregnant." – BD014U

“As mothers are ageing and it is our culture sometimes they influence. If I want to eat I should eat unseen. My mother or mother-in-law may not allow me to eat. They may hate me or get disappointed.” – PC002R

“In particular my mother would tell me to eat for the child’s wellbeing. She would say that the fetus would be hurt if I don’t eat. I didn’t have appetite so I couldn’t eat. They pushed me to eat fasting foods [non animal source foods]. They would say that I could confess to my God Father after getting well.”

– BD009U

“They tell me to protect the fetus from harm. However, as it is my belief I must fast.” – BD012U

The first three quotes above touch on the generational nature of aspects of family advice and links this sub-theme with the role of family members as the first teachers of fasting. Many women wove into their responses about their families’ beliefs a connection to their early fasting experiences of beginning in childhood, often beginning at the age of seven for both girls and boys. Though not a recent interaction in terms of current pregnancy or breastfeeding, parents’ influence at an interpersonal level is most direct in a woman’s early years. The impact of this early training and habit forming, the setting of a system of beliefs around fasting, begins early in a woman’s life, the complete impact of which may not be as visible as the husband-wife relationship in the current context of pregnancy or breastfeeding.

“I started fasting when I was a little girl. My parents told me and taught me about fasting. They are followers of the Orthodox Church and they are also fasting.” – BD011U

“We grew up learning about fasting from our families. Our families tell us to fast when we reach the age of seven. This made us to strengthen our belief. The advice given to us when we grow and go to church also tells us that fasting is useful to us.” – BD014U

Peers

Friends, like family, form part of the community of fasting, with women once again both giving and receiving advice. Beyond the immediate bounds of family, friends, which means exclusively other women, form a part of the broader interpersonal level of women's fasting experiences. One aspect of how women interact with their friends and fasting was informational. This includes the sharing of cultural beliefs about fasting, and the use of *t'ella* during breastfeeding, as well as nutritional information that aligns with ante- and postnatal health recommendations. There is a triangulation of information that includes health worker, family, and friends, that as a whole reinforces information that women use to interpret fasting during pregnancy and breastfeeding. Women also describe friends as a resource for modified fasting during pregnancy and breastfeeding, which reflect the different fasting experiences of women in the community.

I have friends who are fasting while pregnant and breastfeeding. Though they don't fast until the required time they fast until *11:00 a.m.*, they fast as their religion orders them.

I have friends who quit fasting when they become pregnant or when they are breastfeeding.

Women also illustrated their role as influencers in the networks of their family members and friends and husbands. One aspect that defines the difference between family and friends is women's ability to more freely explore fasting by judging their and others' behaviour. This is demonstrated in how women speak candidly about their friends' fasting behaviour in a way that does not come across when they speak about family members.

"For example, a pregnant friend ate meat during FilsetaTsome [two-week fast in August commemorating the death and assumption of Mary]. At that time I was angry at her." – PC002R

"I will get angry at her. How can she stand in the face of God?" – PC019R

While stating that they made their own decisions about fasting, peer interactions also reflected that those perceptions and values were applied not only to

themselves but to other women as well. This is perhaps a process not only of providing peer counsel but a way of expressing and legitimizing their own agency in adopting a modified fast:

“I advise her not to fast when pregnant. I also tell her to stop fasting while breastfeeding so that the child will be able to get useful things from her breast.”
– BD014U

Women show knowledge of other women’s fasting behaviour as well as opinions about these behaviours. These fall into both the category of supporting women’s individual decisions to fast or not to fast and sharing their own beliefs—and possibly behaviour—as part of the peer level influence on women’s experiences fasting.

Healthcare workers

Women mentioned fasting during their pregnancies or while breastfeeding their babies also spoke knowledgeably of the nutritional requirements of maintaining a healthy pregnancy. They noted the health education messages delivered by health workers. One urban woman recalled the nutrition messages given to pregnant women by the local Health Extension Worker.

“She is told to eat at least four times a day. She is advised to eat additional food. This includes during fasting time and eating in the morning.” – BD007U

8.6 Results I conclusion

The practice of fasting by Orthodox Christian women was commonly practiced during pregnancy and breastfeeding. Determinants of fasting are found at all levels of Social Ecological Model. SEM provided the initial structure for organizing data during analysis, and data at this initial stage aligned with SEM levels, facilitating an understanding of themes and, importantly, identifying linkages between levels of the model. While not necessarily constrictive, SEM’s broad approach to categorising data lacked the necessary to interpret linkages between levels. The ways that women experienced the physical changes and symptoms of pregnancy and breastfeeding and their responses to them in relation to fasting, whether this affected their thinking or behaviour with respect to fasting, came into focus. Women’s accounts of their experiences of fasting during these periods of increased nutritional requirements reflected

themes of individual decision-making, agency and social support between themselves and within the wider community, which crossed rural and urban settings.

Women balanced the spiritually and socially important act of limiting the amount and types of food they consumed when the physical need to consume more food, more frequently, was highest. Despite the normative nature of fasting, however, women can and do describe their empowerment to adapt and in some cases abstain from fasting altogether. How the individual, interpersonal, and community levels of women's lives interact, converging and diverging, to provide insight into women's understanding of themselves, their autonomy, and their constructs of health and nutrition.

Chapter 9 continues the analysis of results by examining the research process.

9 Results II: Reflections on research process and contextual environment of fieldwork

This chapter contains reflections that draw upon notes and interview debriefs collected in my field journal along with factual accounts of the research environment that add perspective to the DrPH thesis. It explores issues, both anticipated and unforeseen, that shaped the research, including my interpretations of women's experiences with fasting, my experience as a researcher, and the decisions I made during the course of the thesis component.

Critical reflection was part of the reflexive approach to the thesis work, and continuous identification and questioning of my assumptions included field journaling and interactions with the study team and local advisory group. As a researcher who is not native to the research environment, these reflections were essential methodological elements aimed at improving the quality of results. In a challenging field environment, they also provided a systematic approach to assessing the continuous changes that existed throughout the field work planning and implementation periods.

Throughout these sections, I reflect on the people and occurrences that affected the research process, my role as researcher, and the lessons I learned on working in a culture where I was viewed as an outsider. The first section of this chapter opens a brief description of the events of mid 2016 to 2018 to provide some perspective of on-the-ground realities of the pre-fieldwork planning period. Section 9.2 describes some of the challenges encountered during the field work period during the first four months of 2018. The last section of this chapter describes events that closely followed fieldwork and analysis and, while not directly impacting the study, nevertheless affected my view of research in politically challenging environments and provide further context of the research study environment in Ethiopia at this time.

9.1 How conflict and political events affected the study

Chapter 4 detailed the ethnic composition of Ethiopia and the geographic distribution of major ethnic groups into administrative regions that were to some degree artificially

constructed. Over decades, the central government used force, coupled with at times repressive legislation, to keep ethnic unrest in check, yet this perhaps gave an inflated impression of national cohesion while unaddressed grievances festered. These grievances frequently stemmed from ethnic differences and minority holds on power at the national level of the government

After a brief period of relative quiet, in July 2016 reports of demonstration-related deaths in two regions began circulating. In September 2016 it became apparent that the unrest in the country was becoming more widespread. While foreigners were not generally targeted, in October 2016, a vehicle carrying an American research worker was hit by rocks on the outskirts of Addis Ababa, killing resulting in her death (Fishel, 2016). In October 2016, then Prime Minister Hailemariam Desalegn declared a national state of emergency.

Amhara Region, the site of my research project, was a hotspot of unrest with violent clashes between demonstrators and government security forces. Protests were unpredictable, and even demonstrations that began peacefully were prone to violent escalation, posing a significant risk to travel in the affected regions. Included in the implementation of the state of emergency was the restriction of travel for foreigners to within 50 miles of Addis Ababa, thus prohibiting my travel to Amhara Region.

9.1.1 Fieldwork: January to April 2018

In the first half of 2017, divisions flared up with new intensity and consistent conflict heightened security concerns across the country. Two regions in particular have been fighting along the borders of the Oromia and Somali Regions which resulted in the displacement of 1.4 million Oromos and Somali internally displaced persons (IDPs), who were forced to flee the conflict along their common border (UN/Emergency Task Force presentation, April 19, 2019). Approximately 2.8 million people have been uprooted from their homes in recent years. Public health systems interruptions were one of numerous indirect effects of the violence. Government officials were sometimes unable to perform to their duties, public offices were closed periodically, health workers were unable to reach clinics, supplies of essential health commodities were interrupted.

The situation had an indirect effect on my study, requiring two interruptions of study, the first in January 2017 and the second in May 2017, during which I was unable to proceed with the local ethical approval process or conduct data collection. As government work at times came to a standstill, the shuffling of government staff was frequent at all levels. This increased the challenge of tracking the local ethical clearance application. The authority for local ethical approval for my study was transferred to a newly created body, the Amhara Public Health Institute, requiring resubmission of the application.

I struggled at times to remain positive in the face of events that were beyond my control. A field journal entry from November 2016 expresses my frustration with the frequent stops and starts:

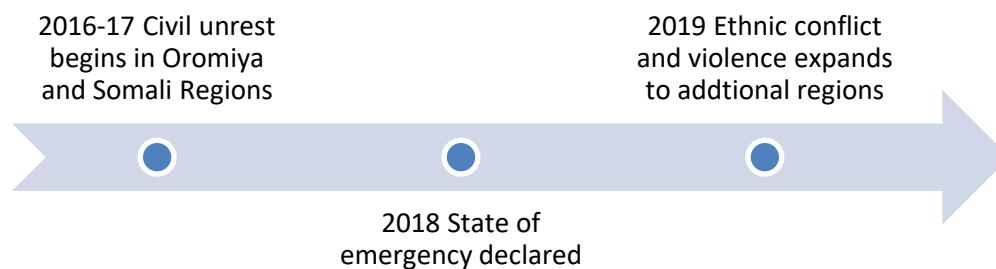
“Called ARHB to try to get info on where my application is. Dr. M was not answering his mobile for the fourth day in a row. Now I find out that he’s possibly not even in the country and when he returns may no longer be the person in charge of ethics applications in Amhara. Running out of ideas on who to talk to...”

9.1.2 Fieldwork: January to April 2018

Once local ethics had been approved, finding the best times to collect data became a logistical calculation with an ever-expanding set of criteria, e.g., whether the government was restricting travel for foreigners, the probability of large gatherings, reports of unrest in recent weeks, anticipated changes instituted by the government that might trigger protests. There were multiple periods of waiting for the right alignment of security stability and fasting days. Part of my methodological approach was to draw out interviews over a period of time rather than attempt to conduct all interviews as quickly as possible. This was designed to allow time for interview transcription and translation, continuous reflection, and adaptation of the topic guide as needed. I resisted the temptation to load extra interviews into a single visit as a method of protecting against the threat of another stoppage if security threats escalated again.

Juggling these factors was a frequent topic of discussion during check in calls with my supervisors during this period. Talking through these challenges helped relieve me of reluctance with not being in complete control of the situation. While I knew that the longer the process of data collection lasted, the higher the risk of another stoppage, I became increasingly confident in this methodological approach with each interview.

Figure 8 Timeline of civil unrest



9.1.3 Safety and scheduling challenges

While the state of emergency was officially lifted in February 2018, travel restrictions actually began easing in 2017. Though life seemed to have returned to quiet in most areas, I took a cautious approach to implementing fieldwork and remained vigilant in respecting the safety of myself, personnel related to the study, as well as study participants.

In a fast-changing environment, I relied heavily on local resources I had cultivated, such as my local advisory group. While the decision to use an Ethiopian national to conduct interviews for this study was originally made to be sensitive to participants and ensure that cultural and social cues were respected, as the study progressed it was clear that the cues my Ethiopian research colleagues were assessing were far broader than individual study participants. For example, I was nervous about the security stops we endured on the way to and from the first interviews in Picolo but was assured that there was nothing problematic about getting out of the car and showing my passport to police stationed at checkpoints along the road we were using.

Looking through my field journal, I note the number of times security appeared in my thought process, whether it was anxiety for the delays it caused or fear it might impact

someone directly or indirectly. For example, as noted below, the frequent security checkpoints that sprang up in 2017 unnerved me. Worried that I might attract attention as a foreigner, I did not want the driver or interviewer to be negatively affected by traveling with me. Contributing a bit of humour into the tension of those drives was the following entry in my field journal in January 2018:

“In the van on the way to health centre in Picolo. Driver was stopped by police. I’ve seen police stopping cars in both direction along the road we’re on out of Bahir Dar. There was a long back and forth exchange between the driver and the policeman, documents being shown. Driver looked upset. Then we started going again and when I finally got briefed on what happened, I find out the driver is driving with expired documents. The policeman took his license, and he’ll have go to the police station to get it back.”

Before each trip to Amhara Region, I weighed the information I had available to me, then made a joint decision with the local interviewer with whom I was traveling. I was generally more cautious than she was, though we postponed one planned fieldwork visit based on her unease with traveling to Bahir Dar just after a large music concert was planned to take place, on her instinct that it might devolve into violence.

The weight of that pressure was considerable, but the experience will have a lasting impact on my view of myself as a researcher in that it brought into sharp focus the extended web of contact I had with so many individuals along the way: interviewer, women and their families, health extension workers, hotelkeepers in the places I frequented in the field, and local drivers. While ethical rules provide a general framework for not causing harm, they cannot anticipate every situation. The onus as a researcher is to make decisions that take into account situational awareness and an attempt to anticipate and minimize or avoid endangering the safety of those who come into contact with the research activity.

The scope of political change that happened in Ethiopia from the time the local IRB process began through the present has been astounding. This is not the focus of this chapter, but

to understand its magnitude is to understand better the topic at hand: how and when did the political and security situation touch parts of the study. In Pico, more than Bahir Dar, life did not seem to have changed directly as a result of the events of the last two years. While in villages or a large town, during my direct contact with average Ethiopians, church was attended, housework and childcare continued as before, as did fasting. Sporadic protests in Bahir Dar have resulted in loss of lives and property and in June 2019 the killing of several government officials, including the region's president, has increased security concerns in and around the city.

9.2 Research in a community setting

Even had the security situation been stable, conducting research in a community setting presents its own set of challenges. Rather than a semi-controlled clinical research environment, timing and location factors can be less predictable as they are not under the researcher's direct control. At the same time, this contributes unique, contextually rich, depth to the data itself. When the unexpected happens, it can be an advantage to interpretation if approached in a strategic manner (Zhao & Ji, 2014).

Each of the four interview locations was unique: church, health centre, women's homes, antenatal care (ANC) clinic. Even when plans were made and confirmed, there was not a single set of interviews that went exactly according to plan. While it may seem counterintuitive, flexibility actually requires great discipline, particularly when time constraints add to the pressure to ensure the data collection proceeds. There is no way of predicting where unexpected situations may lead you. When you are studying people's lives, allowing life to unfold in its natural context can sometimes take you places that provide some of the greatest insights into your topic of interest. The following two vignettes are based on entries from my field journal, examples of the kinds of real life, unplanned experiences, I encountered during interviews. I draw on them to illustrate the kinds of dynamic interactions between researcher and researched.

Church interviews

One of the most unique interview experiences took place outside a rural church. From the main road paved road from Bahir Dar, our vehicle turned onto a dirt road, turning after a few

kilometres at what appeared to be a forest path that was too narrow to be driven on. From this point, we got out of the car with our bags and walked along a footpath through trees that would occasionally open onto a clearing. The random emaciated cow dotted these openings, usually with a young shepherd boy keeping watch somewhere nearby. We moved along this path for approximately 30 minutes, the sound of chanting becoming increasingly louder.

Photo 3 Walking to church interviews (left), rural church interview location (right)



We arrived at the church in the forest during the Sunday service, and it seemed the entire community was in and around this location. The clearing next to the church was lined with fallen tree trunks that served as pews, and I took a seat on one of these, aware that I was being watched. Accepting my inability to observe without being observed, I simply watched and listened to the activity of men, women, and children praying, bending, kneeling, as they sometimes watched me.

The health extension worker from the community came to collect us from our tree trunk pew and took us further from the church to a small square field. While the HEW was engaging a group of pregnant women in a health education session, we would interview women one at a time on a slope at the other side of the field, which offered as much privacy as we could arrange. The women were typically barefoot, often choosing a squatting position for the entirety of the interview, while the interviewer and I sat on the grass.

A steady stream of women carrying cinderblocks on their heads would emerge from the forest next to the field and move along the footpath toward the church. A group of elder men were gathered on their own at another end of the field. As life went on around us, women talked

with us about their diets and reasons for fasting or not. At the end of the interview, they would rejoin the group health education session across the field, and another woman would leave the group to be interviewed. During one interview, one of the men walked over to us and gave the participant we were interviewing a drink from a cup he had brought over to her. The woman drank it and returned the cup to him. The Ethiopian interviewer explained to me that this was the *t'ella* drink we had been hearing about during interviews. The man also offered us a drink of *t'ella*, which we thanked him for but refused. Witnessing a practice described in interview transcripts and debriefs reinforced the idea that *t'ella* during pregnancy was not only socially acceptable, it was viewed as beneficial to pregnant women.

HIV-positive mothers

During the first set of urban interviews in Bahir Dar at an antenatal clinic, two women self-disclosed that they were HIV-positive. While I had included in the study protocols the possibility of women sharing personal information that may require an action or follow up on my part, I had not specifically thought of HIV status, less so about the emotion that this information might generate in the interviewer. In both instances, the women were describing their struggle to continue fasting while taking antiretroviral treatment that left them nauseous. Fasting while on a daily medication regimen, in this instance for life, was a new consideration. In real time, as the interviews occurred, this was one of several instances in which I understood enough Amharic words, in conjunction with the body language of both the mothers and Rahel, that I was aware of the issue but lacked full information. From my perspective, the women both disclosed this information matter-of-factly, as I saw no visible change in their manner of speaking or acting. They both held their children. There was a moment when Rahel was visibly struggling with the disclosure, as I could see tears forming in her eyes, and I considered stopping the interview to confer with her. During the debrief, I would learn that one of the babies had also been infected, and Rahel had been unexpectedly, though understandably, moved by the two people who sat in front of her. HIV infection, particularly in rural areas of Ethiopia, is uncommon. This may have been the first time Rahel had met an HIV-positive mother and baby. It took her just half a minute to recover, however, and she finished the interview. After the participant left

the interview room, we took a pause during which we discussed the situation and I ascertained that Rahel was comfortable proceeding and that I was confident she was able to do so.

Two interviews later, we again found ourselves interviewing another HIV-positive mother. This one asked how she could be enrolled in a multi month scripting initiative she had heard about. This occurred at the end of the interview when Rahel asked if there was any additional information she would like to share or if she had any questions. There were a total of three women who asked for information or help (divorce, HIV/MMS, eye doctor). At this point, I asked Rahel to directly translate between the participant and me. I explained that we were not health workers at the hospital but that we would ensure that information about the multi month scripting programme would be shared with her and encouraged her to discuss with the doctor during her visit that day. After the conclusion of interviews at the hospital, we discussed the issue with the ANC director who gave us information that we then shared back with these study participants.

I took this experience as an opportunity to return to the topic of sensitive issues, as you do not know when or how they might appear or how you will react. Rahel needed not to feel discouraged by her reaction. She had been caught off guard but had recovered and continued the interviews. We used this as a learning opportunity to talk about what other topics might arise during interviews, both agreeing that domestic violence, which actually never came up, was probably the most likely. We also agreed that in such an instance, taking her time and not trying to quickly continue the interview was a strategy to allow her mind to process the information and determine the best path forward. In the examples above, there were no outwardly visible emotions from the women. Given these cues, Rahel did well to give herself a moment to recover and then continue, letting the participants be her guide.

9.3 The role of the researcher

For the participant, language expresses meaning, and for the researcher language constructs meaning; it is the vehicle for the qualitative researcher to derive understanding of the research topic. Van Ness et al. express this as words giving meaning to experiences,

often through the use of metaphor (Van Ness et al. 2010). For a researcher working in a non-native language, the ability to discern nuance in language is key; therefore, one of the most beneficial aspects of having a native Amharic translator was Rahel's insider status and her deep understanding of Ethiopian culture and cultural references.

The request to understand a researcher's background is in response to greater emphasis on a consciousness of "situational identities and to the perception of relative power" (Angrosino & Mays de Pérez, 2000). This includes understanding a researcher's station, including gender and ethnicity, as part of narrative interpretation (IBID).

My status was an outsider. I do not share the identity, language, and experiential base with the study participants (Dwyer & Buckle, 2009). I am not an Amharic speaker but understand basic conversations. I am a practicing Orthodox Christian and I practise the same type of religious fasting as the women I studied, though nowhere on the scale that many of them—and most Ethiopian Orthodox—do. I delivered one of my children in Ethiopia and have parented all three of them mostly in the country. I am familiar to some extent with many of Ethiopian cultural norms. While none of these facts lessened my outsider status, they invariably changed the way I filtered information around me.

The concept of a third space between insider and outsider is one that at times felt more valid to my research experience in this context (McNess, Arthur, & Crossley, 2015). Yet, when reflecting on entries in my field notes, this internal conversation about the potential opportunity to inhabit a space with more fluid boundaries escaped my conscience reflection. Dwyer and Buckle note that the notion of common ground may increase access to some understanding of culture and identity but should be guarded against undo assumptions based on perceived similarities (Dwyer & Buckle, 2009). Even membership in a group is insufficient to understand the unique experiences of individual group members that collectively contribute to our understanding of issues at a macro level. With a topic that I had some knowledge of through my own personal practice with Orthodoxy, I intentionally drew upon dominant insiders, i.e., native Ethiopians via the local advisory group, in order to maintain an outsider status and the unique perspective it allowed me in interpretation of data. The reflective process did not end immediately post field work. A query remains on whether my intent to guard against

introducing my own bias in fact discounted the third space of in betweenness that my personal experience might have elicited.

My physical appearance clearly marked me as a foreigner, making it unnecessary to announce my outsider status to study participants. Rahel did, however, reference my connection to the culture during interview introductions, typically using some variation of the following: “This is Sophia. She is the principal researcher on this project. She is interested in understanding women’s fasting experiences. She is also Orthodox....” While Goffman argues that, in an attempt to construct a positive self-image, a researcher may manipulate the impression they convey to strangers and acquaintances, in this instance I viewed Rahel’s introductory reference to my religious background as an acknowledgement of the social/racial gap between researcher and informant (Flores, 2018). It was an attempt to make my participation not just acceptable but relevant, less transactional and more meaningful to the informants as they discussed their personal religious beliefs, fasting behaviour, and pregnancies.

The two stories below illustrate the insider-outsider stations that were constantly running in the background were not. My role as researcher was not always directive as it was necessary in some instances to follow the flow of the situation.

Buna, popcorn, and dabo

One set of interviews in Bahir Dar took place in women’s homes in a Health Extension Programme catchment area. I wanted my presence to be the least intrusive I could manage, but Ethiopians are extremely warm hosts. At one home, the informant had very recently delivered and was lying on a mattress with her newborn in an even smaller room adjoining another small room with couch and three chairs.

Assessing that the woman was in an especially vulnerable physical state and wanting to increase the likelihood of an honest conversation on her fasting over the previous nine months, I opted not to join the interviewer in the room’s very close physical space. It was the only instance in which I didn’t conduct direct observation during an interview. My field notes instead reflect the interaction I had with the woman’s older daughter and the girl’s cousin. They first

offered me *buna* (coffee), which was soon followed by popcorn, a traditional Ethiopian snack served with *buna*. This was then followed by a bread called *dabo*.

The girls wanted to talk about me, where I was from, and I entertained them in broken Amharic and broken English. This was the role I could occupy on this occasion, as possibly the only white person non-Ethiopian who had ever visited their home. I asked them about the photos on the wall, trying to understand a little more about the family structure. I ate, drank, and chatted with the girls while the interview took place just a few feet away. It was the occasion I probably felt most like an outsider, yet the view it offered me to observe the interactions of the household was unique.

Thinking on the role of the researcher in qualitative studies has evolved, with issues of positionality, power, knowledge construction and representation requiring reflection and interpretation along with the unit-of-analysis data stream (Merriam et al., 2001). The agency of participants in satisfying their curiosity about the stranger in their midst through our exchange was part of the complexity of qualitative research, and my experience is that these sometimes unexpected and unanticipated, sometimes subtle, enriched both my role as researcher and my understanding of the women's fasting.

Pregnant women conference

The setting of the first group of interviews at the health centre in Picolo during a pregnant women conference (PWC) was another example where I was a spectator. PWCs are held in each kebele, the lowest administrative unit of government, on a monthly basis, under the leadership and coordination of the Health Extension Worker, with support from a midwife from the health centre. HEWs typically identify pregnant mothers from the community and link them to ANC care and invite them to attend a PWC.

During a break between two interviews, there was a commotion outside the room where we were sitting. A priest wearing his traditional vestments was walking through the gate, accompanied by some of the health staff. A practice of inviting priests to PWCs has become more common though not yet a standard practice and is aimed at addressing care-seeking behaviour, including skilled birth attendance, and community social norms that view pregnancy

as determined by God (Aresie and Dagneu, 2019). On this occasion, he talked with the women for over an hour in the courtyard, providing a visual link between the role of religion and health in the community.

Profile of interviewer, role and contributions

Given the qualitative approach to this study, along with the research topic and participant profile, selecting a female interviewer with native Amharic skills was the preferred method for conducting interviews with women. Though conducting interviews through an interpreter was explored, conducting interviews in Amharic was ultimately decided as the best way to achieve a fluid and conversational flow with women. After interviewing multiple people for the role of interviewer, I selected Rahel, an Ethiopian-American woman and a professional journalist by background who was born and had lived the majority of her life in Ethiopia, in addition to being fluent in both Amharic and English speaker. While I was initially concerned about her lack of research experience, the more I talked with her and listened to her questions and ideas about the interviews, the more certain I became about including her in the study. Additionally, Rahel's fluency in interviewing, facilitating discussions, and her background in working on women's issues such as gender-based violence, factored into my evaluation of the strengths she brought to the study. Last, her excitement and belief in the study's significance and the opportunity to provide research experience for a young professional also influenced my decision.

Language and cultural understanding were only two of many aspects of relevance to the selection of an Ethiopian interviewer. With a deep understanding of the local culture and social norms, Rahel also served as a cultural interpreter for me on many occasions. Rahel was from the capital city of Addis Ababa, and her dress and manner of speaking were different than the women we interviewed. During the pre-fieldwork stage, we discussed awareness of this and strategies for handling it. Even with my limited Amharic language skills, from the first set of interviews I noticed how she adapted herself and changed her vocabulary and language style to match women. For example, Rahel had a cold during the first group of interviews. Before beginning each interview, Rahel excused herself in advance for any interruptions in the interview that might be caused by her sickness,

coughing for example. This invariably began a side conversation with women about the weather and how best to treat a cold. I think these exchanges relaxed the women before interviewing began in earnest. Rahel observed cultural norms, such as covering her head during the last group of interviews, which occurred outside a church, always providing advice such as this to me in advance of interviews. She took social cues and incorporated them into the interview process, such as closing a window for one woman who was recovering from a cold. During an interview with a woman who was only days postpartum, she gently elicited from her that she was more comfortable with Rahel, rather than both of us going into the inner room where she was breastfeeding her baby, to conduct the interview. Among the interviewer's most valuable characteristics was her ability to connect with women and put them at ease. Had I selected a local interviewer, some of the urban-rural and regional differences may have been diminished, but participants may have felt they couldn't disclose certain beliefs or behaviour with women living in their own communities. Also, the economy of weekly in person meetings with Rahel in Addis Ababa would have been lost, especially given the periods marked with security-related travel challenges. What, if any, barriers were presented by selecting an urban interviewer were not readily apparent to me. As discussed above, Rahel acknowledged her differences from some of the interviewees and was skilful at integrating herself into each interview scenario. Her cultural aptitude to distinguish and ameliorate differences that may have posed a barrier in interviews, in my opinion, outweighed any drawbacks in this respect. With myself at one end of the interview participant spectrum and interviewees at the other, Rahel competently bridged the intervening space to accommodate the needs of both.

Whilst Rahel had conducted interviews as a journalist, she had not conducted interviews for research purposes, which necessitated extra pre-fieldwork training and providing continuous feedback to her as interviews progressed. The latter became a regular part of our debriefing sessions after each set of interviews and again after interview transcriptions were translated into English. Because the transcription of recorded interviews and first draft English translations took approximately 2-3 weeks per interview group, the debriefs

were particularly important for reflection and analysis. Both in the debriefs and interview transcriptions, Rahel and I discussed new terms, concepts, and ways of translating and describing Amharic phrases in English. An example of this is the term *yenefs abat*, which could have been translated simply as 'priest' but carries another meaning in this case as a 'soul father' and family priest.

Debrief sessions provided us with opportunities to share and develop a conversation based on our initial observations from each interview. Typically, Rahel would brief me on an interview from her perspective, noting areas that she found particularly interesting and suggesting changes to the topic guide. For example, based on her suggestion, the order of some questions in the topic guide was changed from asking about why women fast as one of the initial questions to appearing later in the discussion. This was done based on her opinion that women seemed to respond matter-of-factly to this question. Allowing the discussion to develop more slowly by first asking them about their fasting diet and their families helped her develop a rapport with participants before delving into what often became a conversation on religion and personal feelings about decision making power.

I shared with her my observations of women's body language and asked her to elaborate on, for example, where they had laughed in an interview or key words I heard repeated during the course of one or several interviews, prompting her to explain the context of these. Based on these initial briefings, I also provided feedback to her on interviewing technique. One of the most persistent challenges we discussed was a lack of follow up questioning to more fully delve into particular themes or new topics. This generally followed a similar pattern. Rahel would ask a question, receive a response that she interpreted as sufficient, and move on rather than purposely drilling down into the subject as if she were hearing about it for the first time.

Another way in which weak follow up occurred was during the emergence of an alcoholic drink called *t'ella* that women began mentioning as a common beverage during breastfeeding and pregnancy and which was consumed during fasting periods. While Rahel was familiar with *t'ella*, I was not and did not begin to notice its presence in interviews until after the English transcripts were available to me. For Rahel, drinking *t'ella* during

pregnancy or breastfeeding was not new insight as it was for me and, therefore, in this instance, she overlooked including it in our post-interview debriefing sessions. Once it came to light as a new area to explore, we were several more interviews into the study, having passed some opportunities to ask about *t'ella* from women who did not mention it on their own. While Rahel's insider status gave her an understanding of the culture in areas such as drinking *t'ella*, it could also at times limit her ability to view topics that women considered commonplace as opportunities for further exploration during interviews.

My status as an observer during interviews was one of my most persistent challenges as a researcher. As instances such as this appeared, I shared my thoughts with Rahel and allowed her to reflect hers as well. Then, we would focus on steps to improve the process in the future. Being somewhat limited in my ability to control these occurrences, as I was dependent on the English interview transcripts and debriefing notes, I put additional effort into mentoring Rahel. I reiterated her value as a cultural interpreter whom I needed for explanation of even small details that she may find irrelevant. I added specific questions to our debrief sessions, 'What new topics emerged?' 'Were there culturally specific nuances that need detailed explanation for a non-Ethiopian audience?' 'What would a non-Ethiopian find most interesting about the interviews today?' I think it is important to note that these gaps in data collection do not limit Rahel's contribution to interpreting data. Whenever in the process emerging themes were identified, Rahel's insight to these was invaluable to my own subsequent interpretation.

Beyond data collection and analysis, Rahel's growth as an interviewer and researcher is one of the outcomes of this study that I am most proud of. She remained open to all feedback on her interviewing style and skills, which is in itself an important quality for a researcher. The intense focus on her on-the-spot decisions was always received with openness and a willingness to learn and improve, which I not only relied on greatly for my research to be completed, I respected her as an individual and professional because of it.

As important as her interviewing and interpretation skills, Rahel served as a de facto cultural interpreter and social interlocutor as we moved through interviews. I came to trust

her awareness of the Ethiopian and Amharan landscape She was also a valued source of information about the changing security landscape as I conferred with her regularly on planning interview timelines and other logistics. This collegial relationship between the interviewer and research student was one of the most valuable part of the research collaboration experience. Rahel, like most Ethiopian women, fasted regularly. She was also a young mother with great interest in both the research process and the value of the work we were implementing. Her presence was integral to women making themselves available to speak about a personal health and religious matter through a process that they had never encountered. The women who were interviewed generally required frequent prompting because they tended to give short responses, particularly until they felt more comfortable as the interview proceeded.

9.4 Post fieldwork events

Highlighting the unpredictability of safety and security, two serious incidents occurred in Amhara Region, where this study took place, in the six months after the completion of this fieldwork. Researchers conducting an HIV integrated biologic and behavioural surveillance survey among out of school adolescent girls in Bahir Dar were threatened and attacked by a group of young people while undertaking data collection, which included taking blood samples. This resulted in the destruction of project a vehicle, loss of study tablets, and injury to one study participant.

The second incident occurred less than two months later when an Ethiopian national PhD candidate and two colleagues were collecting saliva and stool samples as part of water, sanitation, and hygiene-related research in schools. The three men were attacked at a primary school by a mob of youth, the two researchers stoned to death and the lab technician critically injured. The town where the second incident occurred, Gonji Kolela, is approximately 50 kilometres from Bahir Dar on one of two major roads leading south from the city. Fifty kilometres along the other road from Bahir Dar is Picolo, one of the two data collection sites for this study.

In both instances, rumours had spread that the researchers were administering injections to cause infertility, a topic carrying political sensitivity given the population-dependent

allocation of resources. The association of medical research with an attempt to cause the deliberate reduction of populations through the spreading of disease, reduction in fertility, or “outright genocide” is not uncommon in the African context (Geissler & Pool, 2006). A decrease by three million people for Amhara Region in the 2007 census has been contended because population size has significant socioeconomic and political implications. Representation in the House of Federation is based on one representative for every million people, and the number of seats a region has in the House of Peoples’ Representatives also has a population-based calculation. In addition, budget allocations for regions and priority given to large economic projects are based on census data. These points have become deeply ingrained in the Amhara nationalist movement and used as a rallying point against the current government.

Rumours of research malfeasance in Africa are also associated with the traumatic history of colonialism (Geissler & Pool, 2006). Ethiopia, however, was never colonized and does not have the same historical perspective with regard to this particular power dynamic. While they contain the same doubt-provoking local interpretations of medical research ethics as those derived from outsiders conducting research in formerly colonized African countries, I believe the Amharan rumours are related to internally derived power dynamics, influenced by the current political situation, ethnic rivalries, and insider-outsider perceptions on a national and inter-regional level.

Geissler and Poole posit that it is unnecessary that those who promote rumours actually believe them (Geissler & Pool, 2006). They are a form of local commentary on research and its ethical challenges rather than a rejection of science, and Stadler and Saethre argue that they are the means by which “foreign enterprises such as a clinical trial are rendered local.” (Stadler & Saethre, 2010). Study communities form their own conceptual and ethical models to interpret research and debate these in the context of current events (Geissler & Pool, 2006).

This explanation of the Amharan rumours is both consistent with contemporary political events and focuses attention on framing the ethical matters involved in research to reduce risks to

both study population and researcher that is imperative given the potential for tragic loss of life. The documentation and sharing of local rumours as Geissler and Pool have done is a noteworthy endeavour worthy of further conversation among those conducting research in African settings.

9.5 Conclusion

This was a learning experience for me as researcher in addition to what I learned about maternal fasting in Ethiopia. Reflection and reflexivity are critical tools were important elements to respond to the research environment and make appropriate adjustments. Our sociocultural background has impacts on the way how we observed our informants, how we interacted with them, and how we interpreted our observation data.

Some instances, such as striking the right balance in selecting interviewers for qualitative research methods, have left me with specific protocol elements to incorporate into future research activities. Others, like political events, helped me understand the inherent risks in conducting research in difficult settings. Both types of experiences contributed to my professional growth as a researcher. Without the inclusion of a reflexive approach, I also would have missed the many learning opportunities that initially presented as challenges and became important process findings.

Chapter 10 will focus on the interpretation and relevance of study results.

10 Discussion

Up to this point, I have looked at the context of women's health in Ethiopia in general and nutrition-related indicators for maternal and child health, along with dimensions of women's status. Religious fasting has been introduced as a normative practice in Ethiopia among Orthodox Christians. A literature scoping review revealed that few published sources exist on religious fasting in Ethiopia, despite its practice by Orthodox Christians across their lifespans, including during nutritionally critical periods.

The overall research aims arose from the desire to better understand the public health implications of the linkage between high levels of under-five stunting, maternal anemia, and maternal morbidity and mortality in Ethiopia, a country with high levels of stringent fasting among the Ethiopian Orthodox population, including anecdotal evidence that this includes pregnant and lactating women.

Using a qualitative approach to better understand the practice of fasting during pregnancy and breastfeeding, semi-structured interviews were conducted with 19 women in the Amhara Region of Ethiopia. The Social Ecological Model was introduced to help identify and interpret the influence on women's practice of fasting while they are pregnant and breastfeeding, and the major themes emerging from interviews with rural and urban breastfeeding and pregnant women were presented.

The results obtained during this study help to address these questions, though some gaps in understanding are noted below and are elaborated in recommendations for future studies of fasting and nutrition in Ethiopia in Section 10.5. Study results shed light on two broad areas of women's fasting experience: the agency that women express in their decision-making on fasting and the conceptual framework of religion as a determinant of health beliefs and behaviours. Insights into how women exercise agency through fasting have implications for public health practice in the following ways: for measuring empowerment, for designing nutrition sensitive interventions, providing insight into religion as a determinant for health dietary behaviour, and for developing nutrition and nutrition-related guidelines and policies that are better grounded in the context of women's lives.

Results from the study indicated that women typically engage in at times an adapted form of fasting during these nutrition-sensitive periods of life and have a developed appreciation of both the challenges and benefits of fasting, which crosses both the physical and mental/spiritual boundaries of definitions of health and well-being.

In this chapter I will state my interpretations of the data in relation to existing literature, discuss the public health implications of my findings, and provide recommendations based on these findings for practice, policy and future research.

10.1 Study results in relation to evidence reviewed

A significant implication of this study's findings in relation of findings to research included in Chapter 5's Scoping Review is the contribution to the evidence base on Ethiopian Orthodox maternal fasting. At the time of the initial review, only one study that focused on women's fasting during pregnancy or breastfeeding was identified in the literature (K. E. Knutsson & R. Selinus, 1970). While pregnant women were included in Knutsson and Selinus's anthropological study, their paper was not exclusive to Orthodox fasting in the Amharan context and also included children and men (IBID). This DrPH study further focuses on women's specific fasting attitudes, concerns, and behaviours while pregnant and breastfeeding. From a public health perspective, it identified themes specific to women's distinct experience with fasting in Ethiopia/Amhara.

A consistent finding of this study and those included in the scoping review was the frequent continuation of fasting when a fasting period overlapped with pregnancy and breastfeeding. A related finding that was consistent with both the evidence reviewed and this study was that women continued to fast during these periods despite an exemption from fasting or option to "make up" the fast at a later date. These findings highlight the important role of religious belief and observance in determining dietary behaviour for many women during the first 1,000 days of life. This DrPH study, though, looks in more depth the use of the accommodation of ending the daily fast earlier than normal in response to physical effects of fasting, such as nausea.

There was a lack of evidence both in this study and the evidence reviewed on behavioural interventions. Despite the public health importance of reaching women with culturally relevant

nutrition messages, women are not being consistently reached before and during pregnancy on the topic of religious fasting. In addition to health professionals, the role of religious leaders as trusted figures from whom women take much of their understanding and guidance on fasting was another consistent result; yet, this group is also not being reached with interventions aimed at maternal nutrition. For populations that maintain fasting as part of religious obligation, enlisting support from religious leaders is a crucial for both further understanding issues surrounding maternal fasting and public health approaches to address child and maternal undernutrition.

While this DrPH study did not look at cross-cultural experiences of immigrant women as did some of those in the scoping review, the gap between health and religious institutional behaviours is pertinent. Regardless of religious affiliation, women's agency is linked to their experiences fasting. For example, pregnant and lactating immigrant women who fast are doing so even when their behaviour is not normative. The translation of health messages into culturally accessible interventions is necessary whether women come into contact with these institutions in their home community or in a cross-cultural setting as immigrants.

10.2 Gender norms and women's agency in dietary decisions

The GOE's National Nutrition Programme II recognizes that women's lack of access and control over household resources, time, knowledge, and social support networks are barriers to improving nutrition outcomes in Ethiopia (Yimer & Tadesse, 2015). The power imbalance between men and women regarding access to and control of resources exists in every domain of women's lives, including decisions on when and whom to marry and who determines the use of family resources, financial, time, human, and otherwise. Social norms, too, limit women's freedom to behave in ways that are outside accepted boundaries. Women and girls are overburdened with productive (cooking, cleaning, childcare, tending to animals, fetching water), reproductive (pregnancy, childbearing, childrearing, breastfeeding), and community work (daily/weekly church attendance, caring for the sick) and tend to experience food insecurity, a recurrent problem particularly in rural areas of the country, differently than men and boys (USAID/Ethiopia, 2017). As a result, women are often first to suffer from malnutrition,

which in turn negatively impacts their productivity and quality of life as well as the nutritional status of their children (IBID).

Two aspects of agency definitions that are commonly espoused are the ability to exercise control towards outcomes of value, including those intended to advance health and well-being, and the possession of power directly (Alkire, 2008). While these definitions are not necessarily limiting, I suggest that it is necessary/helpful to view/test them within the context of health frameworks that are centred around the notion of denial and limitation, and, therefore, may appear to be in conflict with the power and control dimensions of associated with agency. In addition, rather than being a universal concept, agency may be context specific, and its dimensions may change within a single group or individual.

While religion may reduce agency in some ways, it can lead to an increase in agency in others. Because agency is a complex and multidimensional concept, contextualizing agency using qualitative approaches also allows us to differentiate, for example, support through social networks from individual autonomy and gain a better understanding of how women view their fasting decisions within the wider social systems that intersect their daily lives.

In the context of gender norms in Ethiopia, Orthodox religious fasting offers a new way for the Western public health professional to view Ethiopian Orthodox women's health and nutrition. At times it challenges the way in which standard indicators of gender balance and women's status are used to. It adds a dimension of understanding women's lives and provides a key, yet sometimes overlooked, element when considering women's health in Ethiopia.

The cultural context of religion provides a pathway to increase agency in health decision making where women move between related yet diverse domains of health and life, accepting that low agency in one domain, e.g., reproductive choice, does diminish high agency in another, i.e., dietary behaviours. Giddens' theory of structuration involves reconceptualizing a 'duality' of voluntary action (agency) and rules and resources (structure) that is incorporated by women fasting, where neither structure nor agency can exist independently in this reciprocal relationship (Hardcastle, Usher, & Holmes, 2005). While it would be misleading to attribute the consumption patterns of Ethiopian Orthodox women to individual level decision making

alone—neglecting to account for the social relations and process of eating— individual agency of women is a key component for understanding women’s eating patterns and understanding more fully women’s empowerment in health decision making.

Definitions of women’s agency

Agency, empowerment, and autonomy are used interchangeably to describe the ability of women in developing countries to influence their health decisions (Osamor & Grady, 2016). Conceptual frameworks of empowerment cut across subfields and disciplines, including feminist economics anthropology, and public health. Definitions of women’s agency encompass several key concepts of decision-making, choice, and action, “the ability of women to make choices and transform these into desired actions and outcomes” (Alsop, Heinsohn, & Somma, 2004). Most definitions emphasize the ability to exercise choice, drawing on Sen’s concept of an agent as “someone who acts and brings about change and whose achievements can be judged in terms of her own values and objectives,” and Kabeer’s definition of empowerment as “the process by which those who have been denied the ability to make strategic life choices acquire such an ability” (Kabeer, 1999).

The institutional, social, and individual imperative to fast more than half of the year brings a level of austerity to food consumption that may be severe in its physical and nutritional effect on women of reproductive age, combined with the physical work burden of daily life felt especially by rural women. While these factors may seem to reinforce a lack of control in dietary decision making, the qualitative approach to this study is vital to showing that in women’s own accounts of fasting high ownership and power in food decisions are evident when they pertain to religion. This is an anomaly when it comes to women’s decision-making authority in traditional Ethiopian settings.

A woman’s decision to eat or not eat or limit the types of foods she eats is strongly determined by her religious conviction, and religion gives her an unusual space in which to make these decisions—with influence of family and society but not strictly determined by these. While the norms around fasting contribute to her desire to fast, the personal nature of fasting means that women exercise autonomy even within the social framework that expects fasting from everyone. Many women were unaware of the EOC letter waiving the requirement, and it was

unclear the extent to which this message had been conveyed by priests. Fasting exceptions or deferred fasting as mentioned in some of the studies in Chapter 5 on fasting by pregnant Muslim women would likely require a sustained multi-stakeholder campaign with additional policy interventions given women's high level of personal fasting agency.

Women's ability to choose when and what to eat in accordance with their values exactly meets a core element of definitions of agency. Further, this agency is provided vis-à-vis an austere, doctrine-based behavioural custom. Where normally strict religious custom would be perceived to limit women, in reproductive health choices and behaviour for example, it has the opposite effect for women based on their own descriptions.

Another standard definition of empowerment is "the ability—technical social, and psychological—to obtain information and to use it as the basis for making decisions..." (Dyson & Moore, 1983). My study suggests that women utilize an array of information sources in their decision-making process. These include the active utilization of formal and informal social networks to obtain information on which to base their food decisions but also on a more passive reception of information about fasting that begins in childhood. Most of these information sources are proponents of fasting in the Ethiopian context, even during pregnancy and breastfeeding. It is mainly the informal networks of women that illustrate the importance of people who help women determine the decision to fast or not as well as the degree of fasting when pregnant or post partum.

Kamiya and Senarath and Gunawardena's definitions of agency include the relational power of women relative to their husbands (Kamiya, 2011; Senarath & Gunawardena, 2009). In rural Ethiopian communities, women experience diminished capacity to make health care decisions. In their cross-sectional study in southern Ethiopia, Alemeyehu and Meskele asked women who makes decisions about their health and found that among 40% of women, decisions about their health are made by their husbands rather than jointly with them or mainly by them alone (Alemeyehu & Meskele, 2017). Here again, this study demonstrates an alternate view of women's authority over their bodies and health behaviours in the form of fasting. Women described either a partnership approach to fasting with their husbands or, if not in agreement, an allowable space to make their own decision to fast separate from their husbands. The

enhanced ability to decide their eating patterns illustrates that women can be at least co-equal to their husbands in joint decision making. Power exerted by the husband in other domains does not appear to be a hindrance to women's agency with respect to the decision to fast or not to fast.

Measurements of women's agency

The very way measurements of women's agency are captured requires rethinking, and this study's findings present clear implications for how women's agency is conceptualized and measured in public health. While there are standard empowerment modules included in the demographic and health surveys worldwide, the questions that these are based on may not capture the complexity of agency as experienced and practiced by women in Ethiopia (Demographic, 2016). Some of the most commonly used survey questions for measuring women's agency and decision-making power focus on participation and influence in household decisions, particularly spending decisions. Moving from general to more specific questions that are context-dependent is needed. Locally relevant indicators of empowerment can be developed and used to create new, contextually-driven, definitions of agency. For Ethiopia, collecting information on women's fasting behaviours is a helpful indicator to inform a more nuanced understanding of women's empowerment and nutrition status at the same time.

Contextualizing gender and empowerment through fasting

Religion adds another dimension to the concept of women's empowerment and health agency. As a group, women's collective agency can be transformative. Women's fasting during pregnancy and breastfeeding has shaped societal norms rather than merely being a passive recipient of religious doctrine. Agency is intrinsic in health care seeking and utilization and is positively associated with multiple health indicators and, where women lack the ability to make strategic life choices, there are negative correlations with health outcomes (Osamor & Grady, 2016).

An expanding definition of personal agency does not mean, however, that deep cultural and social barriers that restrict women's decision-making power do not still need to be addressed through nutrition, food security, MNCH, and other health programmes. The attitudes and

behaviours of individuals and communities require gender sensitization to improve the understanding of the enormous physical challenges and burdens experienced by women during pregnancy and breastfeeding.

Women are equally invited to fast alongside their male partners, along with male priests, from a very early age. This gender equity around fasting is not seen in other facets of women's lives, particularly in rural areas, where gender imbalance tends to be more pronounced, or in geographic regions, like Amhara, where Orthodoxy is widely practised. In fasting, women are the equals of men, and perhaps they naturally want to exercise the ability to experience the balance of power.

Maternal mortality, young girls, and nutritional status

With the sizeable demographic shift that Ethiopia is experiencing, the youth bulge that constitutes adolescent girls and young women will increasingly constitute an important area of prioritization by the Government of Ethiopia (GOE). As of 2016, 42% of Ethiopia's population was below the age of 15, and population projections for both 2030 and 2050 indicate that youth will continue to make up an increasingly significant portion of the population structure (Bureau, 2016).

Orthodox women continue to fast into adolescence, when adequate nutrition is necessary for continued bodily development, and adulthood. For rural women in Amhara, who tend to marry at a younger age and with greater involvement of their parents in the decision to marry, the consequences of long periods of food and nutrient restriction, may contribute to adverse effects on healthy physical growth (Ethiopia, 2017). Though unclear the degree fasting might contribute to inadequate growth and poor maternal and child health outcomes, at a minimum it plays an integral role in the diets of girls from before the start of adolescence and menstruation to adulthood. Combined with patterns of early marriage and childbearing, inadequate dietary diversity may contribute not only to maternal mortality but to overall health status.

While fasting is a highly integrated practice throughout Ethiopia, there may be geographically-based nuances, for example, urban-rural or ethnic group determinants, that require

programmatic differentiation. With the changing demographics involved in Ethiopia's rapidly urbanization and youth bulge noted in 4.1, the intergenerational implications of maternal and child nutrition are very relevant. Given the attention on reducing maternal mortality in Ethiopia, the intergenerational impact of adolescent nutritional status should not be overlooked when addressing issues surrounding early marriage and childbearing and their associated consequences for both girls and their children, including future health, social, and economic well-being. Gains have been realized in reducing maternal mortality, yet, just as with progress toward a number of health indicator goals, the last mile of progress often proves the hardest. While further research and policy dialogue is warranted, a clearer understanding of factors associated with childhood and adolescent fasting would provide additional interventions and engage both community and health stakeholders. Again, the EOC letter would benefit younger mothers in particular, if religious leaders in consultation with their communities could agree that adolescent nutritional status is of critical importance.

10.3 Religiosity

Fasting in the Ethiopian context has similarities with a long human history of spiritual healing practices and the belief that illness manifested on a physical level is connected to spiritual aspects of an individual. Religion attributes sacredness to ordinary activities, including what and when people eat, linking these with matters that supersede mere physical necessity. The Kosher diet of Orthodox Jews, attitudes toward physicians and health care, reactions to pain, and beliefs about the relation of body to spirit demonstrate the avenues through which religion exerts indirect effects on health (Levin & Vanderpool, 1987).

A medical-focused approach to disease and health ignores these spiritual aspects of health, though systematic research on religious involvement and physical and mental health has begun to explore the mechanisms linking these. Evidence from epidemiological and clinical studies and medical research supports the impact of religious affiliation and involvement on a range of mental and physical health indicators and disease conditions, e.g., cancer, hypertension, stroke and other cardiovascular conditions, gastrointestinal diseases, indicators of physical disability, self-ratings of health status (Levin & Vanderpool, 1987).

Religion also contributes to shaping both risk and protective behaviours. This includes forbidding specific behaviours, e.g., prohibitions against the use of alcohol and tobacco that may result in improved health outcomes. Religious affiliation constitutes an array of characteristics, functions, and processes which are known to be associated with physical and mental health-related behaviours that influence the size of one's social networks and the frequency of interactions with network members, perceptions of illness, internal locus of control, and stress management (Idler, 2014; Koenig, 2012). Along with presumed health benefits of religious practice, religion may also be associated with negative outcomes, such as poorer mental and physical health status, negative coping behaviours, and inappropriate use of health services (Van Ness, 1999).

Religious leaders often serve as gatekeepers to health-seeking behaviours and can exert immense influence on members' perceptions of health issues and health services (Chatters, 2000). In Ethiopia, there is a history of co-opting religious leaders for health education and health promotion efforts that acknowledges the key role they play in the social and community structures that influence health. Religious leaders have prominent role in moving the needle on particularly sensitive social issues that have health consequences.

In the early 2000s, the use of holy water by people living with HIV (PLHIV) in place of antiretroviral therapy (ART) compromised treatment interventions, leading to poor adherence outcomes for these patients (Berhanu, 2010; Kloos, Mariam, Kaba, & Tadele, 2013). Religious leaders from both the Orthodox Christian and Muslim faith communities were utilized for health messaging aimed at delivering health information and, critically, influencing health behaviours among PLHIV. The goal was not to change the minds of PLHIV who believed in the healing powers of holy water but to increase their acceptance of medical treatment as a concurrent healing necessity. Religious leaders have also been tapped to improve the utilization of health services including facility-based deliveries, where socio-cultural barriers related to religious practices are barriers to their use.

10.3.1 Definitions of health

The World Health Organisation's definition of health as "a state of complete physical, mental, and social well-being, and not merely the absence of disease or infirmity" is widely recognized and acknowledges that health encompasses more than just corporeal elements (Conference, 2002). Both mental and social health elements resound with women's descriptions of fasting in Ethiopia, in addition to women's belief that there are physical benefits inherent in fasting. Interwoven through the levels of personal, interpersonal, and institutional influences is religion and the Church. Where health professionals may see nutrition outcomes as their main goal, a rural woman attends to both spiritual and physical needs, and these are, at a minimum, of equal value to her.

Both aspects of health are relevant and necessary to addressing undernutrition in Ethiopia's cultural context. Providing nutrition counselling to PLW requires addressing this dual concept of health, which on the surface this might appear to complicate the problem—and resulting solutions—of maternal and child undernutrition in the Ethiopian context. Religious fasting can appear at times in opposition to physical well-being; yet, women acknowledge that sometimes the mental/spiritual benefits of fasting outweigh the associated discomforts, e.g., fasting despite morning sickness or fatigue. Many women experience fasting as a source of mental strength that contributes to physical well-being. This is a new area highlighted by this study that allows health workers to rethink their approach to service provide and community level social and behavioural change communication. The possibility that this dual perception of well-being as both physical and mental/spiritual poses advantages and unique opportunities to influence women's health and support their decision-making power.

As observed for other religions, religious obligation is an important factor in Orthodox women's fasting behaviour. The institutional significance of fasting in Ethiopian culture is linked through the social relationships between families and the church, and these linkages have wide support in evidence on health-related behaviour and world religions. What is new to our Western understanding of the Ethiopian Orthodox context is that nutrition is so closely associated with the time-ordered and nearly constant call to fast by such large groups of the population, from childhood to death.

Health models are lacking the comprehensiveness to include spiritual health. It could also indicate support for the link between spiritual and physical health that several women spoke about. If there are indeed perceived health benefits to fasting or women view the spiritual benefits of fasting on par with physical health, this may bypass multiple other factors, such as income or access to animal source foods.

10.4 Dimensions of structuration theory and fasting

With its attention to multiple layers of influence on individual behaviour, SEM laid the groundwork for identifying the role of each level in women's dietary decision making while also revealing the complexities and blurred boundaries between levels (Caperon et al., 2019). These categories not only benefit the analysis process of coding and organising data, SEM contributes to an understanding of women as complex and multi-faceted individuals within a dynamic socio-cultural context.

Where individuals and their membership in broader communities begin and end is not clearly defined by SEM, and the ways in which levels intersect required additional theoretical framing. It is in the blurred boundaries between influence levels that some of the most important aspects of women's experiences with fasting occur. The themes of religiosity and women's agency in particular benefit from further conceptualisation of women's movement from individuals to members of religious, geographic, and social communities.

Anthony Giddens' structuration theory views social systems and individuals as active and equal participants, wherein the social world comprises a duality of both individuals as actors and social systems and structures with rules, resources, and social relationships that individuals draw upon (Cajaiba-Santana, 2014). It is the individual's participation in these social systems that bridges the human potential for agency which includes three forms of interaction in which this agency is performed.

Structuration theory is particularly useful for understanding the dual interests of individuals as they interact with the prevailing structures of society and church, allowing for their interpretation of information and exercise of choice (agency). Fasting as a practice is obviously about action, but through this lens action is neither merely individual nor simply voluntary. Like

other religious practices that can constrain as well as motivate, fasting is both shared and personal (Whittington, 2010).

Giddens' view of this duality of action and structure underscores the opportunity for individual behavioural choice: To fast or not to fast? To fast while pregnant or while breastfeeding or both or neither? As a practice, fasting is at its core an individual action; individuals have been given power from the Church to exercise the decision to fast. By interacting with the social structures and institutions on a daily basis, women self-monitor their own activities and the activities of others, e.g., providing guidance on fasting choices at the peer- and family-level, that leads to sustained fasting by many. This nexus of individual power, overlapped with contextual dimensions of culture and society, is also where the decision to modify fasting during pregnancy or breastfeeding may reside. With this recognition of distributed power, Giddens highlights a respect for human potential that aligns with women's self-reported experiences with fasting and supports the use of structuration to inform a public health viewpoint for women's nutrition in Ethiopia (Whittington, 2010).

It is important to acknowledge that one of the main findings of this study is fasting modification, i.e., ending their fast earlier than is the custom and thereby reducing the total number of hours of fasting per day. Modified fasting is shaped by and contributes to shaping women's participation in a spiritually meaningful and behaviourally prevalent practice like fasting. It illustrates two main points for discussion. First, PLW accept a fluidity between SEM levels that does not necessarily compromise the importance or integrity of individual levels of the model. The acceptance of modified fasting, and, importantly, the sharing of perspectives on this topic between PLW and their social networks, indicates that women's experiences with pregnancy, childbirth, and possibly other health events and issues, modifies their interpretation of the SEM levels. This is not to say that a particular level necessarily loses importance but that women move across and interpret the levels in different ways that may be different than in non-pregnancy, non-breastfeeding states.

Second, this adaptation is dependent on women's use of agency as a tool to channel important but sometimes opposing factors to formulate choices and make decisions on their own, even when these decisions might appear to contradict social or institutional rules (Agadjanian &

Yabiku, 2015). Yet, the frequency with which women discuss this modified fasting implies that women accept fluidity across SEM levels and that this does not challenge accepted religious beliefs.

10.5 Limitations of study

As future research is added to the evidence base on Orthodox fasting in Ethiopia and its possible links to public health outcomes, the comparative limitations of this study may change over time. Results of this study align with available data prevalence of Orthodox fasting in Ethiopia, along with anecdotal information that supports women's preference to continue fasting while they are pregnant and breastfeeding. As with all research endeavours, some inherent limitations exist with this study, which should be interpreted considering the following:

When studying culturally important practices or potentially taboo topics, social desirability bias may enter in at least two ways. First, it asks participants to openly discuss their own practises and beliefs and whether these undergo modifications during specific circumstances, such as pregnancy and breastfeeding. The concern for positive self-presentation may lead to overreporting socially desirable practices (fasting) and underreporting of perceived undesirable practices (reduced or absence of fasting) (Krumpal, 2013; Lavrakas, 2008).

The selection of data collection methods, i.e., the choice of interviews rather than focus groups, considered participant social desirability bias through limiting the likelihood that non-fasting women may have been inhibited from sharing their actual views and behaviours during fasting days in front of their peers, as these may have been in opposition to social and religious norms and expectations (EOC exemption notwithstanding). Despite the attempt to address social desirability bias, the possibility exists that respondents may have overstated their fasting or refrained from admitting that they did not fast as frequently as they perceived was expected.

The choice of a non-local female interviewer who was skilled in developing rapport with women potentially further reduced participant social desirability bias by buffering participants responses from knowledge within the local community (Bergen et al.). Finally, attention to the participant informed consent process was intended to encourage women's sense of control

over the interview and increase their comfort with the confidentiality and anonymity of the information they disclosed.

A second aspect of social desirability as a potential limitation is through the use of the Health Extension Worker Program to establish contact with potential study participants during the recruitment process. The use of community health workers provided multiple benefits to accessing the pool of possible study participants while also helping disseminate information about the study to women in the four study communities. Their familiarity with women in their catchment communities introduced the possibility that HEWs would select women who would represent a view of fasting they considered favourable. To limit this potential impact, three out of the four community locations from which women were selected were regular health service sites: an ANC clinic, a pregnant women's conference, and regular health education session with pregnant women at a local church.

Selection of participants for the fourth site, the neighbourhood urban location, relied heavily on the Health Extension Worker to identify pregnant and lactating women in her catchment area. Because the HEW role in the selection of women was greater for this location than the three other sites, these participants have the highest possibility of reflecting her biases towards particular women.

The study was designed to overlap with the 55-day *fasika* fasting period to optimize the opportunity to collect data from women as they were experiencing the fast (or not). The timing of the study, however, could introduce season/time as a confounding variable in that women may have responded differently outside of fast of this duration. Similarly, the stage of a woman's pregnancy during which the interview was conducted could change aspects including recall, intention, knowledge, behaviour. Future studies conducted outside a long fasting season may result in data differences, whether due to recall issues or women experiencing the more routine Wednesday and Friday fasting pattern.

The degree to which the findings of this study are applicable or transferable to other settings is ultimately the opinion of readers (Korstjens & Moser, 2018). The degree to which the qualitative researcher is able to provide the necessary details of the study and its context aids

the reader in drawing conclusions on transferability (IBID). The setting of this research has been described in Section 7.8 and Chapter 9 and includes details on the context in which the research was carried out, sample characteristics, and the process of carrying out the research itself, which add dimension and colour to enrich the findings and their generalizability (Leung, 2015).

Though this study was intentionally confined to Amhara Region because it is a centre of Orthodox Christianity in the country, the small number of women must be considered in determining the transferability of findings to women in the region as a whole and to other areas of the country, other populations of PLW, etc. To limit this effect, purposive sampling included both rural and urban pregnant and breastfeeding women as selection criteria for the study sites, in order to ensure variations in social and geographic variations were represented.

Though women did not mention unavailability of ASF resulting in their decision to fast, food availability was not introduced as a specific question in the topic guide. This limits the ability to understand whether food availability—or other constraints to accessing ASF—played a specific role determining dietary composition specifically during the time and in the locations from which data were collected.

The interpretation of themes was limited by the inclusion of a single respondent group. Based on the socio-cultural influences on fasting in Ethiopia, the addition of other respondent groups, including priests, health extension workers, and other health professionals, would have added to the analysis and discussion of this complex topic. Future studies into this topic should include these and other relevant groups to form a more complete picture of how these groups interact and influence each other with respect to women's fasting decision-making and experiences.

10.6 Public health recommendations

The nutritional pathways linking women and their babies are multifold. A woman's nutritional status during childhood and especially into adolescence contributes to her healthy physical development and contributes to successful maternal and child health outcomes both during and after pregnancy. Good maternal nutritional status is also important in contexts where women engage in physically taxing work, caring for children, collecting water, agricultural production, and managing other aspects of the household. While this study did not look at the

effects of fasting on maternal and child health outcomes, the possible direct and indirect pathways through which fasting could influence these should be explored, especially as access and availability of food is not necessarily a driving factor in women's decisions around what to eat when they experience pregnancy or breastfeeding during fasting periods. The replacement foods women consume in lieu of ASF while could provide nutritional benefits for mother and baby, e.g., lentils are a staple of many fasting foods (*wats*) and are high in folate, which is necessary during pregnancy to aid in preventing neural tube birth defects. With declining yet still high levels of under-five stunting, dietary diversity and the role that sustained caloric or micronutrient deprivation, particularly when introduced to existing, underlying undernutrition, must be better understood in the Ethiopian context. As noted Chapter 5, evidence of potential nutritional pathways for PLW observing Orthodox fasts lacks evidence, but some association between other types of religious fasting with pre-term labour has been detected (4.2.1).

Talking about maternal nutrition and nutrition in general in the Ethiopian context must be relatable to people who fast. Guidelines for maternal nutrition, adolescents, children, and other groups can be contextualized and made more user friendly when they acknowledge the fact that many women, perhaps most, will decide to fast while pregnant and while breastfeeding. This research demonstrates that there are entry points for discussion at multiple levels: interpersonal, family, school, community social groups, church, and national policy.

Research recommendations

Further investigate social perspectives on fasting among PLW

This was just one attempt to understand women's fasting in four communities in one region of Ethiopia. Broadening future research to include more women and communities would lend bearing to the generalizability of these results. Additional groups should be studied in relation to maternal fasting, including further qualitative studies with religious leaders and health workers who directly interact with women. Food availability, which can be linked to a range of factors, should also be considered in relation to maternal diets, particularly in a context like Ethiopia where both proximal and distal factors, water availability, changing urban and rural landscapes, and a political situation, to name just a few, may impact what types and quantities

of food are available to households. Research that begins with the period of preconception is necessary to better understand issues around intention to fast. This is also the time that pregnancy nutrition counselling should begin and recognise the context of fasting for women who have or will begin trying to conceive.

Because women rely on guidance from both groups and highly value consultation with priests for advice on fasting, collecting information on how priests and health workers perceive their knowledge and perceptions of fasting and their role in influencing dietary decisions amongst pregnant women should be a focus of future studies.

Take fasting seasons into account when conducting research and survey studies

The timing of research and survey activities in the planning and analysis phases should take fasting into account. Diet and even recall of diet may vary depending on whether data are collected during a fasting or non-fasting period. In a context such as Ethiopia, where large shifts in what people eat occur routinely, the planning and carrying out research activities should take these shifts into consideration as a matter of course. Interpretation of results should also consider the use of a fasting lens when appropriate.

Surveys of dietary behaviour can integrate fasting variables

Surveys that collect data on food consumptions and dietary behaviour can incorporate fasting-related variables. These include but are not limited to collecting data on child diet versus household diet that would help inform interventions aimed at improving the consumption of ASF for children under seven who have not yet reached the age of fasting. Pregnant and breastfeeding women are responsible for preparing and serving food to their children.

Longitudinal studies

Longitudinal cohort studies to assess the effect of fasting on maternal (pre-conception to post-partum) and child health and well-being are needed as this is still little understood. Rather than relying solely on retrospectively collected data, it is important to understand among women planning to become pregnant what their attitudes and intentions are with respect to fasting and to compare this with subsequent practice in pregnancy and breastfeeding periods (Selvan and Stanford, 2006). Studies on severe famine have linked third term in utero exposure to

severe nutritional deprivation with higher levels of chronic disease (van Abeelen et al., 2012). The effect of sustained, planned nutritional deprivation on the children of women who practice Orthodox fasting requires investigation in a context where under-five stunting remains at close to 40%.

Programmatic recommendations

As this study highlights the complexity of maternal nutrition in Ethiopia, the recommendations for future research are wide-ranging. The formative stage of this research topic is both exciting and begs further discussion and investigation. This section therefore organizes research recommendations into priority levels.

Previous research has not looked at the physical demands of Orthodox fasting on PLW, perhaps due to the acceptance of fasting as a social norm. It is clear, however, that Orthodox women do experience physical effects of fasting during pregnancy and breastfeeding. Overlooking this aspect of the ante- and post-natal periods dismisses a common reality for many Ethiopian women. Women themselves are acutely aware of their bodies' needs and reactions to fasting and far from dismissing these experiences, acknowledge and accept them as a part of the fasting experience. Multisectoral stakeholders should acknowledge the physical demands of fasting as a reality experienced by PLW that is distinct from how other members of the community experience fasting.

The commitment to fasting and consistency of its practice across women's life stages indicates that women find ways to manage the physical demands of pregnancy alongside the physical demands of fasting. Understanding these coping strategies offers an opportunity to engage and support women as they manoeuvre the nutrition challenges of pregnancy and breastfeeding. Supporting a coping strategy such as breaking the fast earlier than 3:00 p.m. during the 55-day *fasika* fast would benefit women who want to fast and offer an area of compromise that would also benefit their physical challenges of nausea and fatigue. Studies of other PLW fasting groups have not looked in depth at coping strategies for physical effects. One possible reason for this is that the intensity and frequency of Ethiopian Orthodox fasting increases the overall physical demands on PLW as the fast continues, making them more aware of this aspect during fast

periods. Learning from Ethiopian PLW's physical coping strategies could be considered in other religious fasting contexts and population groups.

Health professionals

Skilled health professionals are required at all service delivery levels to implement nutrition-related policy and services for women. This includes the ability to promote behaviour change and risk reduction on fasting's effects on PLW and the skills to assess women's attitudes and beliefs about fasting (Burke & Fair, 2003).

Practitioners must be adequately trained to address fasting amongst reproductive age women as early as preconception counselling. Preconception care is important to reduce several risk behaviours and exposures that can affect fetal development and subsequent outcomes (Dean, Lassi, Imam, & Bhutta, 2014). While the practice of provider-initiated preconception counselling is currently low, leading to low levels of preconception care by women, as strategies are developed to improve preconception care, nutrition and fasting should be integrated into provider pre- and in-service training modules (Kassa, 2019, Demisie et al, 2019). Giving standard nutrition information and education during antenatal and postnatal visits despite knowing that women will fast is a missed opportunity during these interactions.

The integration of fasting pre and in-service training for health workers at all levels is needed, particularly those who interact regularly at the community level with women and families. Particularly in rural communities, Health Extension Workers are the main source of nutrition information and occupy a position and proximity to women to provide both insight and influence into women's fasting behaviours. Understanding HEWs' own perceptions, as women and mothers, along with their role in providing health education and services, is critical to their role providing ante- and post-natal health education services. Fasting should be integrated into the curriculum and training on the package of services for both rural and urban HEWs. As part of this, a values clarification exercise could help HEWs identify and address their own assumptions about fasting and how they can support women's decisions to fast or not even when this is not in alignment with their own.

Priests as agents of change

A central figure of this research narrative is the church as represented in the person of the *yenefs abat*, an influencer with the ability to substantially inform and guide women's dietary decisions. The quote below shows that even priests describe the physical effects (and also the spiritual benefits) of fasting, making his contribution to the conversation and interventions on maternal fasting uniquely relevant.

At this time it would become increasingly difficult to interview the normally affable priests, as they would frequently be asleep, as their fasts entailing such long periods of no food or water on a daily basis, while their liturgical duties were increased. Several priests told me at these times that they found the fast extremely difficult and tiring, although emphasizing at the same time that it was a good and desirable thing, even a healing and regenerating endeavor. This state of affairs lasts for eight weeks and intensifies over the final week leading up to Easter (Boylston, 2012).

As noted previously, involving the church in message delivery for ART has been used with success in Ethiopia. Skilled birth attendance also provides an example of successfully utilizing priests as agents of change in Ethiopia. For women who refused to deliver at health facilities because they were isolated from having a religious leader on hand to bless newborns, a similar approach integrated this cultural norm to increase the acceptability to women of delivery at a facility. Religious leaders were brought into health centres to encourage this practice. In both of these instances, the health system acknowledged the importance of cultural and religion. Rather than divorcing people's health needs from these, it incorporated them into the systemic approach to treat illness and promote health seeking behaviours.

A step in this direction has already been made with respect to fasting and nutrition through the EOC letter. While the message of the letter provides a clear recommendation, its consequence is only realized if the message is delivered. Given the highly entrenched practice of fasting within Ethiopian Orthodox society, information, education, communication approaches for behaviour change are insufficient without broader addressing the broader socio-cultural determinants. While more evidence is needed before concluding that women are unaware of the letter, there is no indication that its contents have been disseminated in a consistent or universal manner. Discussion around the meaning of the letter with respect to the role of lay

priests would first be required with representation of church representatives from around the country. Unlike the assisted delivery and antiretroviral therapy (ART) examples, the letter strikes a definite position that women should not fast as opposed to recommending that they practice a modified fast. This requires consensus building, given the strong social and individual level focus on fasting.

The message cannot be delivered without priests acting as willing messengers. As with health professionals, an examination of religious leaders' commitment to the Ethiopian Orthodox Church's official stance on fasting for pregnant and breastfeeding women is needed. One method of bringing the EOC's message to women and communities is by adopting the example used for holy water and communicating through sermons at church. Another is to more systematically engage priests in health discussions at pregnant women's conferences. Clear and consistent messages delivered by a priest provides weight that health workers do not necessarily bring when discussing maternal nutrition in the context of religious fasting. While there is great potential in this health system-church institution collaboration on fasting, it requires identifying the areas of mutual agreement on messages as well as those where there is disagreement.

Policy recommendations

Multisectoral nutrition policy includes more than the health and agriculture sectors. In the Ethiopia context, an enabling environment for the National Nutrition Program requires leveraging the influence the church and its ownership in supporting the health and well-being of women and children. Given the position of the Ethiopian Orthodox Church in society, EOC guidance should also be included in the wider scope of policy discussion. The current church guidance to encourage pregnant and breastfeeding women not to fast is hampered by a lack of dissemination. Further, values clarification among priests, who are the main messengers of church policy on fasting, is necessary given the normative practice of fasting across the Orthodox Christian population in Ethiopia.

While priests may already participate in pregnant women's conferences, the evidence of the content and uniformity of nutrition messages they deliver is still unclear. They do not yet

appear to implement a standardised approach to messaging the EOC letter on maternal fasting, yet the potential exists to tap into their influential role and their participation in a dialogue on maternal nutrition. For a woman who exercises her agency in continuing to fast in opposition to her husband's views, religion, as personified by the *yenefs abat*, would act as a protection to support her decision.

11 Conclusion

The Ethiopian government has placed women and children's nutrition as a top priority to achieve the country's Sustainable Development Goal targets. Despite Ethiopia's progress in reducing rates of stunting, maternal anemia and other indicators of maternal and child health and nutrition, changing demographics, including a projected doubling of the population by 2050, will continue to challenge the ability of the country to supply the needed health services and food security to ensure these positive trends continue. More people will strain health systems and increase total food requirements, while at the same time, economic growth will increase purchasing power for animal source foods. This study contributes to a growing interest nationally in harnessing the intersecting influences of religion, economic growth, and demographic shifts for a robust multisectoral nutrition programme in Ethiopia.

A principle implication of this study is to highlight the need for nutrition programming and policies in Ethiopia that consider the socio-cultural landscape and acknowledge the experience of women in determining their food purchases, food preparation, and consumption patterns. Previous research has looked at undernutrition without due attention fasting as a key feature of Ethiopian society. Just as nutrition programming targeting a Muslim population would be sensitive to the religious prohibition of eating pork, Orthodox populations that incorporate lengthy and complicated fasting behaviour need to be considered when programming for nutrition. Putting women's experiences, their self-defined health priorities, capacities, and modes of interpreting and using information into consideration will aid in the continued progress in arresting undernutrition in Ethiopia.

Women play a central role in feeding children, beginning in pregnancy, and are the food preparers in the family. The first 1,000-day period of life is a critical window toward

strengthening health and social outcomes for a child's future years through optimal nutrition for both women and their babies. Interventions aimed at women's health behaviours without consideration of how social, religious, and economic frameworks or individual, interpersonal, and community levels experiences interact misses an opportunity to deliver human- and women-centred approaches to undernutrition.

By themselves, Ministries of Health cannot advance nutrition policy, particularly where programmatic and structural interventions for agriculture, livelihoods, and other development and social issues are concerned. Where and how other relevant sectors can contribute should be examined as critical components in realizing Ethiopia's social and economic development goals for which undernutrition is an identified barrier. This study contributes insight into areas for dialogue between health workers and women on how to approach nutrition within fasting days and periods that overlap with pregnancy and breastfeeding. It demonstrates that non-health sector stakeholders have a role to play in nutrition policy and interventions.

With the start of fasting at the age of seven, the average Orthodox Christian woman in Ethiopia will fast the majority of her life, including all of her reproductive years; yet, religious fasting traditions have been largely missing from health interventions in Ethiopia. Community interventions to complement ENA approaches at different levels of the health system are needed (World Health, 2013). These interventions must fit into the local reality and address underlying distal determinants of nutrition while targeting women's agency in dietary decision-making. A balance between changing women's attitudes toward fasting during pregnancy and breastfeeding with improved nutrition interventions for women that take religious fasting into account is needed in Ethiopia. Health Extension Workers, ANC and maternal and child health (MCH) clinics, and pregnant women's conferences all provide opportunities for community level education and counselling on ante- and post-natal nutrition for women and babies. Health workers should no longer ignore fasting as simply a default behaviour that requires limited or no counselling and require the skills to provide nutrition information and counselling that takes this into account.

Orthodox religious leaders have a significant role to play in implementing the EOC letter on women's fasting, given their centrality in influencing women, families, and communities. There

is ample evidence of the positive impact of religious leaders' participation on HIV adherence and safe delivery in Ethiopia. Nutrition policies must address religion's influence at the individual, community, and institutional levels in order to serve an influencing role and support contextually-appropriate nutrition interventions in the country.

Fasting's role in the religious and spiritual interpretation and value system that women find at the same time physically challenging but emotionally rewarding. The Easter fast during which this study took place is the longest and most physically arduous of the extended periods of fasting in the Ethiopian Orthodox Church; yet, this study suggests that Orthodox Christian women continue fasting as much while pregnant and breastfeeding as they do at other times of their lives, though with some exceptions and adaptations.

As a work of applied research, this DrPH study contributes to a small but hopefully expanding body of literature that aims to provide input for policymakers, programme designers, donors, and other research professionals. Though Ethiopia's past and current struggles with undernutrition are often translated into a national and donor focus on simply increasing food production, this will not necessarily have the intended impact on maternal and child health indicators. Food availability is just one factor in women's dietary decision-making during pregnancy and breastfeeding. Women's own descriptions of their experiences with religious fasting fill a significant gap in understanding what types of foods they will eat, when, and how.

12 References

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Appendix 1 Participant Information Sheet

Participant Information Sheet and Informed Consent

v1 Date: May 10, 2016



Thank you for taking the time to read this information sheet. You will be given a copy of this sheet. This document is 4 pages long, including the Consent Form. Please make sure you have read and understood all the pages.

You are invited to take part in a research study on fasting during pregnancy and breastfeeding. Whether or not you take part in this study is your choice. If you do not want to take part in the study, you do not have to give a reason. If you choose to take part in the study but then later change your mind, you can leave the study at any time for no reason.

This Participant Information Sheet will help you decide if you would like to take part in the study. It will tell you why we are doing the study, what your participation would involve, what the benefits and risks to you might be, and what would happen after the study ends. We will go through the information with you and answer any questions you may have.

You do not have to decide today whether or not you would like to participate in the study. Before you decide, you may want to talk about the study with other people, such as your family or friends.

What is the purpose of the study?

- The purpose of this study is to improve our understanding of fasting practices during pregnancy and breastfeeding. We expect that the information we collect through this study will contribute to our knowledge about women's diets during these periods that may be used to improve the health of women and their children.
- The study investigator is a doctoral student at the London School of Hygiene and Tropical Medicine. She is also health officer with the United States Agency for International Development in Addis Ababa. You may contact her directly through the contact information provided on this sheet.
- This study has been approved by the London School of Hygiene and Tropical Medicine and the Amhara Regional Laboratory.

What will my participation involve?

- You have been chosen to participate in this study because you can provide information on your diet and health during your pregnancy and/or while breastfeeding. This includes information on fasting or not fasting during these periods.
- If you participate in this study, you will be asked some questions about your diet and about fasting.
- Thirty women will be interviewed in two communities in Amhara Region. The time required for participation in the study is approximately four hours. This includes time to learn about the

Participant Information Sheet and Informed Consent

v1 Date: May 10, 2016



study, an interview in August 2016 that will last no more than one hour, and a presentation of what we find as a result of the study.

What are the possible benefits and risks of participating in this study?

- The possible direct benefits of participating in this study are learning more about nutrition during pregnancy and breastfeeding and learning more about fasting during pregnancy and breastfeeding. You will be given an information sheet on nutrition during pregnancy and breastfeeding. You will also be given a list of local resources for additional information about nutrition during pregnancy and breastfeeding.
- The possible risks of participating in this study include that some of the questions during the interview may make you uncomfortable. You may become emotional while discussing some of the topics during the interview. If you become uncomfortable at any time, you may ask the interviewer to stop or the interviewer may ask you if you would like to pause or stop the interview altogether. You are free to stop the interview at any time without giving a reason.

What pays for the study?

- You will not incur any costs by participating in this study.
- If there are any transportation costs associated with your participation, these costs will be paid by the study. For example, if you chose to be interviewed at a location other than your home, your transportation costs to and from the interview location will be paid by the study.
- If you require childcare in order to participate in the study, this will be provided at no cost to you.

What are my rights?

- Your participation in this study is voluntary. You are free to decline to participate or withdraw from this study at any time without experiencing any disadvantage.
- You have the right to access information collected about you as part of the study.
- You will be told of any new information about adverse or beneficial effects related to the study that becomes available during the study that may have an impact on your health.
- Your interview will be voice recorded so that we do not miss any information that you tell us. All information, including these recordings will only be used by those directly involved in the study.
- To protect your privacy and confidentiality, all of the information we collect from you will be protected and will not include your name.

What happens after the study?

- After interviewing all participants in this study, the information collected will be analyzed. The results (or findings) will be communicated back to all participants. Study findings will be shared both in writing and presented in person to participants. Your confidentiality will be protected when findings are presented in any written or oral format. Your name will never be used.
- If you do not wish to know the study findings, you will be given an opportunity to opt out.
- If any of the findings from this study are published, your confidentiality will be protected, and your name will not be used.
- The information we collect from you will be kept for 5 years after the end of the study. After this period of time, paper records will be destroyed by shredding or burning. Electronic records will be securely destroyed through permanent professional deletion from computers and storage drives.

Who do I contact for more information or if I have concerns or questions?

If you have any questions, concerns, or complaints about the study at any stage, you can contact:

Sophia Brewer, Lead Investigator

0911-245-515

Email: sophiabrewer@gmail.com

You can also contact the ethics committee that approved this study:

Amhara Regional Laboratory

Phone: 0911-249-515

Email: mulatkonjo@gmail.com

Appendix 2 Informed consent form (English)



PARTICIPANT CONSENT FORM

Title of Project: Women's views and experiences of Orthodox religious fasting during pregnancy and breastfeeding: A qualitative study in Ethiopia

Name of PI/Researcher responsible for project: Sophia Brewer

| Statement | Please initial or thumbprint* each box |
|--|--|
| I confirm that I have read the information sheet dated 10 May 2016 for the above-named study. I have had the opportunity to consider the information, ask questions and have these answered satisfactorily. | |
| OR I have had the information explained to by study personnel in a language that I understand. I have had the opportunity to consider the information, ask questions and have these answered satisfactorily. | |
| I understand that my participation is voluntary and that I am free to withdraw at any time without giving any reason, without my medical care or legal rights being affected. | |
| I agree for my non-identifying quote to be used in the publication or report released on the study. | |
| I agree to take part in the above-named study. | |

| | | |
|-----------------------------|--------------------------|------|
| | | |
| Printed name of participant | Signature of participant | Date |

| | | |
|------------------------------------|---------------------------------|------|
| | | |
| Printed name of impartial witness* | Signature of impartial witness* | Date |

I attest that I have explained the study information accurately in _____ to, and was understood to the best of my knowledge by, the participant and that he/she has freely given their consent to participate* in the presence of the above named impartial witness (where applicable).

| | | |
|--|---------------------------------------|------|
| | | |
| Printed name of person obtaining consent | Signature of person obtaining consent | Date |

[*Only required if the participant is unable to read or write.]

A copy of this informed consent document has been provided to the participant.

Study Number:
Participant Identification Number:

[Informed Consent for Participant with Impartial witness_10.05.16_v1]

Appendix 3 Informed Consent Form (Amharic)

የተሳታፊው የስምምነት ፎርም"

የፕሮጀክቱ ርእሰ.....የኦርቶዶክስ እምነት ተከታይ እናቶች በምን ወቅት ከአርግዝናና ጡት ማጥባት ጋር ተያይዞ ያላቸውን ተሞክሮ ይመለከታል። ጥራትን መሰረት አድርጎ በኢትዮጵያ የተሰራ ጥናት

የፕሮጀክቱ ሃላፊ ሰፊያ ብሬወር

| መግለጫ | እባክዎ እያንዳንዱ ሳጥን ውስጥ ስምዎን ወይም የጣት ፊርማዎን ያስቀምጡ | |
|---|--|--|
| ግንቦት 10 ቀን 2016 የተዘጋጀውን የመረጃ ወረቀትና ክላይ የተጠቀሰውን ጥናት ማንበቤን አረጋግጣለሁ። መረጃውን የመቀበል " ጥያቄ የመጠየቅ እና አጥጋቢ መልስ የመስጠት አድል አግኝቻለሁ። <u>ወይም</u> ጥናቱን ባዘጋጀው አካል መረጃውን በተመለከተ በምረዳው ቋንቋ ተገልጾልኛል። መረጃውን ለመቀበል " Özd ½ O½e Å; < F @Y o"ÖÍ ou/ ¼½ >F F >Y · Æ>ú: "Ð- f> / \$ | | |
| ተሳትፎዬ በፈቃደኝነት ላይ የተመሰረተ መሆኑን እና አንዳች ምክንያት ሳልሰጥ " - ÅH ½Ðj H እንክብካቤ ወይም ሕጋዊ መብቱ ሳይጎነካ wXl ñ Å< Gf H > < ÅH ..@ wOÆf> / \$ | | |
| በጥናቱ ወይም ሪፖርቱ ውስጥ እኔ የተናገርኩት ቢጠቀስ ፈቃደኛ ነኝ። | | |
| ክላይ በተጠቀሰው ጥናት ላይ ለመሳተፍ ተስማምቻለሁ። | | |

| | | |
|---------------|----------------|----|
| | | |
| የተሳታፊው ስም | የተሳታፊው ፊርማ | ቀን |
| የገለልተኛ ወገን ስም | የገለልተኛ ወገን ፊርማ | ቀን |

በጥናቱ ላይ የተቀመጠው መረጃ ትክክለኛ መሆኑን ለመገንዘብ መቻሉን ----- እና ተሳታፊው/ተሳታፊዎ ሃሳባቸውን ያለምንም ተፅእኖ በነፃነት መረጃ በመስጠት ገለልተኛ ወገን ባለበት መሳተፋቸውን እውነት መሆኑን አረጋግጣለሁ።

| | | |
|-------------------|--------------------|----|
| | | |
| መረጃውን የተቀበለ ሰው ስም | መረጃውን የተቀበለ ሰው ፊርማ | ቀን |

(ይህ የሚያስፈልገው ተሳታፊው ማንበብና መጻፍ ካልቻሉ ብቻ ነው)

የዚህ ጥናት ውጤት ይከመንት ለተሳታፊው ወይም ተሳታፊዎ መስጠት አለበት።

የጥናቱ ቁጥር

የተሳታፊው/ዎ የመታወቂያ ቁጥር

ለተሳታፊው/ዎ መረጃ ከገለልተኛ ወገን ጋር 10.05.16 -v1

Appendix 4 Participant sample grid

| Participant ID | Location type | Pregnancy/breastfeeding status | Parity/Gravida | Age, if known |
|----------------|---------------|--------------------------------|----------------|---------------------------------------|
| BD006U | urban | pregnant | primigravida | 26 |
| BD007U | urban | pregnant | primigravida | 28 |
| BD008U | urban | breastfeeding | multiparous | 25 |
| BD009U | urban | breastfeeding | multiparous | 18 |
| BD011U | urban | breastfeeding | multiparous | 27 |
| BD012U | urban | breastfeeding | multiparous | 30 |
| BD013U | urban | pregnant | primigravida | 20 |
| BD014U | urban | pregnant | primigravida | 25 |
| BD015U | urban | pregnant | multiparous | 28 |
| PC001R | rural | pregnant | multiparous | 28 |
| PC002R | rural | pregnant | primigravida | 23 |
| PC003R | rural | pregnant | multiparous | 20 (stated this was an approximation) |
| PC004R | rural | pregnant | multiparous | 37 |
| PC005R | rural | pregnant | primiparous | 21 |

| | | | | |
|--------|-------|----------|-------------|--------------|
| PC016R | rural | pregnant | multiparous | 37 |
| PC017R | rural | pregnant | multiparous | did not know |
| PC018R | rural | pregnant | multiparous | 35 |
| PC019R | rural | pregnant | multiparous | 29 |
| PC020R | rural | pregnant | multiparous | 35 |

Appendix 5 Semi-structured interview guide



v2 Date: June 28, 2016

Women's views and experiences of Orthodox religious fasting during pregnancy and breastfeeding: A qualitative study in Ethiopia

Participant ID: _____
Interview Date: _____
Interviewer: _____
Interview Site and Location: _____

After the participant information sheet and consent form have been reviewed, the participant has had an opportunity to ask questions and confirm understanding of this information, and signed the consent form.

Hello. My name is _____. As we've talked about, this interview is to help gather information about women fasting while they are pregnant and breastfeeding. I'm going to start the interview by asking you some questions about yourself.

Warm up Questions:

- Q1. How old are you?
- Q2. Are you married?
- What age were you when you married?
- Q3. How many children do you have?
- How old are they?
 - Are they boys or girls?

Fasting Questions

- Q4. Tell me about fasting in the Orthodox Church.
- When do people fast?
 - What do you eat on a day when you're fasting?
 - How does fasting affect your daily routine? Your family's?
- Prompt: Who prepares food during fasting periods; during meals; effect on other activities
- Q5. What is your view of fasting? What about your family members? Friends? Local community? The church?
- Q6. When you became pregnant/started breastfeeding, what effect did it have on your fasting? [If not fasting, go to Q7]
- Prompt: (If not primigravida) What about with your previous pregnancies? When you breastfed your other children?

Appendix 6 Local ethics approval letter



በአማራ ብሔራዊ ክልላዊ መንግስት
Amhara National Regional State
ጤና ጥበቃ ቢሮ
Health Bureau

ቁጥር
Ref.noHRTT/01/730/01/09
ቀን
Date/02/12/2009

To-LONDON SCHOOL OF HYGIENE7TROPICALMEDICINE


LONDON

Subject: Support for the project

The issue of maternal and child health is one of the major public health priorities in Ethiopia. The problem is still disgusting in Amhara regional state in which this project is planned to be commenced. The government is trying to alleviate the problem using several interventions. However, the use of maternal services is staggering at low level and neonatal and maternal morbidity and mortality is still very high in the country. Currently, innovative approaches are critically required to curve the problem of service utilization and health problems of neonates and mothers. So to strongly implement innovative approach to reduce the maternal mortality and to enhance child health on the area we have been searching for such project planned by the **London school of hygiene tropical medicine**.

We believe that the project planned as entitled by” **Women;s views and Experiences of Orthodox religious fasting during pregnancy and breast feeding:Aqualitative study in Ethiopia**” can make a difference in our region. So this is to assure you as Amhara regional health bureau we strongly support the project to be implemented in the region.

With regards


Tenagnework Anetefe
ጥናትና ቴክኖሎጂ ጥራት ማረጋገጫ
Health Research and
Technology Transfer
Core Process Owner



C.C:-

- APHI
Bahirdar
- Sophia Thomas
Addis Ababa

☒ 495

Tell. 0582263223

0582220191

Appendix 7 LSHTM ethics approval letter

London School of Hygiene & Tropical Medicine

Keppel Street, London WC1E 7HT
United Kingdom
Switchboard: +44 (0)20 7636 8636

www.lshtm.ac.uk



Observational / Interventions Research Ethics Committee

Sophia Brewer
LSHTM

11 December 2017

Dear Sophia

Study Title: Women's views and experiences of Orthodox religious fasting during pregnancy and breastfeeding: A qualitative study in Ethiopia

LSHTM Ethics Ref: 10374

Thank you for responding to the Observational Committee's request for further information on the above research and submitting revised documentation.

The further information has been considered on behalf of the Committee by the Chair.

Confirmation of ethical opinion

On behalf of the Committee, I am pleased to confirm a favourable ethical opinion for the above research on the basis described in the application form, protocol and supporting documentation as revised, subject to the conditions specified below.

Conditions of the favourable opinion

Approval is dependent on local ethical approval having been received, where relevant.

Approved documents

The final list of documents reviewed and approved by the Committee is as follows:

| Document Type | File Name | Date | Version |
|---------------------|---|------------|------------|
| Information Sheet | participant information sheet | 10/05/2016 | v1 |
| Information Sheet | Informed Consent_v1 | 10/05/2016 | v1 |
| Protocol / Proposal | Protocol_v1 | 17/06/2016 | v1 |
| Local Approval | Research ethics requirements in Amhara region | 20/06/2016 | v1 |
| Protocol / Proposal | Semi structured interview guide_v2 | 28/06/2016 | v2 |
| Investigator CV | CV_PI | 26/07/2016 | v1 |
| Information Sheet | Informed Consent_v1_Amharic | 28/07/2016 | v1 Amharic |
| Advertisements | Flyer_v1 English | 01/08/2016 | v1 English |
| Advertisements | Flyer_V1 Amharic | 23/08/2016 | v1 |
| Local Approval | Amhara PHI IRB Approval Letter | 31/08/2017 | v1 |
| Information Sheet | Informed Consent_v2 | 28/11/2017 | v2 |
| Protocol / Proposal | Protocol_v2 | 29/11/2017 | v2 |
| Covering Letter | DrPH LEO_Responses | 29/11/2017 | v1 |

After ethical review

The Chief Investigator (CI) or delegate is responsible for informing the ethics committee of any subsequent changes to the application. These must be submitted to the Committee for review using an Amendment form. Amendments must not be initiated before receipt of written favourable opinion from the committee.

The CI or delegate is also required to notify the ethics committee of any protocol violations and/or Suspected Unexpected Serious Adverse Reactions (SUSARs) which occur during the project by submitting a Serious Adverse Event form.

An annual report should be submitted to the committee using an Annual Report form on the anniversary of the approval of the study during the lifetime of the study.

At the end of the study, the CI or delegate must notify the committee using an End of Study form.

All aforementioned forms are available on the ethics online applications website and can only be submitted to the committee via the website at: <http://leo.lshtm.ac.uk>

Additional information is available at: www.lshtm.ac.uk/ethics

Yours sincerely,



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Chair

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