Method-Specific Barriers and Facilitators: A Novel Evaluation of Modern Contraception in Rural Malawi

Dissertation

Presented in Partial Fulfillment of the Requirements for the Degree Doctor of Philosophy in the Graduate School of The Ohio State University

By

Sarah Ann Huber, MSW, MPA

Graduate Program in Social Work

The Ohio State University

2018

Dissertation Committee

Sharvari Karandikar, Advisor

Natasha Bowen

Alison Norris

Abstract

Introduction: The dissertation examines perceptions of barriers and facilitators to using modern contraception, in general and by different methods, in rural Malawi through a mixed-methods investigation. Despite increased availability of modern contraception across Malawi, unmet need for modern methods has remained stagnate over several decades; 19% of married women had unmet need in 2015-16. Family planning policies and programs may be able to meet women's contraceptive needs by reducing barriers and promoting facilitators to modern methods.

Methods: In the first study, I analyze qualitative data (collected in 2013 in rural Lilongwe district, Malawi) using the constant comparative method to describe 117 reproductive aged women's and 48 reproductive aged men's perceptions of barriers and facilitators to modern contraception, in general and by different methods. I used the findings from the qualitative study, expert opinions from leaders in family planning research and Malawian colleagues, and a comprehensive literature review to develop a questionnaire measuring perceptions of barriers and benefits to five types of contraceptive methods. In the second study, I use univariate and bivariate statistics to analyze cross-sectional survey data, collected 2016-2017 within the same district in Malawi, with the aim of describing a variety of method-specific barriers and facilitators perceived by 769 sexually active, fecund, non-pregnant women of reproductive age. Using this same sample, I assess the

statistical differences in type of method used by women's sociodemographic characteristics. Lastly, I examine the relationships between women's perceptions of injectable-specific barriers and current injectable use (N = 415) and women's perceptions of implant-specific barriers and current implant use (N = 248) using logistic regression analyses.

Results: In the first analysis, I found that fear of side effects and social disapproval of modern contraceptive methods were prominent barriers to use. Facilitators to modern contraception included achievements in the healthy development of children, women, and households. In the second analysis, I found that women's endorsements of method-specific barriers and facilitators followed similar patterns; however, variations between methods-specific factors were present. Key barriers, averaged across the methods, included perceptions that methods interfere with sexual pleasure, disrupt regular menstruation, and are unacceptable for use by never married women. Method-specific use varied by age, income, marital status, pregnancy desires, number of living children, and frequency of sexual activity. In the third analysis, perceptions of side effects and interference with sexual pleasure for men were negatively associated with current injectable use. Perceptions of side effects and social disapproval for never married women were negatively associated with current implant use.

Conclusions: Although Malawian women had relatively positive views about modern methods, social, relational, and health-related factors were key barriers to using contraception. Informational- and access-related barriers were not prominent barriers to using contraception in all three studies. In fact, the widespread accessibility of modern

contraception may act as a facilitator. Programs and policies should focus on reducing social, relational, and health-related barriers to increase modern contraceptive prevalence in Malawi, and focus efforts on meeting the contraceptive needs of never married women.

Acknowledgments

The completion of this dissertation would not have been possible without assistance from a multitude of people and organizations. I wish to first acknowledge the financial support from the Society of Family Planning. The funding not only provided the financial resources to complete my study but also allowed me to devote time and attention to my research through fieldwork in Malawi.

To each of my committee members, I offer my deepest gratitude for the insights, guidance, mentorship, and encouragement offered over the years. I am honored that Dr. Sharvari Karandikar was my committee chair. Her support and unwavering confidence in my ability to carry out my research provided me with numerous opportunities to excel during my graduate career. I would also like to offer my sincerest appreciation to Dr. Alison Norris. Her strong mentorship, including numerous reviews of manuscripts and grant proposals, insightful input, and quick responses to emails, texts, and What's App messages, allowed me to conceptualization and implement a successful dissertation project. A thank you is owed to Dr. Natasha Bowen, whose statistical guidance and perceptive questions inspired me to think critically, problem solve, and articulate my research clearly. I am also deeply appreciative of the support and guidance I have received from many faculty and staff at the College of Social Work at The Ohio State

University. I would especially like to thank Dr. Michelle Kaiser. Her advice and ongoing support, since my first day as a PhD student, has strengthened my research skills.

I would like to thank the research team members of the Umoyo wa Thanzi research program in Malawi – Venson Banda, Joana Banda, Jameson Sambani, Tamala Banda, Thembison Tambala, and Yonah Damianoh. Their dedication to the UTHA project made my dissertation possible. I am humbled and honored to have spent time in Malawi with them, and I thank each team member for the numerous Chichewa lessons. I look forward to seeing you all again.

To my family and friends: I am forever thankful for your endless love and encouragement. If I had to guess, I would say my fiancé, Jake, is probably even more relieved than me that this dissertation is complete.

Vita

2011……B.S. Psychology, The Ohio State University

2014……M.S.W., The Ohio State University

2015……M.P.A., The Ohio State University

Publications

Gezinski, L., Karandikar, S., Huber, S., & Levitt, S. (In press). Commissioning parents' experiences with transnational surrogacy: A qualitative study. *Health & Social Work*.

Huber, S., Karandikar, S., & Gezinski, L. (2017). Exploring Indian surrogates' perceptions of the ban on international surrogacy. *Affilia: Journal of Women and Social Work*. Article first published online: https://doi.org/10.1177/0886109917729667

Huber, S., Esber, A., Garver, S., Banda, V., & Norris, A. (2017). The relationship between ambivalent and indifferent pregnancy desires and contraceptive use among Malawian women. *International Perspectives on Sexual and Reproductive Health*, *43*(1), 13-19.

Karandikar, S., Gezinski, L., & Huber, S. (2017). Exploring the physical and emotional stress of surrogate pregnancy among transnational Indian surrogates. *International Social Work*, 1-10.

Kaiser, M., Williams, M., Basta, N., Hand, M., & Huber, S. (2015). When vacant lots become urban gardens: Characterizing the perceived and actual food safety concerns of urban agriculture in Ohio. *Journal of Food Protection*, *78*(11), 2070-2080.

Fields of Study

Major Field: Social Work

Table of Contents

List of Tables

List of Figures

Chapter 1. Introduction

Background of the Study

In the late 1960s and early 1970s, large-scale population surveys conducted in the developing world discovered many women were not practicing contraception when they did not want a pregnancy, resulting in high rates of unintended pregnancies, unwanted births, and induced abortions (Bongaarts, 2014; Casterline & Sinding, 2000). National programs to provide modern contraception were established in many low- and middle-income countries between 1960 and the late 1990s (Bongaarts, 2014; Cleland et al., 2006; Ross & Smith, 2011). Justification for implementation of national family planning programs varied; however, most low- and middle-income countries sought to reduce rapid population growth by reducing high rates of unintended pregnancies, improve maternal and infant health, and empower girls and women (Casterline & Sinding, 2000; Cleland et al., 2006; Ross & Smith, 2011). National family planning programs have since been shown to significantly reduce fertility rates and desired family size, and increase rates of modern contraceptive use (Bongaarts, 2011, 2014; Ross & Stover, 2001). The success of national family planning programs largely relies on their ability to remove barriers to modern contraception and widely promote the benefits of using modern contraception (Bongaarts, 2011, 2014; Bongaarts, Cleland, Townsend, Bertrand, & Das Gupta, 2012). Yet, despite these policies (and subsequent programs, interventions, and

foreign aid), women continue to experience barriers to modern contraceptive use, resulting in stagnated, high levels of unintended pregnancy and unmet contraceptive need.

The importance of avoiding unintended pregnancy is well established in the research literature. Directly, unintended pregnancy results in unplanned birth, induced abortion, and miscarriage (Gipson, Koenig, & Hindin, 2008; Singh, Sedgh, & Hussain, 2010). Indirectly, unintended pregnancy increases women's risk for adverse health, psychological, social, and economic outcomes, such as maternal death and disability, unsafe abortion, stigma, depression, and poverty (Barber, Axinn, & Thornton, 1999; Canning & Schultz, 2012; Cleland, Conde-Agudelo, Peterson, Ross, & Tsui, 2012; Dibaba, Fantahun, & Hindin, 2013; Gipson et al., 2008; Herd, Higgins, Sicinski, & Merkurieva, 2016; Ronsmans & Graham, 2006; Sonfield, Hasstedt, Kavanaugh, & Anderson, 2013). Women in low- and middle-income countries experience some of the highest rates of unintended pregnancy in the world (~39%) (Sedgh, Singh, & Hussain, 2014), and the effects of unintended pregnancy, such as maternal death, are magnified for this population of women (Ronsmans & Graham, 2006). Reducing the risk of unintended pregnancy among women in low- and middle-income countries is essential for improving their long-term outcomes.

Given its aforementioned negative effects and vast prevalence, reducing unintended pregnancy is a critical public and behavioral health issue. Scholars and practitioners advocate modern contraceptives (i.e., male and female condoms, oral contraceptives, injections, implants, intrauterine devices, rings, and male and female

sterilization) as first-line pregnancy prevention methods globally. Modern contraceptive methods are typically distinguished from traditional or folkloric methods based on effectiveness rates; however, definitions of modern and traditional methods vary (Gebreselassie, Bietsch, Staveteig, & Pullum, 2017). I use the definition provided by Gebreselassie et al. (2017), which is based on the Demographic Health Survey's Guide to Statistics. Traditional methods consist of periodic abstinence (rhythm or calendar method), withdrawal prior to ejaculation, and country-specific traditional methods (e.g., prolonged breastfeeding). Folkloric methods have no proven effectiveness and vary by country (Gebreselassie et al., 2017). Folk methods often include herbs, amulets, spiritual methods, and abdominal massages. Some natural methods, including Lactational Amenorrhea Method, Standard Days Method, and basil body temperature method, may be considered modern if practiced in very specific ways. For the purposes of the dissertation project, I consider Lactational Amenorrhea Method, Standard Days Method, and basal body temperature method as traditional methods, because I do not have data on how women practice these methods within my sample.

Despite extensive research and intervention efforts, large proportions of women continue to experience unmet need for modern contraception. A woman is conventionally defined as having unmet need if she is sexually active, fecund, desires to delay or limit pregnancy, and not using effective contraceptive methods (Bradley, Croft, Fishel, & Westoff, 2012). In low- and middle-income countries, approximately 214 million women have unmet need, accounting for 84% of all unintended pregnancies globally

(Guttmacher Institute, 2017). Practitioners can reduce the burden of unintended pregnancy by meeting and sustaining women's contraceptive needs.

There are a range of intrapersonal, interpersonal, and environmental barriers that lead to contraceptive nonuse, as well as facilitators that encourage in contraceptive use (Campbell, Sahin-Hodoglugil, & Potts, 2006; Darraoch, Sedgh, & Ball, 2011; Williamson, Parkes, Wight, Petticrew, & Hart, 2009). Prior scholarship has extensively examined general barriers and facilitators to contraception; however, two prominent gaps remain that limit our ability to translate current knowledge into effective interventions. First, previous research groups contraceptive methods together as a single homogenous category, even though each method has unique characteristics. Rather than understanding the barriers and facilitators to each type of method, we only know why women choose to use or not use pregnancy prevention strategies, in general. If we understand the barriers and facilitators related to each method, then we will be able to address non-use and discontinuation more precisely. Second, research about barriers often comes from contraceptive nonusers and research about facilitators often comes from contraceptive users. Yet, both contraceptive users and nonusers may perceive similar barriers and facilitators. Thus, the differences in outcomes may be a reflection of how women overcame barriers or used facilitators to obtain and sustain contraception. If we understand how both groups perceive method-specific barriers and facilitators, we can know the relative importance of each factor in contraceptive decisions.

Description of the Current Study

Given the absence of knowledge on method-specific barriers and facilitators among current contraceptive users and nonusers, researchers and practitioners need additional research. The dissertation seeks to address significant gaps in the current literature through a mixed-methods investigation. First, I explored women's and men's perceptions of both general and method-specific barriers and facilitators to modern contraception through the use of in-depth interviews and focus group discussions. The qualitative study, although primarily focused on general barriers and benefits, served as a much needed reference from which I developed culturally appropriate, quantitative measures (DeVellis, 2012). Based on qualitative findings and a comprehensive literature review, I developed a series of items to examine systematically the method-specific barriers and facilitators to different types of contraceptive methods. I examined the perceptions of method-specific barriers and facilitators for five contraceptive methods, including male condoms, injections, pills, implants, and intrauterine devices. Finally, I assessed the relationship between method-specific barriers and facilitators and method-specific use for the two most common methods in Malawi – injections and implants.

The dissertation was conducted under the auspices of a prospective cohort study, Umoyo wa Thanzi (UTHA) or "Health for Life," investigating the role of decision making in reproductive health in rural Lilongwe, Malawi. In 2014, researchers from The Ohio State University established the community-based cohort of 1,034 reproductive aged women (15 to 39) in the catchment area of UTHA's rural partnering hospital, the McGuire Wellness Center. The guiding theories utilized in this study are the Easterlin

Synthesis Framework and the Health Belief Model. I used the theories to guide the qualitative data analysis and to inform the development and design of the method-specific barriers and facilitators items. The analyses address four key questions: (a) How do women and men perceive barriers and facilitators associated with the use of family planning, in general, and by different contraceptive methods?; (b) How are barriers and facilitators similar or different across methods?; (c) What are the sociodemographic factors associated with method-specific use?; and (d) To what degree do method-specific factors influence the use of different contraceptive methods?

Significance of the Study

Reducing unintended pregnancy via effective modern contraception use is a critical public health and social issue given the negative and far-reaching effects of unintended pregnancy on women, families, and communities. High and persistent rates of unmet need for contraception in developing countries have resulted in tremendous investments, by governments, donors, and academic institutions, into family planning policies and programs (Singh & Darroch, 2012). There is widespread, international consensus that family planning programs are a key component of comprehensive development strategies for low- to middle-income countries (Bongaarts, 2014). As Bongaarts (2014) notes, this consensus is reflected in the previous United Nations Millennium Development Goals (MDGs) and current United Nations Sustainable Development Goals (SDGs), specifically the SDG targets of ensuring universal access to sexual and reproductive health and reproductive rights and reducing the global maternal mortality ratio (MMR) to less than 70 per 100,000 live births by 2030. Practitioners need

to understand why women choose to use and not use certain contraceptive methods, with the aim of influencing perceptions of contraception and contraceptive behaviors positively among women in developing regions.

In order for family planning programs to meet women's contraceptive needs, policy, program, and intervention efforts should focus on barriers and facilitators. Barriers to contraception may include a wide range of factors, including (but not limited to) economic costs, inaccessibility or inconvenience, social and cultural norms, social disapproval, and fear of side effects. Facilitators to contraception (excluding the desire to prevent pregnancy) may include increases in standards of living, maintaining health and well-being of women and children, and economic advancement of women. An assessment of the relative influence of method-specific barriers and facilitators on contraceptive use will provide us with a comprehensive understanding of the challenges women and men face in contraception use even when they express need, and how facilitators can be used to overcome barriers. The results of this study may be utilized and adapted for use in clinical settings and can provide useful insights for health care practitioners. The identification of specific factors that prevent women, who otherwise have knowledge about and access to contraception and desire to delay or limit pregnancy, from using specific contraceptive methods may promote the targeting of appropriate services and future reduction of unmet need for contraception. Consequently, having a greater understanding of women's and men's perceptions of modern contraception, including social myths, can prepare practitioners to assist women in decision-making.

To date, family planning has been a largely neglected topic within the field of social work, while public health, medicine, sociology, and economics have made significant contributions. Family planning research, policies, and interventions would greatly benefit from social work's emphasis on the person-in-environment approach, knowledge of systemic and economic oppression of persons in the developing world, and commitment to social and economic justice principles. Social work involvement with family planning can work towards achieving a full range of human rights for all people, which has been identified as a part of the global agenda for social work and social development by the International Federation of Social Workers (IFSW), International Association of Schools of Social Work (IASSW) and the International Council on Social Welfare (ICSW) (IFSW, IASSW, & ICSW, 2012). This dissertation project represents the expansion of social work research and practice into the realm of global reproductive health with the belief that the social work lens can produce innovative evidence about this high-priority health issue.

In sum, the current study is one of the first assessments of method-specific barriers and facilitators. Based in Sub-Saharan Africa, where unmet need for contraception is a significant burden, the findings will illuminate how barriers and facilitators influence women's contraceptive decisions. The dissertation will contribute to a more complex understanding about perceptions of different methods and reasons for nonuse. As women in low-income countries desire to delay and limit pregnancy, the study will shed light on how to support women in initiating and sustaining use of contraception.

Chapter 2. Literature Review

Background on Unintended Pregnancy

Unintended pregnancy is a both a human rights and public health issue. In 1994, at the landmark International Conference on Population and Development (ICPD) held in Cairo, the Program of Action stated that "[a]ll couples and individuals have the basic right to decide freely and responsibly the number and spacing of their children and to have the information, education and means to do so" (International Conference on Population and Development (ICPD), 1994). This affirmation that sexual and reproductive health is a fundamental human right has been echoed throughout the scientific literature for the past 25 years. It is no surprise that achieving universal sexual and reproductive health education and services is one of the top goals identified by global partnerships, such as the United Nations Sustainable Development Goals of 2030 and Family Planning 2020, and local governments across the world.

Prevalence. Unintended pregnancy is defined as a pregnancy that is either mistimed (a pregnancy that occurred earlier than expected) or unwanted (a pregnancy that occurred when no children were desired) (Santelli et al., 2003). In 2012, of the estimated 213.4 million pregnancies that occurred in the world, about 40% were unintended (Sedgh et al., 2014). The current rate of global unintended pregnancy has declined about 20% since 1995; however, this reduction has been greatest in the developed world (e.g., U.S.

and Europe), as compared to the developing world (and especially as compared to Sub-Saharan Africa) (Singh et al., 2010). The highest regional rate of unintended pregnancy occurred in Africa (80 unintended pregnancies per 1,000 women aged 15 to 44) in 2012 (Sedgh et al., 2014). Younger women, in particular, are highly susceptible to unintended pregnancy across Sub-Saharan Africa. Approximately 44% of all unintended pregnancies occur among women aged 25 years and younger in Sub-Saharan Africa (Hubacher, Mavranezouli, & McGinn, 2008). In sum, unintended pregnancy is remarkably common, affecting younger women in developing countries the most.

Consequences. Unintended pregnancy can pose serious health risks to women and their children, and can have broader negative consequences for communities and societies.

Globally, half of all unintended pregnancies result in induced abortion (Singh et al., 2010). Many women, especially those living in the developing world, seek out unsafe means to terminate a pregnancy, primarily due to illegalization of induced abortion or lack of access to a safe alternative. Of the total induced abortions in 2008, approximately 50% were considered unsafe, meaning abortions carried out by either persons lacking the necessary training or in an environment that does not conform to medical standards, or both (World Health Organization, 2011). Rates of unsafe abortion have remained relatively unchanged in the developing world throughout the past decade, while in the developed world, unsafe abortion is almost nonexistent (Singh et al., 2010; World Health Organization, 2011). In 2008, approximately 90 women died as a result of unsafe abortion in developed regions (including a negligible number in the US), while about

47,000 women died as a result of unsafe abortion in developing regions (World Health Organization, 2011). Further, millions of women suffer long-term health consequences and short-term illness from unsafe abortion in the developing world (World Health Organization, 2011).

Over 500,000 maternal deaths occur each year throughout the world; however, the vast majority occur in developing regions, and obstetric risk is highest in Sub-Saharan Africa (Ronsmans & Graham, 2006). A maternal death is defined as "the death of a woman while pregnant or within 42 days of termination of pregnancy, irrespective of the duration and site of the pregnancy, from any cause related to or aggravated by the pregnancy or its management, but not from accidental or incidental causes" (Ronsmans & Graham, 2006, p. 1190). Few studies exist that directly investigate whether unintended pregnancy increases risk of maternal death. However, as Gipson et al. (2008) note, every pregnancy carries risk of death and disability, but unintended pregnancies are more likely to occur among women of high parities and/or very young women for whom obstetric risk is greater. Therefore, it is likely that avoidance of unintended pregnancy can reduce the occurrence of maternal death. If all unintended pregnancies were avoided, it is estimated that maternal deaths would be reduced by 67% in developing regions (Singh, Darroch, & Ashford, 2014).

Unintended pregnancy may have important implications for psychological, social, and economic outcomes, globally. In developed countries, women who report their pregnancies as unintended have increased odds of postpartum depression (Cheng, Schwarz, Douglas, & Horon, 2009), adverse psychological well-being (Gipson et al.,

2008), and negative mid-life and later-in-life mental health outcomes (Barber et al., 1999; Herd et al., 2016). Although similar evidence is severely limited in developing country contexts, unwanted pregnancy may be associated with depressive symptoms in pregnancy in some countries in Sub-Saharan Africa (Dibaba et al., 2013).

Socially, unintended pregnancy may contribute to stigma and partnership dissolution. In Malawi, unintended pregnancy among unmarried people may be associated with dropping out of school, stigmatization from families and communities, and pressure to marry at early ages (Garver, 2014). Couples that experience unintended pregnancy are more likely to experience heightened conflict, decreased satisfaction, and dissolution of their relationships (Sonfield et al., 2013). Economically, improved control over pregnancy timing allows women to acquire education and technical skills that lead to participation in paid work and increases in lifetime earning potential (Canning & Schultz, 2012; Sonfield et al., 2013). In sum, adverting the social, psychological, and economic effects of unintended pregnancy can improve women's well-being.

Background on Modern Contraception Use

In the past two decades, a significant shift from desiring larger to smaller families has occurred in developing regions (Singh & Darroch, 2012; Westoff, 2010). In particular, in eastern and southern countries of Sub-Saharan Africa, the perceived ideal number of children has dramatically declined since 2000 (Westoff, 2010). Of the 1.6 billion reproductive aged women living in developing countries, about half wanted to avoid pregnancy in 2016 (Guttmacher Institute, 2017). One of the primary mechanisms by which women have achieved smaller families is use of modern contraceptives. About

three-fourths of all reproductive age women wanting to avoid pregnancy use modern contraceptives in the developing world (Guttmacher Institute, 2017). The contraceptive prevalence rate (CPR) has strikingly increased in the past three decades. Between 1990 and 2010, CPR rose globally from about 45% to 60% (Alkema, Kantorova, Menozzi, & Biddlecom, 2013; Singh & Darroch, 2012). The increase was largely driven by a rise in contraceptive use in developing countries, rather than in developed countries (Alkema et al., 2013).

Despite increases in CPR, unmet need for contraception remains high (Guttmacher Institute, 2017). Women most at risk of having unmet, contraceptive need are relatively young (aged 15 to 19), poor, have less education, and live in rural areas, as compared to older women, wealthier women, women with better education, and women who live in urban settings (Singh et al., 2014). Unmarried, sexually active women often experience higher rates of unmet need than married women (Alkema et al., 2013). Disparities in unmet need for contraception exist among sub-regions of the world. Sub-Saharan Africa has the highest proportion of women with unmet contraceptive need (21%) (Guttmacher Institute, 2017). Together with women in Southern Asia, women in Sub-Saharan Africa account for 58% of all women who have unmet need for modern contraception (Guttmacher Institute, 2017). Further, women with unmet need contribute substantially to high rates of unintended pregnancy. Approximately 84% of all unintended pregnancies in low- and middle-income countries are accounted for by women who had unmet need for modern contraception (Guttmacher Institute, 2017).

Benefits of modern contraception. Use of modern contraception is effective in reducing unintended pregnancies and promoting health and development. Over an average period of 12 years, increased contraceptive use in developing countries reduced the risk of death per 100,000 live births by 28%, primarily by averting unintended pregnancies (Cleland et al., 2012). If all unmet need for modern contraception were satisfied, unintended pregnancies, unplanned births, and induced abortions would decline by approximately three-quarters and over 75,000 fewer maternal deaths would occur each year (Guttmacher Institute, 2017). Family planning also results in positive economic outcomes. Women who use contraception are more likely to participate in paid employment, experience increases in earnings, and better able to provide more education for their children (Canning & Schultz, 2012). To reduce unintended pregnancies, modern contraceptives should be the first-line intervention method in developing regions, such as Sub-Saharan Africa.

Some contraceptive methods are more effective than others, which is why modern methods are often promoted over traditional or folkloric. Polis et al. (2016) used Demographic and Health Survey data from 43 countries to examine country specific failure rates for seven methods, including five modern and two traditional. Implants were the most effective method (average 12-month failure rate was 0.6 for every 100 episodes of use), followed by IUDs (1.4), injectables (1.7), male condoms (5.4), and oral contraceptives (5.5). Traditional methods, including withdraw and periodic abstinence, had the highest failure rates, 13.4 and 13.9 respectively.

Guiding Theoretical Frameworks

Health belief model. The Health Belief Model (HBM) is an interpersonal framework designed to explain and predict preventative health behaviors by focusing on the positive, negative, and neutral beliefs of individuals (Rosenstock, 1974). According to Kasl and Cobb (1966), preventative health behaviors are defined as any activity taken to prevent or detect a disease/condition by an individual who believes that s/he is otherwise presently void of the disease/condition. Developed largely by social psychologists in the 1950s and 1960s (Rosenstock, 1974), the HBM has been applied to various health behaviors in diverse contexts, including contraceptive behaviors (Hall, 2012). Although the HBM has undergone many adaptions since its inception, it is rooted in three basic principles: for an individual to take an action to avoid a health condition, s/he must believe that (a) s/he is personally susceptible to the condition; (b) occurrence of the condition would impact some aspect of her/his life with moderate severity; and (c) taking the action would be beneficial by reducing susceptibility to the condition, but s/he must overcome perceived barriers to the action (Rosenstock, 1974).

The HBM is comprised of five key constructs: perceived susceptibility, perceived severity, perceived benefits, perceived barriers, and cues to action (Maiman, Becker, Kirscht, Haefner, & Drachman, 1977; Rosenstock, 1974). Perceived susceptibility is an individual's belief that s/he is at risk for obtaining a health condition. Perceived severity refers to the seriousness of the consequences, including health and broader implications if the condition occurred. Perceived benefits or facilitators are an individual's beliefs that the preventative action bares some advantages. Perceived barriers are factors that prevent

the action from occurring. Cues to action refers to factors (either internal or external) that motivate an individual to take on the preventative action. Lastly, the HBM acknowledges the role of demographic, socio-cultural, and structural variables in influencing an individual's perceptions of a condition and preventative actions.

Applications to family planning. Use of modern contraception to avoid pregnancy, as viewed by the HBM, is a function of a woman's belief that she is personally susceptible to pregnancy, and occurrence of a pregnancy outside of her desired timeframe would negatively impact her life (Hall, 2012; Katatsky, 1977). Therefore, using contraception would reduce her vulnerability to pregnancy. There would also be some other positive value in using contraception, such as health preservation. *However, she must overcome barriers to using modern contraception, such as social dissaproval.*

The first proposed HBM framework for contraceptive use was developed by Katatsky (1977) who argued that family planning is unique among preventative health behaviors in that multiple methods are available, multiple intrapersonal relationships influence the outcome (e.g., husbands, parents, in-laws, peers), and no "actual" physical, positive reinforcement is present (i.e., the payoff is the absence of pregnancy). Other scholars, such as Fisher (1977), have similarly argued that modern contraception is unique in that multiple "preventative health behaviors" (i.e., modern contraceptive methods) can be used to avoid pregnancy (and used simultaneously), unlike other health conditions. Therefore, the constructs, perceived barriers and perceived facilitators, most likely vary by method, and, consequently, researchers need to know the perceived

barriers and facilitators to each method to accurately predict a future contraceptive behavior (Fisher, 1977).

The applicability of the HBM to contraceptive behaviors has been the subject of debate and controversy. Traditionally, the HBM focuses on avoidance of a health condition (Rosenstock, 1974), specifically avoidance of a disease. The model assumes that the health condition is negatively perceived and/or potentially harmful and, thus, something to be avoided. Because of these assumptions, scholars have criticized the HBM as inadequate and inappropriate in explaining contraceptive behaviors. For example, according to the argument by Fisher (1977), pregnancy is not a disease and/or a condition that most individuals would prefer to avoid at all times (although, women spend a substantial amount of their lives avoiding pregnancy). Because the majority of people desire pregnancy at some point in their lives, the nature of pregnancy presents issues in measuring key constructs. Over the past decade, however, pregnancy prevention is viewed more broadly as a health behavior, and researchers have come to understand contraceptive behavior as a health promotion activity that can enhance well-being (Hall, 2012).

Although the application of the HBM to contraceptive behaviors is complex, several studies have used HBM constructs to predict contraceptive behaviors. Most relevant to this study are the constructs of perceived barriers and facilitators. Perceived barriers can be conceptualized as the negative consequences of using contraception (Hall, 2012), and may include factors such as perceived side effects of contraception, limited access, or partner approval (Campbell et al., 2006; Hall, 2012; Sedgh & Hussain, 2014).

Perceived facilitators relate to all the advantages of using contraception to avoid pregnancy in relation to the perceived barriers (Hall, 2012), and may include efficacy, health promoting benefits, and social approval (Darraoch et al., 2011; Hall, 2012; Ntshebe, 2011).

Easterlin synthesis framework. The Easterlin Synthesis Framework is one of the most popular organizing theories of the determinants of contraceptive use and fertility outcomes in the demography and population research literature. The Easterlin Synthesis Framework is an economic theory of human fertility regulation, but similar constructs overlap with the HBM. Developed by economist, Richard Easterlin, in 1975, the Synthesis Framework conceptualizes determinants of contraception as being a function of the motivation to use contraception and/or motivation to avoid pregnancy, and the costs of contraception (Easterlin, 1975). High motivation to use contraception is a result of the "potential output of children" exceeding the "demand for children." In other words, when a couple may produce more children than they want, they are motivated to use contraception and avoid having additional children. However, whether fertility control occurs depends upon how the costs of contraception (i.e., barriers to contraception) compare with the motivation to avoid pregnancy (Easterlin, 1975).

Easterlin (1975) describes two types of costs primarily associated with contraception use, psychic costs (displeasure with contraception) and market costs (time and money associated with learning about and using contraception). In the past several decades, studies have expanded the conceptualization of "costs of contraception" to include any perceived barrier that prevents contraceptive use from occurring (Campbell

et al., 2006; Casterline, Perez, & Biddlecom, 1997; Casterline, Sathar, & ul Haque, 2001; Sedgh, Ashford, & Hussain, 2016). Scholars have extensively examined perceived barriers and facilitators to contraception, and I review these factors in the following section.

Barriers and Facilitators to Modern Contraception

Ability to use contraception depends upon a woman's capability to overcome barriers to use, or the constraining factors that inhibit contraceptive use (Easterlin, 1975; Katatsky, 1977). Barriers can be organized into economic and noneconomic categories. Economic barriers include monetary costs of contraception, knowledge of source of supply (i.e., health clinics, hospitals, or outreach programs), distance to source of supply, and supply of contraceptives at the source (both the amount and mix of methods) (Bongaarts, 2014; Campbell et al., 2006; Casterline et al., 1997, 2001; Nalwadda, Mirembe, Byamugisha, & Faxelid, 2010; Sedgh & Hussain, 2014). Noneconomic barriers include perceived or actual side effects, fear of infertility, decreased sexual satisfaction, health concerns, lack of knowledge of effective methods, negative perceptions about ease of use, social disapproval, spousal resistance, and health care provider bias and practice (Bongaarts, 2014; Campbell et al., 2006; Casterline et al., 1997, 2001; J. A. Higgins & Smith, 2016; John, Babalola, & Chipeta, 2015; Nalwadda et al., 2010; Sedgh & Hussain, 2014). Facilitators to use, or the factors that motivate contraceptive use other than desire to avoid pregnancy, include desire for healthy birth spacing, decreased sexual inhibition, social approval, and ability to contribute to household well-being (Bawah, Akweongo, Simmons, & Phillips, 1999; C-Change, 2012; Darraoch et al., 2011; Ntshebe, 2011).

Gaps in research. Although past research has identified a range of barriers and facilitators to contraception, prominent gaps remain that limit researchers' abilities to translate current knowledge into effective intervention strategies. First, researchers often group contraceptive methods together as a single homogenous category. However, each contraceptive method possesses a unique set of characteristics (e.g., male- or female-controlled, time of use, length of use, covert use, actual and/or perceived side effects, and effectiveness). These differences in attributes may influence women's perceptions about certain methods. Indeed, evidence from qualitative research suggests that many barriers, such as perceived side effects, are unique to different methods and range in severity. For example, (Ntshebe, 2011) found that Malawian men may perceive male-sterilization to result in slight decreases in libido (a mild effect), while male condoms are perceived to result in negative birth outcomes, such as stillbirths (a severe effect). Fear of temporary or permanent infertility after discontinuation are common concerns in Sub-Saharan Africa, but the perceived severity and cause differ by contraceptive method. Nalwadda et al. (2010) found that, among women aged 15 to 24 in Uganda, oral contraceptives were perceived to cause permanent infertility, because the pills "burn the woman's eggs." Male condoms, on the other hand, were perceived to cause only minor difficulty in conceiving due to the additive lubricants (Nalwadda et al., 2010).

Perceptions of effectiveness may also vary according to method. Garcia and Snow (1997) found that Mexican reproductive aged women perceived oral contraceptives to be the most effective method of contraception, because they ensured regular menstruation. The injection and intrauterine device (IUD), on the other hand, were perceived to be less

effective because of irregular menstruation (i.e., women could not be confident that these methods worked, because they could not "see their periods"). In addition, perceptions of how contraception influences sexual satisfaction vary by method. John et al. (2015) found that Malawian women and men perceive that the IUD interferes with sexual pleasure for men, because it may cause pain to men during sex. The implant, however, was associated with increased sexual satisfaction, because it allows for sex to occur "freely" and without planning (John et al., 2015). Barriers and facilitators to contraception also vary according to the cultural context. For instance, John et al. (2015) found that IUDs are associated with decreased sexual pleasure among men in Malawi. However, Gomez and Clark (2014) found that among young women in the United States, IUDs are associated with no changes to sexual pleasure. To promote different methods successfully, interventions must acknowledge the ideas associated with specific methods in specific contexts.

Second, contraceptive users and nonusers may perceive similar facilitators and barriers to contraception, yet previous research has primarily focused on understanding perceived barriers among nonusers and perceived facilitators among users (e.g., Campbell et al., 2006; Casterline et al., 1997; Egarter et al., 2013; Sedgh & Hussain, 2014). The data do not provide information on nonusers' positive perceptions of methods they are not currently using or users' negative perceptions of the method they are currently using. Therefore, we do not know how facilitators can be used to encourage use among nonusers and how barriers can be minimized to sustain contraceptive use. Improving our knowledge of barriers and facilitators among users and nonusers will allow us to know the importance of each factor in contraceptive decisions.

Study Context

Malawi, a predominately agricultural country whose population of about 13 million is growing at a rate of 3.1% a year (Malawi Population and Housing Census, 2008), is located in the south-eastern region of Sub-Saharan Africa. Malawi is a tropical, landlocked country bordering Tanzania, Mozambique, and Zambia. The country is divided into three regions: Northern, Central, and Southern. There are 28 districts located throughout the regions. Six districts are in the Northern Region, 9 in the Central Region, and 13 in the Southern Region. Each district is subdivided into traditional authorities (TA) and presided over by chiefs, or *amfumu*. Every TA is composed of villages, and villages are presided over by village headmen (also known as chiefs). A village council, or *nduna,* assist the chief with managing the village.

The majority of Malawians live in rural areas (85%), while 15% live in urban areas (Malawi Population and Housing Census, 2008). Urban areas include four major cities: Lilongwe, Blantyre, Mzuzu, and Zomba. The gross domestic product (GDP) of Malawi in 2015 was 6.6 billion, and agriculture accounted for approximately one-third of the GDP (World Bank, 2016). Further, approximately 11 million people are smallholder subsistence farmers (Malawi Population and Housing Census, 2008). Due to poverty and economic underdevelopment, many Malawians have limited access to health services and other vital resources.

The population of Malawi has grown from 9,933,868 in 1998 to 13,077,160 in 2008, an increase of over 3 million in ten years (Malawi Population and Housing Census, 2008). Due to rapid population growth, Malawi has a relatively young population. The

median age of the total population is 17 years (Malawi Population and Housing Census, 2008). The population of Malawi is unevenly distributed throughout the country. Approximately 45% of the total population reside in the Southern Region, 42% in the Central Region, and 13% in the Northern Region (Malawi Population and Housing Census, 2008).

Malawi is a predominately Christian country (83%), while 13% of the total population identify as Muslim and 3% as no religious affiliation (Malawi Population and Housing Census, 2008). The largest ethnic group in Malawi are the Chewa (33%), followed by the Lomwe (18%), Yao (14%), Ngoni (11%), Tumbuka (9%), and Nyanja (6%) (Malawi Population and Housing Census, 2008). According to the 1998 Malawi Population and Housing Census (2008), the vast majority of the population speak Chechewa (70%) (no information was collected on language spoken in the most recent Malawi Population and Housing Census of 2008). Chechewa has been the national language of Malawi since 1968, and English is the official language. Since the late 60s, Chechewa has been greatly promoted in primary and secondary schools over other indigenous languages, as a strategy to encourage national pride and cohesion (Kamwendo, 2015). Consequently, Chechewa is widely-spoken throughout Malawi, and the vast majority of adults and children can speak and understand the language (Stewart et al., 2009). However, a large percentage of the population aged 5 years or older are illiterate (45%), meaning the inability to read and write in any language (Malawi Population and Housing Census, 2008). About 40% of men are illiterate, while 50% of women are illiterate (Malawi Population and Housing Census, 2008).

Malawi has relatively large households: the average household size is 4.6 (Malawi Population and Housing Census, 2008). A household consists of one or more persons, related or unrelated, who live together and make common provision for food. A household may include one or more dwelling units, but the household shares the dwelling units and meals. Approximately 12.6 million persons live in households, while about 460,000 live in institutions or are homeless (Malawi Population and Housing Census, 2008). In most households, men are the household head (73%); only 27% of households are headed by a female (National Statistics Office of Malawi, 2014). Early marriage is common in Malawi. Approximately 50% of Malawians were married before the age 18 (National Statistics Office of Malawi, 2014). About 28% of young people aged 15-19 are currently married or in a union (National Statistics Office of Malawi, 2014). Polygyny is practiced in some areas. About 14% of women and 8% of men aged 15-49 are in a polygamous union (National Statistics Office of Malawi, 2014).

Malawi has one of the highest maternal mortality ratios (MMR) in the world, at 439 maternal deaths per 100,000 live births in 2015-16 (National Statistical Office Malawi & ICF, 2017). Comparison figures for developing countries as a whole are 239 maternal deaths per 100,000 live births, and for developed countries are 12 maternal deaths per 100,000 live births (World Health Organization, 2015). High maternal death is associated with high rates of unintended pregnancy in developing countries. In Malawi, 52% of all pregnancies are unintended (Levandowski et al., 2013), 13% more than the average for the region.

Childbearing is integral to identity formation and definition of roles within communities in Sub-Saharan Africa. In Malawi, parenthood is an indicator of adulthood, and those with children are highly respected (Barden-O'Fallon, 2005; Garver, 2014). Although Malawian cultural norms favor large families, the desire for smaller families and effective family planning strategies have significantly increased over the past decade. In eastern Sub-Saharan Africa, the proportion of reproductive aged women wanting to avoid pregnancy by using modern contraception increased from 31% in 2003 to 46% in 2012 (Darroch & Singh, 2013). The modern CPR among currently married women age 15 to 49 in Malawi has substantially increased in the past 25 years, from 7% in 1992 to 58% in 2015-16 (National Statistical Office Malawi & ICF, 2017). Among married women, the most commonly used methods are injectables (30%) and implants (12%), followed by female sterilization (11%) (National Statistical Office Malawi & ICF, 2017). Relatively few married women use male condoms (2%), IUDs (1%), or traditional methods (1%). Among sexually active, unmarried women age 15 to 49, approximately 43% use a modern method. (National Statistical Office Malawi & ICF, 2017). Unmarried women tend to rely on injectables (15%) and male condoms (14%), and some use implants (6%), female sterilization (5%), IUDs (1%), and traditional methods (1%) (National Statistical Office Malawi & ICF, 2017).

Chapter 3. Research Methods

Overview

The dissertation seeks to understand the relationship between barriers and facilitators and contraceptive use in Malawi. I used an Exploratory Sequential Mixed-Methods (ESMM) (Creswell, 2014) design to develop culturally appropriate measures of method-specific barriers and facilitators and assess the outlined research questions. In ESSM, data collection occurs in two phases with an initial phase of purposive, qualitative data collection followed by a phase of quantitative data collection (Creswell, 2014). The ESMM study design was chosen for two primary reasons. First, the qualitative portion allowed for the development of better measures of method-specific barriers and facilitators before administration of the quantitative survey (Creswell, 2014; DeVellis, 2012). Second, integration of qualitative and quantitative methods maximized the strengths and minimized the weaknesses of each type of data (Creswell, 2014; Johnson & Onwuegbuzie, 2004). More specifically, the design strengthened my assessment and facilitated a broader and deeper understanding of barriers and facilitators to contraceptive use in rural Malawi.

As mentioned above, the study consisted of two phases (Figure 1). The first phase of the study was a qualitative exploration of general and method-specific barriers and facilitators. In-depth interviews and focus group discussions were conducted among

women and men in 2013, as the formative step in a baseline survey of a cohort study. I was not involved in the qualitative research phase, but used the secondary, qualitative data to identify possible unknown barriers and facilitators, explore the importance of barriers and facilitators, and identify the language used to describe barriers and facilitators (Johnson & Onwuegbuzie, 2004). I used the qualitative findings and a full review of the literature to develop the method-specific barrier and facilitator measures (Appendix A). In the quantitative phase of the study (within which I conducted fieldwork in Malawi), a structured survey was administered to a sample of reproductive aged women as a part of the third wave survey of the cohort study (conducted 2016-2017). The quantitative methods allowed me to identify systematically method-specific barriers and facilitators, determine similarities and differences between method-specific factors, and measure their associations with method-specific contraception use (Johnson & Onwuegbuzie, 2004).

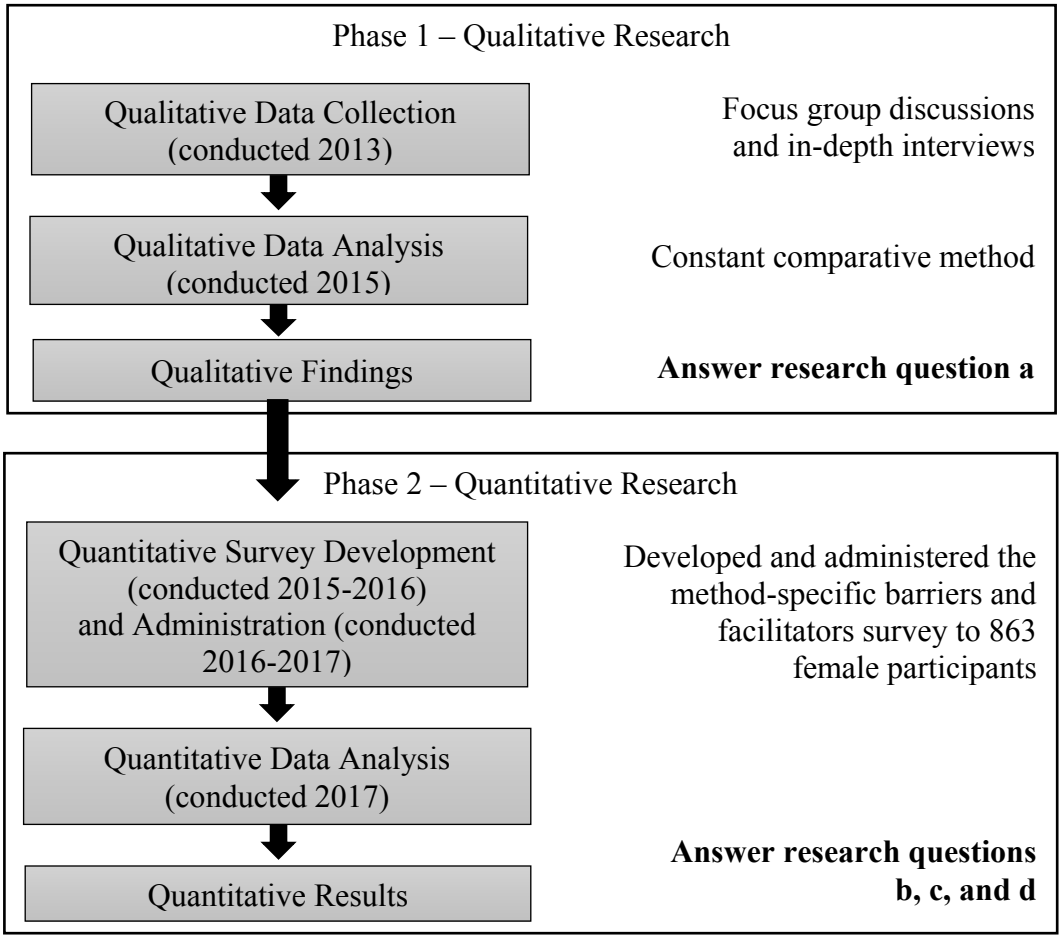


Figure 1 Timeline and description of study activities at each phase of research

Data: Parent Study

The dissertation project was nested within a prospective cohort study, Umoyo wa Thanzi (UTHA) research program, investigating the role of decision making in sexual and reproductive health. UTHA is a collaboration between The Ohio State University (Principle Investigator: Alison Norris, MD, PhD), Malawi College of Medicine, and the

nonprofit organization, Child Legacy International. The administrative research site is located at the McGuire Wellness Center, operated by Child Legacy International, in rural Lilongwe district, Malawi. The McGuire Wellness Center has achieved status as a community hospital. The McGuire Wellness Center serves 68 villages (approximately 20,000 residents). Primary services of the McGuire Wellness Center consist of maternal and child health, including family planning (condoms, injectables, implants, and oral contraceptives).

In 2014, UTHA established a community cohort of 1,034 women and 441 of their male partners for a baseline survey on topics related to sexual and reproductive health, other critical health issues (e.g., malaria, HIV/STIs, and obstetric fistula), and decision making. The UTHA baseline cohort took place in the catchment area of the McGuire Wellness Center. During the summer of 2013, McGuire Wellness Center staff conducted a census of the catchment area by enumerating all households. The census served as the sampling frame for the baseline survey. Stratified, cluster sampling was used to draw a sample of village clusters from the sampling frame. Villages were stratified by trading centers, plantations, and rural location. All village clusters had between 50 to 250 households. Some smaller villages were combined into a single cluster, and some larger trading centers were split into multiple clusters. UTHA randomly selected village clusters within each strata until 1,000 households were included.

All women of reproductive age (15 to 39 years) living in the randomly sampled village clusters and able to provide informed consent were eligible for participation in the study. For all women who participated, male partners were eligible to participate in the

study if they were at least 15 years of age. Malawian research assistants approached each household in the selected villages and invited women to complete the survey. Upon completion of the survey, research assistants asked participants for their permission to contact them for future research.

During the initial baseline survey development phase, UTHA conducted a series of qualitative interviews, including in-depth interviews and focus group discussions (Figure 2). I used the secondary, qualitative interviews in Chapter Four. Since the baseline survey time, UTHA implemented several other studies within the cohort. The Wave 3 survey was implemented among previously recruited UTHA cohort participants (conducted 2016-2017), and I used this quantitative data in Chapter Five and Chapter Six.

Study	Data Collection Period																			
	2013				2014				2015				2016				2017			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Qualitative interviews																				
Baseline survey (wave one)																				
Wave two																				
Wave three																				

Figure 2 Timeline of Umoyo wa Thanzi research program
Notes: Black indicates studies used in the dissertation

Phase One: Qualitative Research

UTHA conducted qualitative interviews, including in-depth interviews and focus group discussions, in 2013 with the intention of informing the baseline survey. Focus group discussions were employed with the aim to elicit social norms regarding contraceptive use and sexual health decision making. In-depth interviews were used to understand participant's personal experiences, stories, and narratives regarding family planning. Written informed consent was obtained prior to the start of in-depth interviews and focus group discussions. Each section of the consent including the purpose, requirements, benefits, risks, confidentiality, right to withdraw, and contact person was reviewed. The consent process was completed individually for each focus group discussion participant. All participants were given a copy of the signed consent for his/her records. At the conclusion of either the focus group discussion or in-depth interview, a participant was compensated 1000 MWK (approximately $2.50 USD) for his/her time. All interviews were audio recorded and transcribed from Chechewa, the local language, to English for the purposes of analysis. The research team obtained permission from the Institutional Review Boards (IRB) at The Ohio State University and the Malawi College of Medicine prior to the start of the study.

Sampling and data collection: Focus group discussions. Participants were identified for the study using purposeful sampling techniques (Padgett, 2008). UTHA invited village headmen to select community members who may be insightful into sexual and reproductive health care topics to join a focus group discussion. Once participants were identified for participation, research team members disaggregated participants based

on marital status and gender. In total, 13 focus group discussions were held with approximately 10 participants in each group. No personally identifying information was collected from focus group participants, expect for signed consent forms. All focus group discussion facilitators spoke Chechewa and topics of discussion included ideas and norms about contraception and sexual health decision making. Focus group discussions lasted approximately 90 minutes and were conducted in public locations near participants' homes (e.g., a community center or a school after regular school hours).

Sampling and data collection: In-depth interviews. In total, 30 in-depth interviews were conducted using purposeful sampling (Padgett, 2008). Trained, Malawian research assistants identified community leaders with insights on decision making about sexual health and contraceptive use for participation. In-depth interviews were conducted in Chechewa, and interviewers were matched by sex with their interviewees as a means of establishing rapport (Padgett, 2008). In-depth interviews were held in or near the participant's home and lasted approximately one hour.

Phase Two: Quantitative Research

Sample. The third wave of the UTHA cohort study used the same sample as the baseline survey. Following established UTHA protocol, the Wave 3 survey took place in the catchment area of the McGuire Wellness Center among female members of the cohort. Male partners of female participants were again invited to participate in the study. All women who participated in the UTHA baseline cohort study, were living with the McGuire Wellness Center catchment area, and were able to provide informed consent were eligible to participate in the study. Malawian research assistants approached each

participant in the village listed on her original UTHA baseline locator form. If the women had moved to a new village within the catchment area, the research assistants approached the participant in that village instead. Each participant received 1000 Malawian Kwacha (MWK) (approximately $1.50 USD) upon the completion of the questionnaire. The research team selected the compensation amount through discussion with the Malawian research assistants. The compensation was the standard compensation amount used in previous studies. Of the original 1,034 female participants, 863 participated in the Wave 3 survey. Thus, UTHA retained approximately 83.5% of the original, female cohort participants.

Survey development. The research team translated the questionnaire using a modified version of Brislin's (1970) translation method. The survey was translated from English to Chechewa with the goal of meaning semantic and content equivalence to ensure cultural appropriateness (Brislin, 1970). Semantic equivalence is the extent to which item meanings are similar in two cultures after translation has occurred (Brislin, 1970). Content equivalence is the degree to which a construct holds similar meaning and relevance in two cultures (Brislin, 1970). The research team used the seven-step procedure for translation in cross-cultural research to guide the process. The steps are as follows:

1. Prepare an English version of the survey that it is free of colloquialisms;
2. Identify competent translators who are familiar with the content;
3. Instruct bilingual persons to translate from the source to the target language and others to back-translate from the target to the source language;

4. Have raters examine the original and translated versions for errors that lead to differences in meaning. If errors are found, repeat step three and change the source and target language as needed;
5. When no errors are found in meaning, pilot the translated materials on target language speaking individuals. Revise the translated and/or original versions based on the findings of the piloting;
6. Demonstrate final translation adequacy by administering the original and translated versions to translators;
7. Analyze the outcome of the translations adequacy by assessing the piloting results.

English-speaking team members, including myself and a doctoral student in Sociology, developed the survey in English, and the Principle Investigator evaluated it for content validity. The Principle Investigator approved the survey items, format, and response options and suggested revisions to make some items clearer. Together, we conducted several iterations of revisions throughout the survey development and piloting period. I developed the method-specific barriers and facilitators tool based on a review of the literature, review and analysis of qualitative interviews conducted during the planning phases of the UTHA baseline survey in 2013, and consultation with two experts in the field of family planning at The Ohio State University. I also sought input from Malawian colleagues and research assistants with insight into family planning.

Translators consisted of UTHA team members who were all bilingual in Chechewa and English. In a collaborative group format, proceeding line-by-line, we

instructed bilingual team members to translate items in English to Chechewa. We read a survey item aloud in English, the Malawian research team would discuss, and myself and another English-speaking UTHA team member would clarify and answer questions. The research team recorded the translation, once we reached a consensus. Then, we back-translated items to ensure equivalence of each item. Bilingual team members confirmed back-translations.

Research assistants piloted the translated survey among one another to ensure the questionnaire was free from all errors. When research assistants found errors, the research team repeated the translation/back-translation process. The research team edited the English version as needed and repeated the piloting process among UTHA team members until the survey was virtually free from all language errors. Next, the research team tested the translated version of the survey in the field with 100 non-UTHA participants. The purpose of the pilot testing was to examine the appropriateness of the format for each question and response options, ensure the functionality of the electronic survey capture system, and verify the correct translation of each item. After each day of pilot testing, the data collection team would debrief and document errors for revision. This period served as a time for additional survey item training. If research assistants found errors in the Chechewa translation, the research team would repeat the translation/back-translation process. I assessed the pilot data prior to the start of the survey.

Data collection. The research team obtained permission from the Institutional Review Boards (IRB) at The Ohio State University and the Malawi College of Medicine prior to the start of the study. The research team asked all participants to sign informed

consent documents before they completed the survey. If a participant could not sign his or her name, the participant used a thumbprint signature. Participants under the age of 18 gave their assent to participate after a guardian provided consent.

The research team collected data from October 2016 until April 2017. I observed the piloting and data collection processes between August 2016 and October 2016. Research assistants administered the survey to UTHA participants in or near the respondent's home. Research assistants ensured participants' privacy throughout the interviews which lasted approximately 90 minutes. All data collection occurred face-to-face in which data collectors read each question aloud, participants indicated their response, and data collectors recorded the answer on an iPad application (Magpi, v3.2.1, DataDyne Group LLC, 2016). Research assistants uploaded data to a secured, internet-based storage system every evening.

Chapter 4. Perceived Barriers and Benefits Associated with Modern Contraceptive Method Use among Men and Women in rural Lilongwe, Malawi

Abstract

Context. Barriers and facilitators to modern contraception use may influence contraceptive decisions, but are poorly understood in light of recent significant demographic changes in Malawi. The barriers of contraception may be broad, extending to sociocultural realms, social networks, and personal fears and misconceptions. We aim to explore and identify barriers and facilitators to modern contraception in rural Malawi and illuminate the factors that influence women's contraceptive behaviors in this setting.

Methods. The study uses secondary, qualitative data, including in-depth interviews and focus group discussions, collected within the Umoyo wa Thanzi (UTHA) research program of reproductive health decision making, to understand perceptions of the barriers and facilitators to contraceptive use. The study was carried out in rural Lilongwe district, Malawi. Participants were purposively selected for their insights into contraceptive decision making within the catchment area of UTHA's rural partnering hospital. In total, 24 women and six men participated in in-depth interviews, and 93 women and 42 men participated in focus group discussions. I used the constant comparative method, an aspect of the narrative approach, to analyze the qualitative interviews.

Results. Complex social, cultural, and relational factors influenced women's attitudes and perceptions of barriers to modern contraception. Intrapersonal knowledge of contraception and access to modern methods were negligible, as compared to prominent interpersonal-related barriers and fear of method-related health issues. Barriers to modern contraception may be even more pronounced for young, unmarried individuals at the early stages of childbearing. Primary facilitators to modern contraception were respondent's beliefs that modern methods were beneficial to the health of mothers and children, the well-being of households, and the achievement of increases in standards of living.

Conclusions. Malawian women experience broad social and cultural barriers to uptake of modern contraception and sustained use. Sociocultural barriers, such as social approval or cultural norms, and perceptions of health issues may more strongly influence Malawian women's contraceptive behaviors than informational- and access-related factors. Understanding the sociocultural barriers to contraceptive use may assist with the development of evidence-based family planning programs and interventions that can better meet women's contraceptive needs.

Introduction

In 1994, Malawi adopted a National Population Policy in response to growing concerns about rapid population growth that was incompatible with Malawi's social and economic goals (Chimbwete, Watkins, & Zulu, 2005; Government of Malawi, 2012). One of the primary objectives of the policy was to improve family planning and health care programs. Since the policy was enacted (and subsequently updated in 2012), data

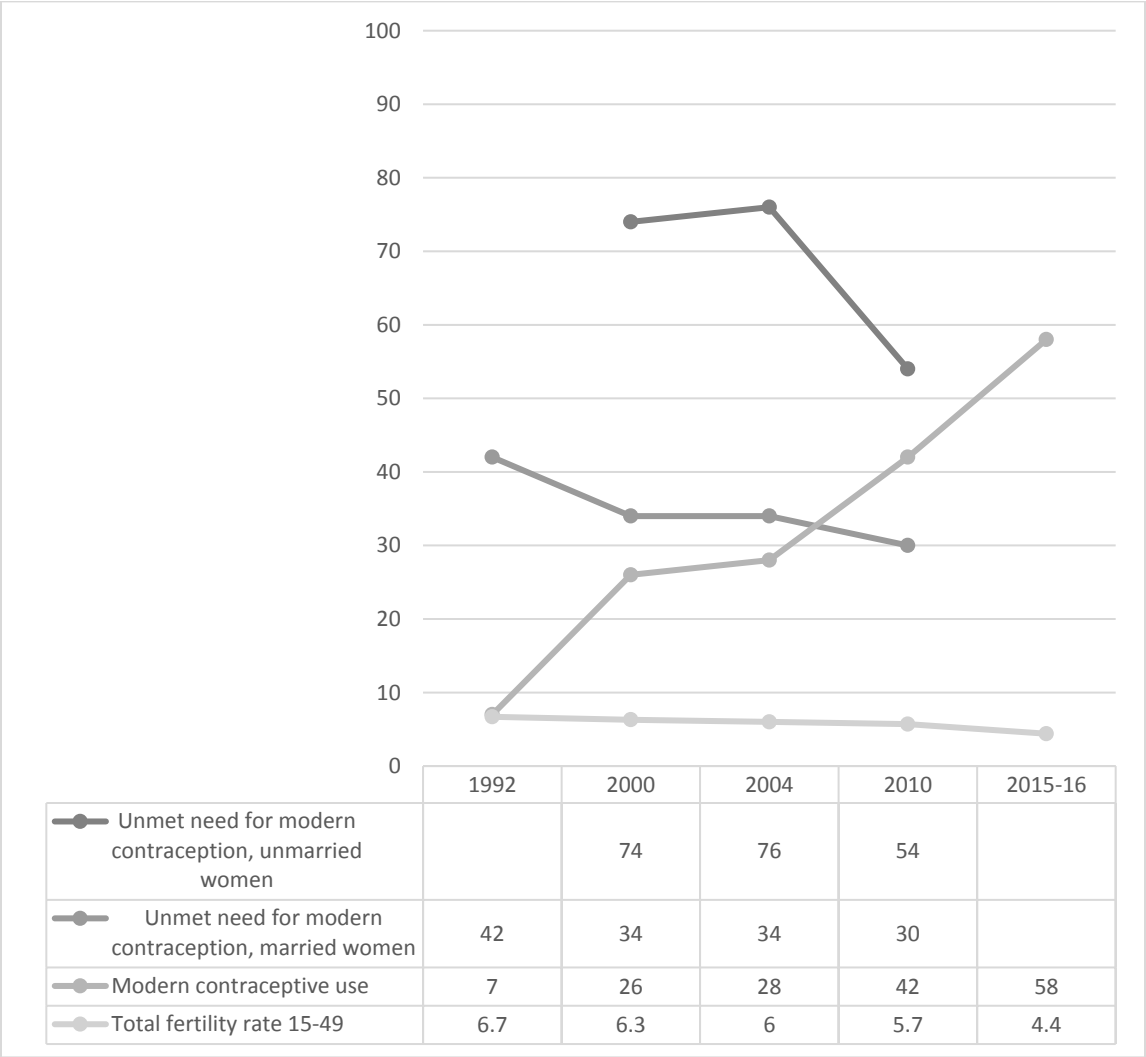
from large scale, nationally representative Malawi Demographic and Health Surveys (MDHS) demonstrate considerable decreases in the total fertility rate and increases in the modern contraceptive prevalence rate (National Statistical Office Malawi & ICF, 2017). MDHS surveys also reveal that a substantial proportion of reproductive aged women who desire to delay or limit pregnancy do not use an effective method of contraception – otherwise known as having unmet need for modern contraception (National Statistical Office Malawi & ICF, 2017). Indeed, national surveys carried out across many countries in Sub-Saharan Africa provide evidence that trends in unmet need for modern contraception have stagnated (Madsen, Kuang, & Ross, 2015). Unmet need for modern contraception remains at relatively high levels in Malawi (Figure 2). Among unmarried women, 54% had unmet need for modern contraception in 2010, a 20% reduction since 2000 (Westhoff, 2012). Among married women, 30% had unmet need for modern contraception in 2010, a reduction of 4% since 2000 (Westhoff, 2012). Stagnation may reflect persistent (or difficult to change) barriers, such as social acceptability and opposition.

Although unmet need remains moderately high, Malawi has experienced a dramatic rise in modern contraceptive use, in part as a function of political support. Modern contraceptive prevalence began to increase across Malawi in the 1990s, rising from 7.4% in 1992 to 26.1% in 2000, and again in the 2010s, from 42.2% in 2010 to almost 60% in 2015-16 (National Statistical Office Malawi & ICF, 2017). Consequently, trends in the total fertility rate reflect the dramatic increases in modern contraceptive prevalence: total fertility decreased from 6.7 births per woman in 1992 to 4.4 births per

woman in 2015-16 (National Statistical Office Malawi & ICF, 2017). Modern contraceptives were banned in Malawi until 1983, primarily because of family planning's association with foreign ideals (Chimbwete et al., 2005). Malawi's first family planning program, the Malawi Child Spacing Program of 1983, focused exclusively on child-spacing, and included no mention of child-limiting (Chimbwete et al., 2005). It was not until the early 1990s that modern contraceptives were justified for both child-spacing and reducing high levels of fertility. The National Population Policy was not signed into law until President Bakili Muluzi's term, in which he adamantly supported family planning as a legitimate social and economic development strategy (Chimbwete et al., 2005).

While studies have focused extensively on reasons for contraceptive nonuse or speculated as to the structural characteristics facilitating the rise in contraceptive prevalence (e.g., policy changes), the individual attitudes and beliefs of women associated with this dramatic increase in Malawi remain less well understood. In this study, we seek to understand the socially shared barriers and facilitators that currently shape women's contraceptive use (or nonuse) given the availability of contraception, as reflected in its increased prevalence, but also the barriers which remain reflected by moderately high levels of unmet need. Further, a secondary aim of this study was to identify any method-specific factors, if present, that contribute to contraceptive decision. To this end, we make use of in-depth interviews and focus group discussions collected outside of Lilongwe district, Malawi in 2013 that concentrate on the reasons for contraceptive use and nonuse. The guiding research question of this study is: how do

women and men perceive barriers and facilitators associated with the use of family planning, in general, and by different contraceptive methods in rural Malawi?



	1992	2000	2004	2010	2015-16
Unmet need for modern contraception, unmarried women		74	76	54	
Unmet need for modern contraception, married women	42	34	34	30	
Modern contraceptive use	7	26	28	42	58
Total fertility rate 15-49	6.7	6.3	6	5.7	4.4

Figure 3 Trends in unmet need for modern contraception, by unmarried and married women, modern contraceptive use, and total fertility rate for women aged 15 to 49. Data sources: Malawi Demographic Health Survey 2015-16 and Westoff (2012).

Conceptual Framework

To understand why some Malawian women may not use modern contraception, even when they desire to avoid pregnancy, we begin with the Health Belief Model (HBM). The HBM is an general framework designed to explain preventative health behaviors and emphasizes the perceptions of individuals (Rosenstock, 1974). Preventative health behaviors are defined as any activity taken to prevent an adverse health condition (Kasl & Cobb, 1966). The HBM theorizes that an individual cannot adopt a preventative health activity (i.e., contraceptive use) unless s/he is personally susceptible to the health condition (in this case, pregnancy), the health condition would adversely impact her/his life, and the preventative health behavior would be beneficial in reducing risk of the adverse condition. However, to adopt the preventative health behavior, the HBM posits that the individual must overcome the barriers to using the preventative health behavior (Rosenstock, 1974).

The HBM is comprised of five key constructs including perceived susceptibility, perceived severity, perceived facilitators, perceived barriers, and cues to action (Maiman et al., 1977; Rosenstock, 1974). Our study focuses on perceived barriers and facilitators to modern contraception, and thus, these are the most relevant to discuss. Perceived facilitators are an individual's beliefs that the preventative health behavior is advantageous, and perceived barriers are factors that prevent the preventative health behavior from occurring (Maiman et al., 1977). The HBM recognizes that demographic, sociocultural, and structural variables can influence an individual's perception of both the

adverse health condition (pregnancy) and the means of prevention (modern contraception).

In addition to the HBM, the Easterlin Synthesis Framework can also be used to understand the question of why some women and couples use contraception and others do not. The Easterlin Synthesis Framework, as compared to the HBM, is more specific to contraceptive behaviors. The Framework posits that contraceptive behaviors are a function of the motivation to avoid pregnancy and the costs of contraception (Easterlin, 1975). The Framework broadly defines costs of contraception to include any factor that may obstruct women from accessing contraception, using contraception effectively, and sustaining contraceptive use. Barriers to contraception can be economic, social, psychic, cultural, and health-related, and barriers may be real (i.e., experienced by the woman or couple) *or* perceived (i.e., socially shared beliefs about contraception). The Framework posits that the motivation to avoid pregnancy must exceed the costs of contraception for contraceptive behaviors to occur.

Barriers and Facilitators to Modern Contraception

Previous qualitative and quantitative studies provide evidence on the range and variety of barriers and facilitators to modern contraceptive methods. Systematic reviews summarize barriers to contraception (Campbell et al., 2006; Williamson et al., 2009) and reasons for nonuse (Khan, Mishra, Arnold, & Abderrahim, 2007; Sedgh et al., 2016; Sedgh & Hussain, 2014). We do not seek to replicate that work here; instead, the following section summarizes key barriers that are relevant to studies conducted in low-

income settings, including knowledge, social and cultural norms, husband's approval, health concerns, and access to services.

Knowledge of contraception. To use modern contraception, women must be aware that methods are available for use, know where contraceptive supplies can be obtained, and know how to use their chosen method effectively. Given that knowledge is a critical precursor to use, several studies of reasons for contraceptive nonuse in the 1980s and 1990s focused on various types of family planning knowledge and the relationship to contraceptive use. These cross-sectional analyses indicated that lack of knowledge of methods was associated with unmet need for contraception and current nonuse of a method (Bongaarts & Bruce, 1995; Campbell et al., 2006; Casterline et al., 2001; Mahmood & Ringheim, 1996). However, more recent survey and qualitative data suggests that knowledge has improved (Khan et al., 2007; Ochako et al., 2015; Sedgh et al., 2016). An analysis of 52 DHS surveys conducted between 2005 and 2014 found that only 0-4% of married women with unmet need were unable to identify a contraceptive method (Sedgh et al., 2016). Given that national population policies and programs have existed for some time, lack of awareness of modern contraception may no longer be a primary barrier to contraceptive use. Increased knowledge of contraception may be a sign of success for these programs and policies. It is important to note, however, that adolescents in developing regions may continue to struggle with overcoming informational barriers to use (Williamson et al., 2009).

Social and cultural norms. Social, cultural, and moral acceptability of modern contraceptive use has gained widespread attention as a prominent determinant of unmet

need in settings with low prevalence of modern contraception. Women's social networks – in-laws, family members, friends, and community members – may dissuade women from using contraception when they disapprove of use and when women openly discuss their negative opinions with one another about contraception (Casterline et al., 1997, 2001; Hindin, McGough, & Adanu, 2014; Nalwadda et al., 2010; Ochako et al., 2015; Rutenberg & Watkins, 1997; Stash, 1999). On the other hand, informal social interactions can serve as a facilitator to modern contraceptive use. Through informal social interactions with peer groups, women may learn of the benefits to use of specific methods (Rutenberg & Watkins, 1997) and the range of methods available for use (Paz Soldan, 2004; Stash, 1999).

Social stigma may influence women to not use contraception even when they express need. Family planning use among married couples may be interpreted as a sign of a partner straying or engaging in extramarital affairs (Mosha, Ruben, & Kakoko, 2013). Use of modern contraception by young, unmarried women may be associated with promiscuity or engaging in prostitution in some contexts (Williamson et al., 2009).

Husband's approval. In developing regions, men play a critical role in women's contraceptive decisions. Spousal communication about family planning may increase contraceptive uptake and continuation (Bawah, 2002; Hartmann, Gilles, Shattuck, Kerner, & Guest, 2012; Link, 2011; Mosha et al., 2013; Shattuck et al., 2011). Partner approval is also associated with current contraceptive use in a variety of settings (Campbell et al., 2006; Casterline et al., 2001; Chipeta, Chimwaza, & Kalilani-Phiri, 2010; Diamond-Smith, Campbell, & Madan, 2012; Garcia & Snow, 1997; Moronkola,

Ojediran, & Amosu, 2006; Nalwadda et al., 2010). Male partners' opposition to modern contraceptive use is a primary reason for unmet need for contraception and nonuse (Sedgh et al., 2016; Sedgh & Hussain, 2014). On average, among married women aged 15 to 49, 27% in Asia and 24% in Africa cite opposition to contraceptive methods as a reason for nonuse of contraception (Sedgh & Hussain, 2014). Within countries in Sub-Saharan Africa, opposition to contraception as a reason for nonuse increased or remained stable over the average period of approximately 15 years (Sedgh et al., 2016).

When male partners oppose use of contraception, women may use contraception covertly. Several qualitative and quantitative studies suggest that covert use is a preferred characteristic and benefit of different contraceptive methods (Baiden, Mensah, Akoto, Delvaux, & Appiah, 2016; Biddlecom & Fapohunda, 1998; Garcia & Snow, 1997; Hindin et al., 2014; Maharaj & Cleland, 2005; Mosha et al., 2013; Nalwadda et al., 2010). However, the importance of covert use may vary by region. For example, in 2010, only 7% of married, Malawian women aged 15 to 49 who were currently using contraception reported that their husband or partner did not know about their use (National Statistical Office Malawi & ICF Macro, 2011). Malawi may be an exception to other regions in Sub-Saharan Africa in which covert use is more prevalent (Biddlecom & Fapohunda, 1998).

Health concerns. Health concerns and fear of side effects represent powerful barriers to using modern contraception (Bongaarts & Bruce, 1995; Campbell et al., 2006; Castle, 2003; C-Change, 2012; Diamond-Smith et al., 2012; Hall, Stephenson, & Juvekar, 2008; Hindin et al., 2014; John et al., 2015, 2015; Mosha et al., 2013; Nalwadda et al.,

2010; Ochako et al., 2015; Rutenberg & Watkins, 1997; Schwandt, Skinner, Hebert, & Saad, 2015; Sedgh et al., 2016; Stash, 1999). In an analysis of 34 developing countries between 2000 and 2005, health concerns, including fear of infertility, side effects, and reduced sexual desire, were one of the most common categories of reasons for not using contraception (Khan et al., 2007). Among women with unmet need for contraception in developing regions, about one in four are not using because they are concerned about side effects and health risks of methods (Sedgh & Hussain, 2014). Health concerns not only influence decisions to use or not contraception, but also influence women's decisions to discontinue contraceptive use. Large-scale comparative reports suggest that health concerns and method-related fears are the primary reasons for discontinuation among women in developing countries, often leading to unmet need (Ali, Cleland, & Shah, 2012; Bradley, Schwandt, & Khan, 2009; Khan et al., 2007).

Fears of side effects are widespread in developing world regions, and women's social and cultural environments influence their perceptions of side effects, including the severity and the consequences (Campbell et al., 2006; Castle, 2003; Hall et al., 2008; Williamson et al., 2009). It is important to note that using any method of contraception may potentially result in real side effects. Nevertheless, in settings where women may lack medically accurate information, myths and/or rumors are often taken as truths, heightening women's fears (Chipeta et al., 2010; Diamond-Smith et al., 2012; Hindin et al., 2014; Mosha et al., 2013; Ochako et al., 2015; Schwandt et al., 2015). In settings in which awareness of family planning is high, myths and misconceptions have been associated with low method uptake and low contraceptive prevalence (Campbell et al.,

2006; Gueye, Speizer, Corroon, & Okigbo, 2015; Sedgh & Hussain, 2014). Further, qualitative evidence from a range of settings suggests that perceptions of side effects may vary between methods (Diamond-Smith et al., 2012; Garcia & Snow, 1997; John et al., 2015; Ochako et al., 2015; Rutenberg & Watkins, 1997; Schwandt et al., 2015; Stash, 1999; Thummalachetty et al., 2017).

Access to services. Over the past 25 years, access to modern contraceptive methods has substantially improved in developing regions. Although most may assume access-related factors, including availability, health center distance, and financial costs, greatly influence women's decisions, recent multinational studies show that women infrequently cite access-related barriers as reasons for nonuse (Sedgh & Hussain, 2014). Service quality factors, closely related to access, may influence whether a woman will obtain a contraceptive method, successfully use the method, and sustain use until a pregnancy is desired. Negative interactions with health care staff, medically unnecessary and arbitrary restrictions, and judgmental providers dissuade women from seeking out contraceptives or resupplying their method (Campbell et al., 2006; Nalwadda et al., 2010; Stash, 1999; Williamson et al., 2009).

Methods

Study population. The qualitative study was nested within the Umoyo wa Thanzi (UTHA) research program of sexual and reproductive health decision making in rural Lilongwe district, Malawi. UTHA collaborated with a rural hospital to study sexual and reproductive health outcomes in the region. The hospital's catchment area consisted of 68 villages (approximately 20,000 residents). Study participants were women and men

residing within the catchment area in 2013. Rural Lilongwe district is located in Central Malawi near the border of Malawi-Mozambique.

Study design. The UTHA research team used qualitative methods, specifically in-depth interviews (IDIs) and focus group discussions (FGDs), to understand women's contraceptive decisions in rural Malawi. I used these IDIs and FGDs in this study to describe women's and men's perceptions of the barriers and facilitators to using modern contraception. The research team used purposive sampling techniques to ensure that a range of perspectives were obtained (Padgett, 2008). Village headmen selected FGD participants by inviting community members who were insightful about family planning and sexual health to participate. After participants were identified for FGDs, the research team disaggregated participants by marital status and sex. Research team members purposefully selected IDI participants among community leaders with insight on decision making about contraceptive use.

In total, the research team conducted 13 FGDs with approximately 10 participants in each and 30 IDIs. The research team obtained written informed consent prior to the start of interviews. Research assistants reviewed the forms with the participants, and participants' questions were addressed prior to signing consent forms. Participants completed the consent process individually. Research assistants used a standardized interview guide for both the IDIs and FGDs; however, participants were able to speak on any matter that they deemed important. Research assistants conducted IDIs in Chechewa (the local language) in private locations in or near respondents' homes and lasted approximately one hour. FGDs were also held in private locations, such as community

centers or unoccupied schools, conducted in Chechewa, and lasted approximately 90 minutes. At the conclusion of FGDs and IDIs, participants were compensated 1000 MWK (approximately $2.50 USD) for their time.

I applied three strategies to ensure the rigor of the qualitative findings. First, I used data triangulation, consisting of in-depth interviews, focus group discussions, and archived interviewer debriefs, and interdisciplinary triangulation to achieve a comprehensive picture of the phenomenon of interest – barriers to contraceptive use (Padgett, 2008). Second, I used peer debriefing (i.e., presenting ideas, codes, and drafts to peers in the field and receiving critical feedback) to counteract possible researcher bias and to maintain the credibility of my interpretations of the participants' narratives (Padgett, 2008). Lastly, I performed auditing by maintaining a detailed set of self-reflective memos documenting my progress and a document listing all codes and relevant quotations to assist with future reproducibility of the study and analysis (Padgett, 2008).

Data analysis. Bilingual (Chechewa and English) research assistants audio recorded and transcribed the IDIs and FGDs, and translated the FGDs and IDIs to English. I used NVivo 11 for data management, coding, and analysis. For the data analysis, I applied aspects of the narrative approach to understand participant's narratives. A narrative lens was fitting for this secondary study, because it allows for a deeper understanding of respondent's "stories" by examining social relationships and meanings of a phenomenon within narratives (Padgett, 2008). I analyzed the data using the constant comparative method, a narrative approach strategy (Corbin & Strauss, 2008; Padgett, 2008). I read each transcript multiple times and coded the transcripts using open-

coding and in vivo coding procedures to identify meaningful categories. I compared the categories across transcripts to create groupings based on conceptual similarity until saturation (i.e., the point at which no new categories developed) was achieved (Padgett, 2008). I created a codebook, listing all of the categories and definitions with examples from the data.

Participant characteristics. The majority of participants were young (14 to 25) or middle age (26 to 45) (Table 1). Most participants were married and very few had completed primary education. Typical of the area, participants were generally subsistence farmers. Some participants also worked as small business owners, and many of the younger participants were students. On average, about one-third of participants had no children, but approximately 40% had between one and five children and 25% had more than five children. The vast majority of participants began childbearing at age 20 or younger. Although, men began childbearing at later ages (primarily 21 to 25), as compared to women. Very few participants began childbearing after the age of 25, and these participants were exclusively male.

Table 1 Selected participant characteristics as a percentage of the sample, Umoyo wa Thanzi baseline interviews, 2013

Characteristic	IDI Participants		FGD Participants	
	Women (n = 24)	Men (n = 6)	Women (n = 93)	Men (n = 42)
Age				
14 - 25	54.2	50.0	51.6	35.7
26 - 45	45.8	33.3	39.8	54.8
> 45	0.0	16.7	8.6	9.5
Marital Status				
Single	37.5	16.7	35.5	25.6
Married	29.2	83.3	40.9	61.9
Divorced	25.0	0.0	18.3	7.1
Widowed	8.3	0.0	5.4	0.0
Education				
No education	4.2	16.7	18.3	11.9
Some primary	58.3	50.0	60.2	54.8
Primary	8.3	16.7	9.7	14.3
Some secondary	29.2	0.0	8.6	9.5
Secondary	0.0	16.7	3.2	9.5
Occupation				
Home keeper	0.0	0.0	18.3	0.0
Farmer	54.2	83.3	50.5	83.3
Small business owner	8.3	16.7	10.8	7.1
Other (e.g., student)	37.5	0.0	20.4	9.5
Number of Living Children				
0	37.5	33.3	20.4	28.6
1	12.5	16.7	21.5	23.8
2	16.7	0.0	10.8	9.5
3	4.2	0.0	10.8	19.0
4	16.7	33.3	10.8	7.1
5	12.5	0.0	10.8	2.4
> 5	0.0	16.7	14.0	9.5
Age at First Birth				
15 - 20	45.8	50.0	63.4	26.2
21 - 25	16.7	16.7	12.9	35.7
26 - 30	0.0	0.0	0.0	4.8
> 30	0.0	0.0	0.0	2.4
Not applicable or no response	37.5	33.3	23.7	30.1

Results

Six themes regarding barriers and benefits to contraceptive use emerged from the in-depth interviews and focus group discussions: healthy children, mothers, and households; a man's role in *kulera*; side effects: fears and myths; maintaining fertility; community and social support; and knowledge, awareness, and access. I use the Chechewa word, *kulera*, throughout the results to describe a specific set of family planning methods. *Kulera* refers to non-barrier, non-permanent methods of contraception (i.e., oral contraceptives, injectables, subdermal implants, and intrauterine devices), not male or female condoms and not sterilization. *Kulera* is often used to describe contraception as a general category, even though it excludes particular methods. Each theme contains both general and method-specific barriers and facilitators, if relevant.

Healthy children, mothers, and households. Nearly all participants mentioned that the primary benefit to using *kulera* was establishing a healthy household. A healthy household was defined as one in which the children and mother were well and properly taken care of, and one in which the woman was contributing economically to the household. Participants perceived a healthy household as admirable in their communities.

Participants indicated that the primary benefit of *kulera* for children was establishing proper growth and development through healthy birth spacing.

As for me, kulera means that you want the children to grow healthy so that they should not get malnourished and have stunted growth. (Female, married, focus group discussion)

Kulera: what comes up in my mind is that the children should at least grow to a certain age before I have another child. Only that when you are having children more frequently, you have problems in caring for the children… So you make sure that you should give the child a chance to grow. So you go and use kulera until the child grows and then you can decide to have another child. (Female, married, focus group discussion)

For the women, proper birth spacing prevented health risks, such as maternal death. Maternal death is common throughout Malawi – approximately 16% of all deaths to reproductive aged women are pregnancy-related (National Statistical Office Malawi & ICF, 2017). Participants indicated that frequent births created complex problems for themselves and their families. Women and men perceived that family planning was a key strategy used to avoid these complex problems and used to improve the health of women after delivery.

[Women using kulera] want to safeguard their health… They are preventing maternal death. This is the reason why they are using family planning strategies, as frequent loss of blood due to child delivery is dangerous. (Female, married, in-depth interview)

In some cases when a woman has pregnancy related problems, [the couple] can decide to start using kulera after the first child, so that they can give a chance to the woman to rest before having another pregnancy. The man will also have a chance to regain his strength. (Female, divorced, in-depth interview)

In addition to the health risks posed by frequently spaced births, participants' narratives suggest that *kulera* is beneficial in securing household well-being more broadly via a woman's ability to work. Women reported that when they are giving birth

frequently, they may not be able to participate in economic activities outside of the home or may not be able to engage in paid employment. *Kulera* can used to ensure economic opportunities for women and allow them to contribute to household development.

I wanted my family to be healthy, so that I should have time to work in the field because when you have children closely spaced, you do not have time to work in the garden as most of your time you are busy caring for the children. (Female, widowed, in-depth interview)

What made me to start using kulera is that I was having a child every year. So when I saw this, I knew that things will not be working at home. It was not good that the man should be working alone in the garden doing farm work as I was always busy caring for the children; and also with my health, it meant that I would not have a healthy body. I needed to give my body some rest, so that it should regain its strength and health. (Female, divorced, in-depth interview)

The final quote highlights the interconnectedness of health and economic well-being. The significance of a healthy woman is important in and of itself, but also essential for the ability to work and contribute to the household. For things "to be working at home," births need to be properly spaced so that mother and child are healthy and *thus* the household is secured economically.

Securing household well-being through proper birth spacing extends beyond the material and also defines the ways in which households are perceived. Some participants perceived that use of family planning may provide households with community respect. Households were not admirable because they were using contraception but because using

contraception allowed them to be perceived as strong and healthy. A married, male focus group discussion participant said, "*The people who are using kulera are like role models…because they see a healthy woman and a healthy man. The household is also admirable."* There was a sense that small families were desired, because it is a sign of modernity. A divorced, female in-depth interview participant said, *"It is a pleasing thing to the husband that you have started using kulera, which is a good choice, and because you have few children, your family is admirable by other people."*

A man's role in *kulera*. Men played a complicated role in women's contraceptive behaviors. To begin, we will discuss men as facilitators to contraceptive use. Some men reported that they were involved in their female partner's family planning usage and showed a sense of concern for their wife's or partner's health and their children. Some men reported that they began discussions about contraception with their female partners to establish a healthy household (i.e., men shared the sentiments expressed by women). These men indicated that they had received advice about *kulera* from their peers.

For me and my wife, both of us have never used any method to prevent pregnancy, but now we want to go to the hospital so that my wife can start kulera... When I sat down with my wife, we saw it that it is important that we should start kulera…It was found that before we started using it, I did some investigation on the benefits of kulera and didn't know that while I was doing this my wife was also doing the same. So when we started our discussions on kulera, everything went on smoothly, because we had known the benefits of kulera from some people who had used it before. It means that we have saved the life of the child and the mother. (Male, married, in-depth interview)

I tell [my wife] to use family planning injectables. I do not prohibit her from using family planning injectables. Aaaah I give her freedom so that our child can grow healthy. (Male, married, in-depth interview)

While previous studies have emphasized the oppositional role men play in the uptake of contraception, our analysis suggests this may be an overstated barrier in some settings. In fact, men can play an important role in facilitating contraceptive use when it is the *woman* who otherwise lacks the motivation to access contraceptive services. A handful of men reported that they supported women in contraceptive use through small, meaningful acts. For example, a married, male focus group discussion participant said, *"Encouraging the woman to go for family planning usage, this is our role. You can give her transport money for her to use when going to the hospital for family planning."* Other men discussed that they encouraged their wives to attend their family planning appointments when they may feel discouraged to go. Another married, male focus group discussion participant said, *"We just accept if [our wives] ask us that they want to use kulera… When she is not going for her regular visits or appointments at the clinic, it is our duty to remind and encourage them to go to the clinic for the services."*

More commonly, male partners were perceived to prevent contraceptive use. Several participants indicated that men disapprove of their female partners using modern contraception. There was a general sense that men did not approve of family planning because of their own desires to continue childbearing. For instance, some participants indicated that a man could take another wife, or leave his current wife, if he would like to continue childbearing and his wife does not. These issues affected whether a woman

might use contraception; some women might face a choice of maintaining their marriages or exercising their desires to limit childbearing.

Sometimes it happens that a man can refuse his wife to use kulera, because the man says that if it is to do with the support for children, I will be able to support them... So we tell the men that the support for children is not the only factor for starting kulera. The woman's health is also one of the things which has to be looked into, because when you die in childbearing, your husband will not give you another life. (Female, divorced, in-depth interview)

Some men are forbidding their wives to use kulera. They tell the woman that if she uses kulera, then he will marry another woman or else the marriage will end there. (Female, married, in-depth interview)

Because men can have polygamy, some women just accept to continue having children when they would have used kulera… The husband becomes polygamous, because the woman has been using kulera and the husband still wants to have children. (Female, divorced, in-depth interview)

In nearly all interviews in which the disadvantages of condoms were discussed, participants alluded to male partner contraceptive sabotage. Participants reported that men might tear or puncture holes in male condoms before sexual intercourse, leading to unplanned pregnancies and transmission of HIV/AIDs and sexually transmitted infections. A married, female in-depth interview participant said, "*In some cases, some boys are clever. They tear the tip of the condom and you become pregnant unexpectedly. You wonder how you became pregnant, yet you were using condoms."* The motivation for

men to conduct this sabotage was often unclear. However, a single, female in-depth interview participant said, *"The men tear the tip of the condom with the aim of convincing the woman that they have used the condom…They do have an aim to impregnate the woman. It may be that the woman is refusing to get married… The woman says she do not want to get married at that particular time, but the man wants to marry her. The man plans to have the woman pregnant. In that way, he can easily marry the woman."* Thus, the narrative indicates that men might use contraceptive sabotage to achieve their personal desires for marriage and children. Participants who discussed the disadvantages of condoms perceived condoms as ineffective in pregnancy prevention, most likely due to the ease at which condoms can be tampered with.

Men might also object to contraceptive use because of rumors and/or fears that contraceptive use can adversely impact men's health. Some participants described men who had experienced impotence or pain when their female partners used *kulera*. Some men feared these side effects and prevented their female partners from using family planning. Some women also feared or worried about the effects of *kulera* on their male partners.

When your wife is using kulera, especially when they use injection, and when you want to have sex with your wife, you do have back pain… When the woman is having the injection and the effect of the medicine is in the body of a woman, it means the effects of the medicine are also passed on to the man. (Male, married, in-depth interview)

There are many challenges in our families that we experience due to family planning usage. Our husbands say that family planning causes them to be weak when having sex.

My husband complains that he is weak when having sex due to family planning usage. (Female, married, focus group discussion)

[My husband] did not allow me to use family planning injectables… He said that he was afraid of the side effects. He told me not to use family planning strategies. (Female, divorced, in-depth interview)

When men do not approve of *kulera*, women might use contraception covertly. Participants generally discouraged covert contraceptive use, and some participants reported that when a woman uses contraception covertly, it creates conflict within the household. It was further noted that covert contraceptive use is not practiced easily: when women's male partners or people in their social networks intentionally do not know about their contraceptive use, women may have a hard time accessing services. For instance, a handful of participants mentioned that if their partners or friends did not know that they were using contraception, they might be questioned about why they needed to go to the health clinic.

It is slightly difficult in the sense that when a family wants to use kulera they have to agree as a family, but when a woman goes to start using kulera on her own without the knowledge of her husband, then it becomes a problem. It is like the woman has brought confusion in the family because the man was not thinking that way. When there is a consensus in the family, accessing kulera is easy for the women in the community. (Male, married, in-depth interview)

I was going to the hospital just as another patient [in my village] was going for some treatment. They did not know that I was going for kulera… I knew that they would

impinge on my right [if I continued to the hospital]. (Female, married, in-depth interview)

Side effects: fears and myths. Participants' reports highlight that fear of side effects for women are a primary barrier to modern contraceptive use. The three most common categories of side effects discussed included general side effects, disruption of regular menstruation, and interference with sexual pleasure.

General side effects. General side effects of contraception included a range of issues: body pains, dizziness, limb swelling, high blood pressure/heart rate, malnourishment, and weight changes. Although these general side effects were not described as common experiences, many participants viewed these side effects as troubling to women.

Some of the problems are that the women experience pain in the chest, back pain, and when you stand you have problems with your vision; and other women do faint because of kulera… when you go to the hospital they tell you that you are having all these problems because of the method of kulera you are using. This was not happening when you were not using kulera, but because you have seen that you have had many children you say, "Let me try what my friends are doing by using kulera," and you end up having all these problems. (Female, married, focus group discussion)

Some get sick because they have not been examined to see if they are very fertile or not; and you find that after using the methods, they end up having back pains and other abdominal pains because of the methods which they are using. (Female, single, focus group discussion)

In addition to general side effects and related to the desire to preserve a woman's health, women also reported major health concerns rumored to be consequences of contraceptive use. Some woman reported that use of *kulera* might lead to labor and delivery complications in future pregnancies. Participants also reported that *kulera* could contribute to cervical and other reproductive cancers.

There are other women who when they use kulera, they do have prolonged labor. When you go to the clinic, [the health workers] ask you if you ever used kulera and they say that you are having prolonged labor because of [family planning use]. (Female, married, focus group discussion)

What happened was this, we had been quarrelling in the family because I was using injections, so I stopped… I was not using the injection, because other people had threatened me that the injection is not good because it causes cancer of the uterus. (Female, divorced, in-depth interview)

As previously mentioned, most women did not experience side effects first hand. Instead, women heard about side effects through peers or other community members. Some participants reported that women may not use contraception when they fear side effects, especially young, unmarried women. As a single, female in-depth interview participant explained, "*[My friends] said that I will have problems whenever I get pregnant. They advised me not to use kulera, because the side effects will be severe on my part. They were saying that some women become sick because of kulera and others develop skin infections. When women go to the hospital, they are told, "You are having all these problems because you are using kulera." So it was better for me to find an*

alternative. In my case, I used a traditional method…I was afraid [of kulera], because of these things which I heard from the women." For this woman, perceptions of side effects were a sufficient deterrent from using highly effective methods of contraception, and thus she opted for a more acceptable pregnancy prevention strategy (in this case, a less effective traditional method).

Disruption of regular menstruation. In participants' interviews, the adverse effects of family planning on regular, monthly menstruation were the most common topic of conversation regarding factors that prevent contraceptive use. Ensuring monthly menstruation seemed to be of widespread importance to participants, including men. Participants reported that women may experience prolonged menstruation or amenorrhea when using family planning, both of which were undesirable. The implications of prolonged menstruation, in particular, extended beyond simple health concerns. Indeed, prolonged menstruation had negative social and relational implications for women. There was a general sense that when a woman was experiencing menstruation, she could not have sex with her male partner or it could cause health problems for the man. If a couple could not have sex, then some participants reported that the man might take another sexual partner.

The man would not experience the whole love from his wife [when she is experiencing prolonged menstruation], because he wanted the woman to be giving him love. In some cases, men will find other sexual partners to fulfil their desires. (Male, married, focus group dicussion)

This weakens your relationship (in reference to prolonged menstruation from kulera). Before the woman started using family planning, there was strong relationship; the couple had sex. After she started using family planning, she is experiencing prolonged menstruation periods… Then, the husband has a sexual partner outside marriage. This means that family planning has weakened the relationship. (Male, married, focus group discussion)

Interference with sexual pleasure. Discussions of the effects of modern contraception, including *kulera*, male condoms, and sterilization, on male and female sexual pleasure were present in nearly all participants narratives. There was a clear association in participants' interviews between use of *kulera* and reduced sexual drive for both women and men. We might expect that women would report reduced sexual libido from use of hormonal methods; however, it is surprising that men believed that they, too, could experience reduced sexual drive from hormonal methods. Further, as discussed in a previous theme, several participants indicated that women's use of hormonal methods could lead to male impotence.

When a woman is using kulera it is like this: when a man wants to have sex with his wife and they have sex, the effects of the injections [spread to the man]. What happens is that a man does not have chilakolako (desire for sex) after only having one sexual encounter. (Male, married, focus group discussion)

I don't know what secret the health care workers did when they were making kulera because the desire for sex is lost. When you desire to have sex with your wife, you find that the desire is not there and when you ask your wife what has happened, she is also

equally surprised to see that you are not able to perform as you were doing in the past… So the man also is surprised as to what has happened. I don't know what the doctors did to the kulera. (Male, married, focus group discussion)

When [having] sex, the man is not able to perform as all his body parts are weak due to family planning. Men say that kulera chemicals disturb their blood transfusion and hormone system. They are not strong enough to perform at bed. (Female, married, in-depth interview)

Many participants strongly believed that women who used modern contraception lose their sexual desirability or appeal. Participants reported that men often perceived women who use contraception as lacking "sweetness" or being sexually "cold." The colloquialism typically applied to any type of family planning usage, including male condoms and female sterilization.

More men discuss that a woman is not sweet when having sex after she has started using family planning. It can be injectable, tubal ligation, any family planning. (Female, married, in-depth interview)

The natural sweetness [of a woman] is not there. It is the medicines of kulera which disturbs the system in the body of the woman. (Male, married, focus group discussion)

The man experiences reduced power (male impotency), because the woman is cold. It is as if you are having sex with a dead person…Because what happens is that when a man is hot, he also needs a woman to be hot. We are able to notice this when a woman starts using kulera. (Male, married, focus group discussion)

Some participants' narratives, although few, implied that use of family planning improved their sex lives. For instance, in a focus group discussion consisting of married women, participants spoke of the benefits of safely spaced children which was achieved by using family planning. One participant in the group said, *"When you are having frequent births, your husband can not call you to have sex during the day as the young children will follow you, but when the children are properly spaced they go away and play while you are entertaining your husband at the bed."* Another woman in the group agreed, *"We have time to chat with our spouse and have sex whenever we want as children are properly spaced."*

Method-specific side effects. Participants discussed the side effects associated with particular methods of contraception, including injectables, pills, implants, condoms, IUDs, and tubal ligation. Women described the impact of method-related side effects as contributing to nonuse and discontinuation. These narratives were often associated with injectables, but that is likely a function of the widespread use as discussed below. We cannot know (and further research should investigate) whether contraceptive decisions are related to method-specific perceptions and unacceptability, or related to something more general about the social context.

Injectables and pills. Injectable and pill use was associated with a range of issues, similar to the side effects discussed above, and these methods were described in similar ways. Participants discussed the side effects of injectables more often than any other method of contraception, perhaps because injectables are the most commonly used method across Malawi and within the region in which the study was set (National

Statistical Office Malawi & ICF, 2017). Thus, most women may either be a past user, current user, or know of women who used injectables. Women reported fear of the side effects which could contribute to nonuse or discontinuation.

Some people say that injectables cause cervical cancer. We become afraid after hearing such rumors…You can even stop using family planning strategies. (Female, married, focus group discussion)

Some people say that when they use injectables, they are afraid of labor complications because family planning compromises safe delivery. So it is a wrong decision for them to go to the hospital for family planning injectables. (Female, single, in-depth interview)

Most women who discussed the side effects of injectables and pills also reported that they had either experienced or knew someone who experienced prolonged menstruation. Women's narrative implied that these women discontinued use abruptly without seeking advice and/or treatment from a health care provide and without switching to a new method. For example, a married, female in-depth interview participant said, "*I had family planning injectable once. I experienced problems. I started having prolonged periods soon after having an injectable, and I also experience abdominal pains… This is the reason why I do not go for injectables anymore. I stopped using family planning due to these problems."*

Implants. Subdermal implants were associated with very specific health issues, including dislodged implants and mental health concerns. Only a few women mentioned these health concerns in their narratives; however, it is important to note that implants are

not as widely prevalent as other methods. Fears and rumors of mental health issues reportedly drove some women to choose different contraceptive methods.

For me, I wanted to use the implant. I failed because I was terrified with what people were saying. They said that when you have inserted the implant, as it is inserted here (pointing at the arm), I heard that it moves up to the heart… Some say that it is moves up to here (pointing at the chest), so that when it pierces your heart, a person will die. (Female, married, focus group discussion)

The method, like the implant, people complain that it causes some mental disorders, and also that a person can have high pulse rate. So people, when they hear about these things, they are afraid of using the implant. They opt to use the injection. (Female, divorced, in-depth interview)

My sister insisted that she wanted to use the implant family planning method. The implant was inserted on her shoulder. She came back home… We realized that she had a mental health disturbance…We had to control her movement. She was collapsing. She went back to the service provider. They removed the implant. She got healed… She no longer wants to use implant. She has started using injectables. (Female, divorced, in-depth interview)

Condoms. Of all the methods, condoms had the least reported health side effects or concerns. Some participants chose to use condoms, as opposed to hormonal methods, to avoid side effects. For instance, a single, female focus group discussion participant said, "*Condoms are easy to use, because you do not have side effects with condoms. With other methods of kulera, you have side effects. You also do not have to choose which condom you need. As in other methods, where they say if you are fat, you cannot use*

injections because you will have side effects; your blood pressure increases when you use the injection."

The most prominent barrier to condom use were perceptions that condoms result in reduced sexual pleasure. Several participants said, "You cannot eat a sweet in its wrapper," meaning sex is less pleasurable if a condom is used. Participants reported that some men avoid using condoms because of these perceptions and fears.

Men are difficult; they say that you cannot eat sweet with its wrapper. So it's like girls are being forced to have plain sex (sex without a condom). (Female, divorced, in-depth interview)

Some of my friends tell me that what you are doing is not good because you cannot feel the girl when having sex with a condom… They say you are mbuli (ignorant); you don't eat sweet in its wrapper (laughs). (Female, married, in-depth interview)

IUDs and tubal ligation. Participant's rarely mentioned IUDs or tubal ligation in their discussions of side effects. Few women use IUDs in Malawi (1%) (National Statistical Office Malawi & ICF, 2017); however, a couple of women mentioned IUDs as a safe alternative to using injectables or pills. Further, a couple of participants discussed the sexual benefits of tubal ligation. These participants mentioned that tubal ligation increases women's sexual desires.

I hear that when you have kutseka (tubal ligation), you do have a great desire for sex. (Female, married, in-depth interview)

There is a difference with kutseka. They do not give the woman any medicine as in kulera. They just cut some tubes which links the uterus to the eggs. We could say that it is better

with kutseka than kulera. When a woman uses kulera, the medicine which they are given enters the blood and this affects the woman's feelings during sex. (Male, married, focus group discussion)

It happens that some women become malnourished. They fall ill when they are using loop (the IUD). The woman experiences frequent diarrhea or frequent coughing. (Female, married, focus group discussion)

Maintaining fertility. Nearly all participants consistently reported that use of modern contraception before childbearing could lead to infertility. Some adolescent participants reported that their parents and community members instructed them not to use *kulera* until they were married and had a child. These rumors produced fear in participants, as evident in their narratives below, leading to contraceptive nonuse.

It is an unusual thing for a girl in school to use the implant. This is fit for married women, but for a girl in school, it is not normal for her to use the implant… Even in the books we read at school, they write, "Use a condom and abstinence"… They did not write that a girl in school should use the implant. Nothing of that sort is written in the books. (Female, single, in-depth interview)

Why I did not use kulera that time (during grade school) is because they were saying that if you are still a girl (meaning you have not yet had children), and if you use kulera, you become barren… I hear it from women when they discuss about these things, so you think what they are saying is true. Sometimes it is the parents who say, "You girls do not start using kulera when you are at school. You will never see a child in your life." So when we hear about these things, we become afraid. Others say that we will have problems during

delivery. I think coming from old women it could be true; maybe they experienced it. (Female, divorced, in-depth interview)

A few participants mentioned that it was only use of particular methods that could result in permanent infertility, primarily implants and IUDs. Injectables were also thought to contribution to temporary and permanent infertility, although participants' discussed this much less than the other methods. No participants mentioned that condoms or pills would result in fertility issues.

With the implant, you do not conceive for many years. You can stay with the implant in a number of years and remove it when it expires. When you get married, it takes a long time for you to conceive. Your eggs have been burnt due to the implant… When you are infertile after using the implant, it will be hard for you to tell if you are infertile due to the implant or if you were born infertile. You get married, you are not conceiving. People will say that you burnt your eggs with implant usage. (Female, single, in-depth interview)

It can happen that the IUD can cause a woman to become infertile. It can happen that you will no longer conceive. (Male, married, focus group discussion)

Childbearing is of significant importance for most women and men in this context. Family stability is largely achieved through childbearing within marriage, infertile couples are highly stigmatized in rural communities, and parenthood is often the primary marker of the transition to adulthood. Nearly all respondents' narratives (women's and men's) suggested that married couples are largely driven by sociocultural norms and social pressures to conceive a child soon after marriage. Therefore,

childbearing norms may be an important barrier to use of contraception at early stages of childbearing

I disagree that girls should be using family planning, because, from what I understand it, you do family planning when you already have a child. You don't do family planning while you don't have a child. How can you practice family planning as if you have a child? So there, I don't feel it's proper for a girl to go for family planning when she doesn't have a baby. Unless she has a baby, then she cannot go for family planning. (Female, single, focus group discussion)

Because they have just been married, there is no reason for them to use family planning because they do not have a child. Why would they [use] kulera? When a person gets married the most important thing for them is to have a child. (Female, single, in-depth interview)

People who have just got married cannot start using family planning… They do not know their fertility, whether they are fertile or not. So they cannot use family planning strategy. The couple must start using family planning after the birth of a child. (Female, single, in-depth interview)

Community and social support. Women relied heavily on other women in their social networks for advice about *kulera* and other reproductive health issues. Participants reported that they recommend family planning to their friends which had encouraged their friends' uptake, and participants' were recommended family planning by their friends which led to their own uptake.

I told my friend that as a family [my husband and I] have agreed that we should start using kulera. My friends were impressed, and they too wanted to have it in their families. They asked me what and how I have managed, and they too went and discussed with their husbands. Eventually all my friends are now using kulera, but they have their own methods which they chose. (Female, divorced, in-depth interview)

Some women supported one another in modern contraceptive use. Women reported that they shared information with one another about *kulera*, discussing the barriers and benefits of use. For instance, a married, woman who participated in an in-depth interview said, "*[My friend] said that it is important to use family planning. We need to have births like literate people. People know the benefits of using family planning… It is important to discuss about these topics, because we learn some new information from others. You learn from each other among the group."*

A handful of men also reported that they discussed issues of family planning with their peers and other community members. Some men provided each other with advice of method choices and other issues about the household. As a married, male in-depth interview participant described*, "I discussed with a friend about kulera. He wanted to know what method he should use in his family so that they should not have another child soon…We discussed about how to care for our families and how to handle family conflicts in case a woman is not behaving as it is normally to be for a married woman."*

Participants discussed that married women who do not use contraception might face stigmatization from their peers. Some participants said that married women who have frequent births and not using contraception might be labelled as "promiscuous" – in

the sense that they are perceived to enjoy sex and afraid contraceptive use will impact their desires.

"Why is she not using family planning methods?" I got worried when women were saying this to me. "Doesn't she know that there are family planning methods?" Then it pained me, and I made a decision to start using injectables. Things changed; my fellow women started congratulating me about my good child spacing…They were not gossiping. They were telling me face-to-face. They said, "You like sex. Your fellow women are using injectables. Why are you not using injectables?" This pained me a lot. (Female, divorced, in-depth interview)

Acceptability by marital status. Peers and community members acted as a barrier to contraception for unmarried women. As mentioned in a previous theme, several participants reported that they are opposed to contraceptive use among young women before they enter marriage and begin childbearing. Unmarried women who used contraception were described by some participants as "prostitutes," and sexually promiscuous.

People will laugh at me. Some will say that I am a prostitute because I am using the implant while I am not married…You know village life. When you are not married and you are using the implant, people say that you are a prostitute; you have got multiple partners. (Female, single, in-depth interview)

The problem is that when you begin family planning before you have a child, you can start bad behavior. A person can start prostitution, because she knows that she cannot conceive. Most of the times women who use kulera before having a child start

prostitution. They know that they are safe even if they have multiple sexual partners. (Male, married, in-depth interview)

Although some participants seemed to be quite certain that family planning was easy to access at local hospitals and health clinics, other participants mentioned that young, unmarried persons may experience distinct access-related barriers. More specifically, participants reported that health care providers may be reluctant to provide unmarried women or men with contraception.

If someone who is in school goes to the clinic and asks to have kulera, it is not easy. When she goes to the clinic and the health care workers look at her age they will ask her, "What do you want?" and when she says that I want to use kulera, they will ask her, "What for at your age?" So the girls would feel embarrassed, and it is not easy for a young girl to use kulera. (Male, married, focus group discussion)

When a school girl meets an abusive doctor, she cannot access condoms… They know that this is a school girl. They will say, "When I provide her with condoms, she will not be able to finish her education." (Female, married, focus group discussion)

[The health workers] ask us, "What do you want here?" We tell them that we have come to get condoms. Then they ask us, "Are you in school or out school?" and we answer accordingly. When we tell them that we are in school, they start asking us questions and also advise that it is not good for you to use condoms while you are in school. They say that the best thing is for you to concentrate on your education… For those who are out of school, they are given the condoms because they are not in school, then they continue advising you how to use the condoms. (Male, single, in-depth interview)

Knowledge, awareness, and access. In this specific context, information- and access-related barriers to modern contraceptive use did not appear to be strong. Most participants seemed to be aware of several methods of contraception, including condoms, injectables, pills, implants, IUDs, and female sterilization, and almost all participants reported that obtaining modern methods was easy. Further, many participants acknowledged that they perceived modern methods to be, in general, quite effective at preventing pregnancy.

They can go to the hospital to get injections for kulera; even for those who are in marriages, they can also use the implant…It is easy to access kulera in this area. (Female, widowed, in-depth interview)

People know the advantages of using modern family planning. They go to the clinic when they want to start using family planning…There is the implant, pills, injection and tubal ligation. Most people from this area use these methods of family planning. (Female, married, in-depth interview)

Discussion

In Malawi, the discrepancy between the availability and use of modern contraception may be the result of broad and complex social, cultural, and relational factors that shape women's evaluations of contraception and reproductive self-determination. We found that it is not solely a woman's intrapersonal knowledge of contraception or access to available methods that influences her ability or willingness to use, but also her position along the life course and interpersonal influences. The study highlights ways in which the relationship between women's social environments and

perceptions of barriers to contraception differ according to both the marital and childbearing status of women. Recognizing the prominent obstacles to contraceptive use among women who do not desire children permits the development of policies and programs to aid in increasing the use of modern contraception. Thus, a common goal of policies and programs is to facilitate changes in women's individual beliefs, attitudes, or perceptions of contraception. Our findings suggest that for family planning initiatives to be successful, they must also consider changing the beliefs, attitudes, and perceptions of a woman's social network and influencing broader cultural norms that are counter to contraceptive behaviors.

A primary finding of this analysis is that women's individual contraceptive behaviors are embedded within relational contexts with others. While a woman's own fertility desires may determine her level of contraceptive need, social factors and norms (including competing value systems) determine whether she can autonomously use contraception. Specifically, in our study, the cultural and social importance of fertility maintenance and male-driven decision making and approval controlled whether a woman could use contraception and determined the resulting implications of her use. For example, a male partner's support insured that a woman who desired to delay or limit pregnancy could use contraception, while simultaneously maintaining the stability of her marriage and home. As Stash (1999) suggests, if a woman's position within her marital home and community standing hinges on her reproductive success, then it is perfectly reasonable for her to avoid contraceptive use. Reproductive success, in our study, was frequently discussed in terms of number of living children. For women in the early stages

of their reproductive careers (e.g., unmarried, young, have not begun childbearing), it would thus be quite reasonable to avoid any method of contraception perceived to reduce future fertility. For women in later stages of their reproductive careers, prioritizing men's fertility desires to avoid serious conflict within the home would be most sensible. Thus, the narratives of participants in this study revealed that perceptions of barriers, and their value or influence in their decisions, are constructed from a persons' social environment.

Another primary finding of this study is that women may be more fearful of the social and relational consequences of certain side effects (i.e., prolonged menstruation and reduced sexual pleasure) than physiological symptoms alone. Fear of side effects is one of the most widely discussed barriers to contraception in the family planning literature and hypothesized to be the most influential in contraceptive decisions (Bongaarts & Bruce, 1995; Campbell et al., 2006; C-Change, 2012; Diamond-Smith et al., 2012; Hindin et al., 2014; John et al., 2015; Mosha et al., 2013; Nalwadda et al., 2010; Ochako et al., 2015; Rutenberg & Watkins, 1997; Schwandt et al., 2015; Sedgh et al., 2016). Yet, few studies acknowledge how side effects influence women's relationship with their male partners and other people in their social networks (Castle, 2003; Hall et al., 2008), and fail to unpack the complicated meanings and implications of women's fears. The findings presented here indicate that women may very well be concerned about side effects, but fear the effects that could compromise their social relationships and increase their social vulnerability. Further, respondents' reports of barriers, such as side effects, were almost always a product of hearsay rather than first-hand experiences, as

documented elsewhere (Chipeta et al., 2010; Diamond-Smith et al., 2012; Hindin et al., 2014; Mosha et al., 2013; Ochako et al., 2015; Schwandt et al., 2015).

Given that the majority of women use contraception in the region in which the study was conducted (National Statistical Office Malawi & ICF, 2017), it may be that women and men perceive a range of possible barriers but motivating factors are more influential. We note, however, this may not true for specific populations, such as adolescent and unmarried women. Respondents reported that primary motivating factors for using modern contraception were the desire to maintain good maternal and child health, women's participation in household development, and improved standards of living. These results are comparable to the findings of other studies conducted in Malawi in which healthy childbearing and safe spacing were main factors encouraging use of modern methods (C-Change, 2012; Chipeta et al., 2010). Participants' narratives may also reflect improvements in the social mobility of Malawian women and increased economic development across the region, which typically counter pronatalist ideals (Casterline & El-Zeini, 2014). Finally, our data suggest that family planning is generally associated with child-spacing, rather than postponement or limiting, which may be a reflection of the Malawi Child Spacing Program implemented in the 1980s in conjunction with traditional fertility norms.

Method-specific barriers and facilitators, while mentioned, did not emerge as a prominent theme in participants' narratives. When discussed, women most reported method-specific barriers in relation to perceptions of side effects, effects on future fertility, and effects on sexual pleasure. Previous qualitative studies have also focused on

the method-specific health-related barriers to use of methods (Diamond-Smith et al., 2012; Garcia & Snow, 1997; John et al., 2015; Ochako et al., 2015; Rutenberg & Watkins, 1997; Schwandt et al., 2015; Stash, 1999; Thummalachetty et al., 2017). There may be other types of method-specific barriers and facilitators (e.g., related to access, perceptions of effectiveness, opposition) but interviewers did not probe about these factors in our study.

Limitations. The participants of our study were recruited from the catchment area of a health clinic that provides a range of contraceptive methods and other sexual and reproductive health services. Thus, our sample may have a larger than typical proportion of current contraceptive users and past users that may have more favorable attitudes toward contraception. We did not, however, collect information on participant's current or past contraceptive use. Further, our participants may have more awareness of modern contraception, because of local community programs and outreach from the hospital. However, our study highlights the relevance of understanding the barriers and facilitators to modern contraceptive use of Malawian women and men.

Our study does not contain a representative sample of the population within the Central region of Malawi. However, we aimed to recruit women and men of differing ages and marital statuses who had important insights into family planning. Our findings should be used to shape future quantitative studies that look into the association between contraceptive use and barriers and facilitators.

Implications and conclusion. Malawians should not be perceived as lacking knowledge or awareness of contraceptive methods. In this work, I have highlighted the

expansive set of barriers and facilitators which women and men in Malawi are aware of as it relates to contraceptive use. Most dominant are the ways in which contraceptive use impacts social respectability and intimate partnerships. While fear of side effects remain, and for some this impacts use or discontinuation, more often these are socially shared beliefs rather than reflective of individual experiences or justifications for (non)use.

As previously noted, women's social networks, including male partners, friends, family, and community members, are key in the dissemination of information about contraception and influence women's perceptions and behaviors. Mass media campaigns have been proven to increase contraceptive prevalence and future intentions to use contraception through the diffusion of positive messages (Gupta, Katende, & Bessinger, 2003). Mass media campaigns in Malawi should convey messages about safe spacing, birth postponement, and child limiting through effective contraceptive use to change perceptions of social norms. Given how influential women's peers were on contraceptive use, peer-to-peer counseling may also be effective in increasing positive perceptions or attitudes about contraception (Wilson, Degaiffier, Ratcliffe, & Schreiber, 2016). Fertility expectations of young women are powerful in determining perceptions and use, and thus, interventions that challenge cultural and social norms unsupportive of contraceptive use may prevent unmet need for contraception. Programs should acknowledge the strong influence that individuals have over one another and target specific influencers, such as men, more directly.

Reducing significant barriers to contraceptive use can produce a dramatic effect on unintended pregnancy and total fertility rates. If all unmet need was met in Malawi,

unintended births and unsafe abortions would drop by 87%, and maternal death would decline by more than two-fifths (Guttmacher Institute, 2014). By exploring Malawian perspectives on the barriers and facilitators to modern contraception programs aiming to meet women's contraceptive needs can be better equipped to highlight recognized benefits and work to address barriers. Our study emphasizes that perceptions of barriers and benefits comprise a critical component of contraceptive choice. Additional research is required to understand how notions of barriers and facilitators correlate with use of different contraceptive methods. Programs and policies should recognize the ideas associated with use of modern methods, both general and method-specific, to successfully promote methods to a wide variety of women.

Chapter 5. Method-Specific Barriers and Facilitators to Five Types of Modern Contraceptive Methods as Perceived Among Reproductive Age Malawian Women

Abstract

Objective. I aimed to describe the barriers and facilitators perceived by women related to five contraceptive methods and examine the sociodemographic variables associated with use of typical categories of modern methods in rural Malawi.

Methods. Analyses are based on data from 769 non-pregnant, sexually active women aged 15 to 49 in the Umoyo wa Thanzi study (October 2016 - April 2017). I used descriptive statistics to examine perceptions of barriers and facilitators and describe how these perceptions differ across contraceptive methods. I assessed statistical differences in type of method used by sociodemographic characteristics using chi-square tests of independence.

Results. Malawian women, in general, perceive more facilitators of modern contraception than barriers. On average, women perceived several facilitators across all methods, such as acceptability for married women (97%), ease of use (96%), comfort telling a friend about use (95%), ease of obtaining the method (94%), friend recommended use of method (84%), effectiveness (88%), and male partner's support (81%). Key barriers, averaged across the methods, included perceptions that methods interfere with sexual pleasure for women (62%) and men (56%), disrupt regular, monthly

menstruation (51%), and are unacceptable for use by unmarried women (61%). Type of current method used varied by age, income, marital status, pregnancy desires, number of living children, and frequency of sexual activity.

Conclusions. By understanding the method-specific barriers and facilitators that women perceive, programs aiming to increase contraceptive use in Malawi can be better equipped to highlight facilitators and address specific barriers associated with each method type.

Introduction

Approximately 214 million women in low-income countries have unmet need for modern contraception – meaning they want to avoid pregnancy, but are not using effective contraceptive methods (Guttmacher Institute, 2017). Unmet need contributes to millions of unintended pregnancies, maternal deaths, and neonatal deaths annually (Cleland et al., 2012; Singh et al., 2014). When women's contraceptive needs are met, they are at reduced risk for negative health, social, and economic consequences associated with unintended pregnancy (Canning & Schultz, 2012; Cleland et al., 2012; Gipson et al., 2008). Population and family planning policies and programs are able to meet women's contraceptive needs by removing barriers and promoting benefits to modern contraception (Bongaarts, 2014; Bongaarts et al., 2012).

Women and couples who want to delay or limit pregnancy are often unable or unwilling to use contraception due to numerous obstacles (Campbell et al., 2006; Sedgh et al., 2016; Sedgh & Hussain, 2014; Williamson et al., 2009). Barriers may include lack of knowledge (Bongaarts & Bruce, 1995; Campbell et al., 2006; Casterline et al., 2001;

Mahmood & Ringheim, 1996; Williamson et al., 2009), hostile service quality environments (Campbell et al., 2006; Nalwadda et al., 2010; Stash, 1999; Williamson et al., 2009), negative social, cultural, and moral norms (Casterline et al., 1997, 2001; Hindin et al., 2014; Nalwadda et al., 2010; Ochako et al., 2015; Rutenberg & Watkins, 1997; Stash, 1999), fear of side effects and health concerns (Bongaarts & Bruce, 1995; Campbell et al., 2006; Castle, 2003; C-Change, 2012; Diamond-Smith et al., 2012; Hall et al., 2008; Hindin et al., 2014; John et al., 2015; Mosha et al., 2013; Nalwadda et al., 2010; Ochako et al., 2015; Rutenberg & Watkins, 1997; Schwandt et al., 2015; Sedgh et al., 2016; Stash, 1999), and social stigma and disapproval (Mosha et al., 2013; Williamson et al., 2009), including male partner's disapproval of modern contraception (Campbell et al., 2006; Casterline et al., 2001; Chipeta et al., 2010; Diamond-Smith et al., 2012; Garcia & Snow, 1997; Moronkola et al., 2006; Nalwadda et al., 2010; Sedgh et al., 2016; Sedgh & Hussain, 2014). Women may also be motivated to use contraception for a variety of reasons beyond the desire to avoid pregnancy. Facilitators to modern contraception may include social approval and support, informal informational sources (Paz Soldan, 2004; Rutenberg & Watkins, 1997; Stash, 1999), ability to use contraception covertly (Baiden et al., 2016; Biddlecom & Fapohunda, 1998; Garcia & Snow, 1997; Hindin et al., 2014; Maharaj & Cleland, 2005; Mosha et al., 2013; Nalwadda et al., 2010), decreased sexual inhibition (John et al., 2015), perceptions of effectiveness and reversibility (Garcia & Snow, 1997), healthy childbearing behaviors (C-Change, 2012; Chipeta et al., 2010), improved maternal health (Chipeta et al., 2010; Moronkola et al., 2006), and improved standards of living (Moronkola et al., 2006).

Method-specific barriers and benefits (i.e., the barriers and facilitators related to use of each type of contraceptive method) may influence contraceptive decisions (Ali et al., 2012; Sedgh et al., 2016); yet, past research has neglected to consider a range of method-specific factors. A limited number of studies have considered method-specific barriers related to side effects and health concerns (Diamond-Smith et al., 2012; Garcia & Snow, 1997; John et al., 2015; Ochako et al., 2015; Rutenberg & Watkins, 1997; Schwandt et al., 2015; Stash, 1999), but no studies have considered differences by method in perceptions of social approval, accessibility, and ease of use. Further, existing knowledge of method-specific barriers disproportionally relies on qualitative studies, making it difficult to assess the extent and influence of these barriers and facilitators at a population level. Finally, most large-scale assessments of reasons for nonuse have focused on perceptions of women with unmet need for contraception (Khan et al., 2007; Sedgh et al., 2016; Sedgh & Hussain, 2014). Self-reported reasons for nonuse provide limited insight on the full range of possible barriers and facilitators across all method types. When analyses exclude women who are currently using methods, we lack comparable evidence for current users who may still experience barriers and facilitators (Norris, Garver, Shoben, & Norris Turner, 2016).

The purpose of this study is to: (a) describe and identify the barriers and facilitators related to five types of contraceptive methods, including male condoms, pills, injectables, subdermal implants, and intrauterine devices (IUDs); and (b) examine the sociodemographic variables associated with different groupings of contraceptive methods currently used by women.

Setting. Malawi, a small landlocked country in southeastern Sub-Saharan Africa, has one of the highest population growth rates in the region (3.1% per year). According to the 2015-16 Malawi Demographic and Health Survey (DHS), the total fertility rate was 4.4 births per woman, a decline from 5.7 births in 2010 (National Statistical Office Malawi & ICF, 2017). Though use of contraception is steadily increasing across the country, levels of unmet need for contraception remain high. In the 2004 Malawi DHS, only 28% of women reported using modern contraception; this gradually increased to 59% in 2015-16 (National Statistical Office Malawi & ICF, 2017). Still, 19% of married Malawian women had unmet need for any method of contraception in 2015-16 (National Statistical Office Malawi & ICF, 2017). Despite increases in contraceptive prevalence due to an interest in decreased fertility, unintended childbearing has remained fairly stable and even increased slightly in Malawi over the last 25 years. In 2015-16, 44% of births were reported as either mistimed or unwanted, a 3% increase since 1992 (National Statistical Office Malawi & ICF, 2017).

A range of modern contraceptive methods is available throughout Malawi. The most commonly used method among married women is the injectable (30%), followed by the implant (12%), female sterilization (11%); few women use the pill (2%), male condom (2%) or IUD (1%) (National Statistical Office Malawi & ICF, 2017). Most contraception is supplied by public sector facilities (80%) (National Statistical Office Malawi & ICF, 2017), and 95% of all public sector facilities provide family planning services (Barden-O'Fallon, 2017). In addition to public sector facilities, approximately 57% of faith based organizations and 77% of private facilities provide some type of

family planning service (Barden-O'Fallon, 2017). Family planning is provided free of charge at public sector facilities in Malawi (Skiles et al., 2015).

Methods

Data. I used data from the third wave of the Umoyo wa Thanzi (UTHA) cohort study of sexual and reproductive health decision making conducted in rural Lilongwe district, Malawi (conducted between October 2016 and April 2017). UTHA was established in 2014 in collaboration with the University of Malawi and Child Legacy International (CLI), a nonprofit organization that operates a rural community hospital and serves 68 villages (approximately 20,000 residents). CLI staff conducted a census of the hospital's catchment area by enumerating all households during summer 2013. The sampling frame of the baseline survey was the census of the catchment area. The research team used stratified, cluster sampling to draw a sample of village clusters from the sampling frame. The research team stratified villages by trading centers, plantations, and rural location. All village clusters had between 50 to 250 households. The research team combined smaller villages into a single cluster and split larger trading centers into multiple clusters. Village clusters were randomly sampled within each strata until 1,000 households were included. All women of reproductive age (15 to 39 years) living in the randomly sampled village clusters and able to provide informed consent were eligible for participation in the baseline survey. UTHA recruited 1,034 women for the baseline survey.

The UTHA wave three survey took place among a sub-set of the original cohort as a result of attrition. Of the total 1,034 women who participated in the baseline survey,

863 (83.5%) completed the wave three questionnaire. Women were eligible for participation at wave three if they completed the UTHA baseline survey, lived within the catchment area of the hospital, and were able to provide informed consent. Research assistants approached each participant in the village listed on her original UTHA baseline locator form. If a participant had moved to a new village within the catchment area, the research assistants located the participant in her new village. Once a participant was determined to be eligible and consented to participate, a research assistant conducted the interview in or near the respondent's home. Research assistants conducted interviews in Chechewa using a standardized survey instrument. The survey asked women about their demographic characteristics, contraception and fertility history, health, and sexual behavior. Participants received 1,000 Malawian Kwacha (MWK), equivalent to approximately US $1.50, for completing the questionnaire. The Institutional Review Boards at The Ohio State University and the Malawi College of Medicine approved the study.

Key measures.

Method-specific barriers and facilitators. The research team measured barriers and facilitators to five types of contraception, including male condoms, pills, injectables, subdermal implants, and IUDs, asking a standardized set of 14 questions about each method. To ensure that the research team asked women about methods that they had knowledge and confidence of prior to being interviewed, the research team described each method and then asked, "Have you heard of the (METHOD) before this conversation?" If the respondent said "yes," then the research team asked, "How

confident would you be telling a friend about the (METHOD)?" If the respondent said "very" or "somewhat" confident, then the research team asked her the set of method-specific items. Items asked about ease of use, ease of access, covert use, method effectiveness, health side effects, effects on sexual pleasure, effects on women's future fertility, interpersonal support for use, and social acceptability.

The measures of method-specific barriers and facilitators are novel to this study, and thus underwent extensive piloting and development. I developed a preliminary, comprehensive set of items in consultation with experts in the field of family planning and on the basis of a full literature review. I then worked with the UTHA research team to translate the items using a modified version of Brislin's (1970) translation method to ensure measurement and content equivalence, meaning semantic, and cultural appropriateness (Brislin, 1970).

Current contraceptive use. Current use of a modern contraception method was measured by two items in a series. First, the research team asked, "Currently, are you using any method to avoid pregnancy in your relationship?" If the participant responded "yes," then the research team asked, "Which method are you using?" Response options included a list of contraception methods, including modern, traditional, and folk methods. Specifically, participants could indicate use of the male condom, female condom, pill, injectable, subdermal implant, IUD, sterilization, lactational amenorrhea, withdraw prior to ejaculation, calendar method (i.e., periodic abstinence), inserting an herb into the vagina, swallowing an herb or herbal tea, and washing genitals after sex.

I created a five category current use variable: no modern method (no method or traditional methods), barrier method (male and female condom), short-acting hormonal method (injectable and pill), long-acting reversible contraceptive (LARC) method (subdermal implant and IUD), and permanent method (sterilization).

Sociodemographic variables. I measured participant's age and education as continuous variables in years. For these analyses, monthly household income was categorized as less than or equal to 4,999 MWK per month, 5,000 to 19,999 MWK per month, 20,000 to 39,999 MWK per month, 40,000 to 99,999 MWK per month, and greater than or equal to 100,000 MWK per month. I coded marital status as married or single. Number of living children was categorized as zero, one, two, three, or equal to or greater than four. Sexual activity in the past month was dichotomized as yes or no. Pregnancy desire was categorized as no more children, within two years, after two years, and unsure on timing/I do not know. Women were classified as having unmet need for contraception if they were fecund, sexually active in the past month, and desired to either delay pregnancy, limit pregnancy, or unsure about if or when they wanted a pregnancy, and not using a modern method of contraception. Finally, ever use of modern contraception was dichotomized as yes or no.

Data analysis. Data analysis was conducted with Stata 14.1 (Statacorp, College Station, TX). For the purposes of this analysis, I excluded participants who were 50 years or older (n = 2), were currently pregnant (n = 74), or had never had sex (n = 18), which resulted in an analytic sample of 769 participants. I first ran descriptive statistics to assess study participants' characteristics, including demographic information, current

contraceptive use, and perceptions of barriers and facilitators. Next, I assessed for statistical differences in use of a particular contraceptive method group by sociodemographic characteristics using chi-square tests of independence.

Results

Background characteristics. Participants had a mean age of 29 years and five years of education (Table 2). Most women were of low socioeconomic status and many reported a monthly household income of 19,999 MWK (approximately US $27.50), or less (36.9%). Most women were currently married (83.7%). Over one-third of women had four or more living children, while less than 5% had no living children. Almost 80% of women had had sex within the past month. Most women wanted to either delay (28.9%) or limit pregnancy (32.0%), approximately 14% wanted a child within the next 2 years, and about 15% were unsure about the timing of their next child.

Modern contraceptive use was highly prevalent, with almost 80% of women currently using a modern method. The most commonly used method was the injectable (40.8%), followed by the implant (20.2%) and female sterilization (13.0%). Very few women used condoms (3.6%), pills (1.6%), or IUDs (0.1%). Approximately 12% of the sample had unmet need for contraception, meaning that they were fecund, sexually active in the past month, did not want a pregnancy at all, within the next two years or were unsure about their desire, and were not using a modern method of contraception. Overall, 96.1% of women reported that they had ever used a modern contraceptive method.

Table 2 Selected characteristics of Malawian women aged 15-49, Umoyo wa Thanzi Wave 3 survey, 2016-2017

Notes: 5,000 MWK is approximately US$7. Some percentages do not total 100 due to missing values. MWK=Malawian kwacha

Characteristic	Mean	SD
Age (years)	29.4	6.7
Years of education	5.4	5.6
	n	%
Monthly household income (MWK)		
≤ 4,999	238	31.0
5,000 – 19,999	276	35.9
20,000 – 39,999	81	10.5
40,000 – 99,999	48	6.2
≥ 100,000	42	5.5
Marital status		
Married	644	83.7
Single	124	16.2
No. of living children		
0	34	4.4
1	121	15.7
2	181	23.5
3	154	20.0
≥ 4	277	36.0
Sexually active in past month		
No	157	20.4
Yes	612	79.6

Continued

Table 2 continued

Characteristic	n	%
Pregnancy desires		
No more children	246	32.0
Within 2 years	106	13.8
After 2 years	222	28.9
Unsure on timing / I do not know	118	15.3
Current modern method use		
Yes	610	79.3
No	159	20.7
All types		
No modern method	159	20.7
Condom	28	3.6
Pill	12	1.6
Injectable	314	40.8
Implant	155	20.2
Intrauterine device	1	0.1
Female Sterilization	100	13.0
Unmet need for modern contraception		
Yes	91	11.9
No	675	88.1
Ever used modern contraception		
Yes	739	96.1
No	30	3.9

Method-specific barriers and facilitators. Most women reported that they had heard of all five methods of contraception: injectables (98%), implants (94%), male condoms (94%), pills (91%), and IUDs (80%) (not shown). More women reported confidence in telling a friend about the injectable (78%), male condom (46%), and implant (45%) than the pill (34%) and IUD (12%).

Table 3 presents the proportion of women who cited each of several method-specific barriers and facilitators to male condoms, injectables, implants, pills, and IUDs. Few women reported that any method had serious side effects; however, many women reported that regular menstruation and sexual pleasure were disrupted by the use of certain methods. Roughly one-fourth of women who answered questions about injectables, pills, implants, and IUDs perceived each method to have minor side effects, and less than 20% of women who answered questions about condoms perceived condoms to have minor side effects. Larger proportions of women reported that the injectable, implant, and pill disrupted regular, monthly menstruation than the IUD and male condom. A minority of women perceived that each method would create difficulty in becoming pregnant after use: male condom (8.2%), implant (12.2%), pill (13.7%), IUD (17.6%), and injectable (27.6%). The majority of women who responded to each method perceived that methods interfered with sexual pleasure for women and men. Few women reported that the methods enhanced sexual pleasure, except for IUDs. Almost one-fourth of women who answered questions about IUDs reported that IUDs enhanced sexual pleasure.

In general, the social acceptability of contraceptive methods varied by marital status and by method type. As shown in Table 3, larger proportions of women indicated that it was unacceptable for never married women to use implants (78.2%) and IUDs (75.7%), as compared to male condoms (35.3%). The vast majority of women who responded to the method-specific items reported that it was acceptable for married women to use all of the methods. Of the contraceptive methods, women indicated that a smaller proportion of male partners were supportive of using condoms (66.9%), and larger proportions reported that male partners were supportive of using implants (87.1%), injectables (85.7%), IUDs (83.8%), and pills (80.1%). Women indicated their friends to be more supportive of using implants (90.5%), IUDs (90.5%), pills (88.0%), and injectables (85.2%), than male condoms (67.8%). In sum, it was more socially acceptable for married women to use contraception than never married women. Across the methods, however, hormonal methods (injectables, pills, implants, and IUDs) were more acceptable for use than barrier methods (condoms) for married women.

Perceptions of method effectiveness and access were similar across the methods. As shown in Table 3, the vast majority of women who answered questions specific to each method perceived that these methods were easy to obtain, easy to use, and effective at preventing pregnancy.

Table 3 Barriers and facilitators to modern contraception as a percentage of women familiar with each method, Umoyo wa Thanzi Wave 3 survey, 2016-2017
Notes: [a]Use with a hypothetical partner

Barriers and facilitators	Male condom (n = 329)	Injectable (n = 593)	Implant (n = 326)	Pill (n = 241)	Intrauterine device (n = 74)
Health					
Side effects					
None	71.4	65.9	68.1	58.9	58.1
Minor	17.9	27.0	25.5	23.7	21.6
Serious	8.8	6.2	6.1	15.8	14.9
Do not know / Missing	1.9	0.9	0.3	1.6	5.4
Monthly menstruation					
Disrupts	44.7	61.3	54.3	52.3	40.6
Does not disrupt	52.9	37.4	43.3	44.4	52.7
Do not know / Missing	2.4	1.3	2.4	3.3	6.7
Difficulty becoming pregnant after use					
Unlikely	88.8	70.2	84.4	81.7	77.0
Likely	8.2	27.6	12.2	13.7	17.6
Do not know / Missing	3.0	2.2	3.4	4.6	5.4
Women's sexual pleasure					
Interferes	66.9	73.4	58.3	56.4	52.7
No impact	17.6	16.2	19.3	21.6	20.3
Enhances	11.9	8.8	18.1	16.6	21.6
Do not know / Missing	3.6	1.6	4.3	5.4	5.4
Men's sexual pleasure					
Interferes	65.1	65.8	52.8	51.5	46.0
No impact	16.1	18.2	20.3	22.4	23.0
Enhances	9.7	9.4	17.8	17.4	23.0
Do not know / Missing	9.1	6.6	9.1	8.7	8.0

Continued

Table 3 continued

Barriers and facilitators	Male condom (n = 329)	Injectable (n = 593)	Implant (n = 326)	Pill (n = 241)	Intrauterine device (n = 74)
Social and interpersonal					
Acceptable for never married women					
Yes	64.7	45.0	21.8	37.8	24.3
No	35.3	55.0	78.2	62.2	75.7
Do not know / Missing	0.0	0.0	0.0	0.0	0.0
Acceptable for married women					
Yes	89.7	99.7	100.0	97.9	97.3
No	10.3	0.3	0.0	2.1	2.7
Do not know / Missing	0.0	0.0	0.0	0.0	0.0
Support of partner[a]					
Supportive	66.9	85.7	87.1	80.1	83.8
Unsupportive	26.8	8.6	7.7	12.5	5.4
Do not know / Missing	6.3	5.7	5.2	7.4	10.8
Comfort telling a friend about use					
Comfortable	86.3	97.1	97.6	97.9	97.3
Uncomfortable	13.4	2.7	2.4	2.1	2.7
Do not know / Missing	0.3	0.2	0.0	0.0	0.0
Friend has recommended use					
Yes	67.8	85.2	90.5	88.0	90.5
No	31.9	14.8	9.5	12.0	9.5
Do not know / Missing	0.3	0.0	0.0	0.0	0.0
Pregnancy prevention					
Effectiveness					
Effective	80.9	97.5	98.2	75.5	89.2
Ineffective	18.8	2.5	1.8	24.1	8.1
Do not know / Missing	0.3	0.0	0.0	0.4	2.7

Continued

Table 3 continued

Barriers and facilitators	Male condom (n = 329)	Injectable (n = 593)	Implant (n = 326)	Pill (n = 241)	Intrauterine device (n = 74)
Access					
Ability to obtain					
Easy	93.0	96.5	98.5	97.1	97.3
Hard	6.7	3.5	1.5	2.9	2.7
Do not know / Missing	0.3	0.0	0.0	0.0	0.0
Ability to use					
Easy	96.4	96.8	97.2	90.5	89.2
Hard	3.0	3.0	2.5	9.5	9.5
Do not know / Missing	0.6	0.2	0.3	0.0	1.3
Covert use					
Ability to be used covertly					
Easy	52.3	63.7	68.7	67.6	82.4
Hard	47.1	35.9	31.3	32.0	16.2
Do not know / Missing	0.6	0.4	0.0	0.4	1.4

Sociodemographic characteristics associated with method use. We examined participant's sociodemographic characteristics associated with their current use of each type of contraceptive method. All demographic characteristics presented in Table 4 were significantly associated with type of method used, except monthly household income.

Women at the end of their reproductive careers tended to use permanent methods of contraception. As shown in table 4, women older than 34, women with four or more children, and women who wanted to limit pregnancy were more likely to use permanent methods, as compared to younger women, women with less children, and women who desired another child.

Women early in their reproductive career tended not to use modern contraception or, if they used, to rely on less effective modern methods. For instance, adolescent women, women with no children, and single women were more likely to use barrier methods or no method, as compared to older women, women with children, and married women. Women who were not sexually active in the previous month largely overlapped with adolescent women, women with no children, and single women. Women who had not had sex in the previous month were less likely to use modern contraception or more likely to use barrier methods than women who had had sex in the previous month.

Women in most demographic categories reported use of either a short-acting hormonal method or long-acting reversible method. Injectables (a short-acting hormonal method) and implants (a long-acting reversible method) were the two most common methods used by women in this sample. Women between the ages of 20 and 34, married women, women with one to three children, and women who desired to delay pregnancy

were more likely to use either a short-acting hormonal method or a long-acting reversible method, as compared to younger women, single women, women with no children or four or more children, and women who were unsure about their desires for another child.

Table 4 Malawian women's contraceptive method use as a percentage of the selected demographic characteristics, Umoyo wa Thanzi Wave 3 survey, 2016-2017

Notes: 5,000 MWK is approximately US $7. MWK=Malawian kwacha. [a]No modern method includes women not using any method. *$p < .05$ **$p < .01$ ***$p < .001$

		Current contraceptive method type					
Characteristic	n	No modern method[a] (n = 159)	Short-acting hormonal (n = 326)	Long-acting reversible (n = 156)	Permanent (n = 100)	Barrier (n = 28)	χ^2 (df)
Age							
15-19	41	29.3	34.2	19.5	0.0	17.1	188.9*** (16)
20-24	178	16.9	50.0	27.0	1.1	5.1	
25-29	169	17.2	53.3	24.3	3.0	2.4	
30-34	154	21.4	46.1	18.2	11.7	2.6	
35-49	197	24.9	24.4	12.2	37.1	1.5	
Education (years)							
< 2	99	24.2	28.3	18.2	26.3	3.0	36.4*** (12)
2 – 4	252	23.8	42.5	18.7	13.1	2.0	
5 – 8	295	16.3	47.8	22.0	9.8	4.1	
> 8	117	21.4	41.9	22.2	7.7	6.8	
Number of living children							
0	34	52.9	0.0	3.0	3.0	41.2	301.3*** (16)
1	121	16.5	56.2	24.8	0.8	1.7	
2	181	18.2	51.4	26.0	2.2	2.2	
3	154	16.2	50.7	22.1	8.4	2.6	
≥ 4	277	22.4	31.4	15.9	29.2	1.1	

Continued

Table 4 continued

Characteristic	n	Current contraceptive method type: No modern method[a] (n = 159)	Short-acting hormonal (n = 326)	Long-acting reversible (n = 156)	Permanent (n = 100)	Barrier (n = 28)	χ^2 (df)
Monthly household income (MWK)							
≤ 4,999	238	25.6	39.9	20.6	12.6	1.3	17.7 (16)
5k – 19,999	276	17.4	47.5	20.3	10.9	4.0	
20k – 39,999	81	18.5	43.2	17.3	18.5	2.5	
40k – 99,999	48	16.7	43.8	18.8	16.7	4.2	
≥ 100k	41	14.3	38.1	31.0	14.3	2.4	
Marital status							
Married	644	14.9	47.5	22.2	13.7	1.7	137.5*** (4)
Single	178	50.4	16.0	10.4	9.6	13.6	
Sexually active in past month							
No	157	50.3	24.8	10.8	7.6	6.4	115.3*** (4)
Yes	612	12.1	46.9	22.7	14.4	2.9	
Pregnancy desires							
No more	246	25.2	42.7	17.5	12.6	2.0	
Within 2 years	106	34.9	44.3	14.2	1.9	4.7	131.1*** (12)
After 2 years	222	8.1	57.2	33.3	0.0	4.7	
Unsure/Do not know	246	28.0	39.8	20.3	0.0	11.9	

Discussion

Malawian women perceived many factors that may facilitate use of different contraceptive methods, and endorsed few barriers to the use of methods. Across the methods, barriers and benefits followed similar patterns, and although not large, there still existed important variations between each method. As expected, women's current contraceptive use varied across the reproductive career. The findings of this study provide a more comprehensive understanding of why women may use or not use different types of contraception.

Few women indicated that the contraceptive methods had side effects, and most believed that fertility issues were an unlikely result of method use. These findings contrast with numerous qualitative studies suggesting that women believe that contraceptive methods possess a range of side effects, including minor (e.g., dizziness, weight loss, and body pain) and severe (e.g., reproductive cancer, and adverse maternal and neonatal outcomes) health risks and temporary and/or permanent infertility (Bryant, Hamela, Gotter, Stuart, & Kamanga, 2015; Castle, 2003; C-Change, 2012; Mosha et al., 2013; Nalwadda et al., 2010; Ochako et al., 2015; Rutenberg & Watkins, 1997; Schwandt et al., 2015; Stash, 1999; Williamson et al., 2009). Furthermore, fear of side effects and health issues are primary reasons for nonuse of contraception and discontinuation (Ali et al., 2012; Bradley et al., 2009; Campbell et al., 2006; Khan et al., 2007; Sedgh et al., 2016). We did not investigate general side effects very specifically (e.g., dizziness versus headaches versus weight gain); however, our results indicate that future researchers may not need to, if women do not endorse these perceptions.

We found that the majority of women who answered questions about hormonal methods perceived hormonal methods to disrupt regular, monthly menstruation. Our findings support evidence from qualitative studies which have also found that women perceived hormonal contraceptive methods to be associated with heavy or irregular bleeding patterns (Burke & Ambasa-Shisanya, 2011; Castle, 2003; C-Change, 2012; Chipeta et al., 2010; Garcia & Snow, 1997). These studies have shown that women often place heavy emphasis on maintaining regular, menstruation periods during contraceptive decision making. We also found that exceptionally large proportions of women indicated that condoms interfere with regular menstruation (about 45%). We would not expect male condoms to be associated with women's menstruation periods; however, no prior studies, to our knowledge, have examined this association. A qualitative study conducted in Malawi found that women's past experiences with side effects from short-acting methods influenced respondent's perceptions about the barriers and benefits to other method types (Bryant et al., 2015). It may be that the women in our study who perceived that condoms interfere with regular menstruation are basing their opinions off of their prior experiences with hormonal methods, given that use of male condoms is low in Malawi.

The effect of contraceptive methods on sexual pleasure is an important consideration in decision making among Malawian women (Bisika, 2008; C-Change, 2012; John et al., 2015; Tavory & Swidler, 2009). We found that the majority of women in our study perceived each method to interfere with sexual pleasure for women and men. Other studies have also found that Malawian women perceive a range of modern methods

to reduce sexual pleasure, libido, or appeal (John et al., 2015). While we did not inquire about why methods would reduce sexual pleasure, other studies provide evidence that non-barrier methods may be associated with certain side effects (e.g., prolonged menstruation, weight gain, or vaginal dryness) that may detract from sexual intercourse (C-Change, 2012; Chipeta et al., 2010; J. A. Higgins & Davis, 2014; John et al., 2015; Nalwadda et al., 2010; Ochako et al., 2015; Rutenberg & Watkins, 1997; Williamson et al., 2009), and barrier methods may be associated with adverse effects on sexual sensation and lubrication (J. A. Higgins & Davis, 2014; J. A. Higgins & Smith, 2016).

Women's social networks, including male partners, friends, in-laws, family members, and community members, may influence women's perceptions of contraceptive methods, and their contraceptive decisions (Casterline et al., 1997, 2001; Hindin et al., 2014; Nalwadda et al., 2010; Ochako et al., 2015; Rutenberg & Watkins, 1997). We found that larger proportions of women perceived that their peers and male partners supported the use of pills, injections, implants, and IUDs than male condoms. We are unsurprised that the social acceptability of male condoms is less than other methods. Prior studies have widely recognized the social unacceptability of male condoms, within and outside of marriage (Campbell et al., 2006; Casterline et al., 2001; Chipeta et al., 2010; Diamond-Smith et al., 2012; Garcia & Snow, 1997; Moronkola et al., 2006; Nalwadda et al., 2010). However, prior studies are less specific about whether or not women's social networks, specifically women's peers, approve of or are supportive of pill, injection, implant, or IUD use. Interestingly, we found that more women indicated that these methods (pills, injections, implants, and IUDs) were unacceptable for use by

never married women than male condoms. No prior quantitative studies, to our knowledge, have compared the social acceptability of different methods. However, qualitative studies suggest that women often assume non-barrier methods are only for use by married women who have begun childbearing (Moronkola et al., 2006; Nalwadda et al., 2010; Ochako et al., 2015). The second part of our analysis support these results. Women at the start of their reproductive careers tended not to use modern contraception or to use barrier methods.

Limitations. The present study has important limitations. Women must have heard about a method prior to the survey and responded that they were "very" or "somewhat" confident that they could tell a friend about the method to have received the method-specific questions. Awareness of a method is a critical precursor to having opinions about or perceptions of barriers and facilitators to a method. In other words, a woman cannot answer questions about a method that she never knew existed. However, we may have limited our sample to women who have high levels of familiarity with or knowledge about family planning by excluding women who were not confident that they could tell a friend about the methods. Women in our study may have had more positive beliefs about contraceptive methods than the population average, because women in our study may have be more knowledgeable about family planning than what is typical (Ayaz & Efe, 2009).

We also acknowledge that women in our sample may be more exposed to positive messages about modern contraception because of the close proximity of a local health center (i.e., the rural health clinic that we partner with and where our research

administration site is located). All participants in our study lived within 20 kilometers to the health center, and three health center outreach sites are located throughout the study catchment area. The health center has frequent contact with community members through outreach and engagement programs (e.g., teen mothers support group, HIV support group, specialized health clinics).

In this study, we cannot determine which barriers and facilitators are the most important to women and the most important in contraceptive decisions. We did not ask women to rank the relative value of barriers and facilitators, or ask women which factors have prevented or facilitated their own contraceptive use. Thus, a factor that we label as a barrier (e.g., interference with sexual pleasure for women) may not be considered a barrier for individual women, women may not take this factor into consideration in contraceptive decisions, or women may place more emphasis on another factor (e.g., effectiveness of the method at preventing pregnancy) during decision making. However, we based our list of barriers and facilitators on an extensive literature review and qualitative interviews conducted within the study catchment area, and in consultation with family planning experts, Malawian colleagues, and Malawian research assistants.

Furthermore, we did not investigate supply-side method-specific barriers and facilitators. Supply-side barriers and benefits may influence contraceptive prevalence (Fleming, Sokoloff, & Raine, 2010; Skiles et al., 2015). However, women did not indicate that access to methods was difficult in our study. Further research is needed within our study sample to understand women's perceptions of service quality barriers and benefits to specific contraceptive methods. Evidence on the relationship between

women's perceptions and the family planning service quality environment is severely limited. It is plausible that the availability of specific methods influence women's perceptions of method-specific barriers and facilitators, and may ultimately determine contraceptive behaviors. The next steps of this line of research are to disentangle these relationships.

Finally, our study was cross-sectional, collecting data at only one point in tme. We do not know how women's perspectives of method-specific barriers and benefits fluctuate with exposure to various factors and events (e.g., changes in marital status, childbearing, socioeconomic development) over time. Although we did not establish any casual relationships in this study, we provided a detailed description of women's perceptions of the advantages and disadvantages to using certain contraceptive methods. In order to better understand how perceived barriers and benefits are socially created and change with exposure to the larger environmental context, a longitudinal design which incorporates temporal dimensions will be necessary.

Conclusions. This study has attempted to quantify and describe key factors that may prevent or motivate women to use certain contraceptive methods. Results from this research can be used in the development of evidence-based interventions to promote modern methods available in Malawi. Notably, the majority of women who answered method-specific questions perceived that methods interfered with sexual pleasure, disrupted regular, menstrual periods, and were unacceptable for never married women. Targeted communication should be designed to address the interaction of fear of precise health concerns (specifically, menstrual disruption and sexual interference) and social

myths/rumors which may drive negative perceptions of methods or inaccurate medical information about methods (Nalwadda et al., 2010; Ochako et al., 2015; Rutenberg & Watkins, 1997; Stash, 1999). Health care providers should work to address women's health concerns before uptake and during use to prevent unmet need. For example, clinicians could prescribe or provide women with a prophylactic package of medication to ease side effects of contraception (e.g., nonsteroidal anti-inflammatory drugs for menstrual bleeding, vaginal lubricants for specific, sexual health issues). In addition, public health campaigns and health care providers could promote the use of certain methods, such as long-acting reversible contraception, by emphasizing their perceived benefits (e.g., sexual benefits, effectiveness, and convenience) in the mass media and during routine counseling.

In addition to the specific health concerns that we found to be prominent in our study, family planning interventions need to recognize and address the broader social forces that influence contraceptive use for different populations of women. Decisions about contraceptive use are not made in a vacuum; women consult their peers and male partners, and negative social implications can occur from contraceptive use (Nalwadda et al., 2010; Ochako et al., 2015). Peer-to-peer interventions, such as peer referral, may be successful in promoting contraceptive services, as they have been with other sexual health topics, such as voluntary medical male circumcision (Zanolini et al., 2016). Further, unmarried and adolescent women face unique social challenges when they desire to use contraception. Interventions have been designed to meet unmarried women's and adolescent women's needs (e.g., youth friendly services), but are often unsuccessful

(Williamson et al., 2009). These populations of women may be better served by addressing the social and cultural norms counter to postponement of first birth, child delaying, and child limiting.

Little quantitative research has investigated the full array of barriers and facilitators that are hypothesized to influence women's contraceptive decisions, let alone method-specific barriers and facilitators. No studies, to our knowledge, exist that have quantitatively examined method-specific barriers and facilitators in Sub-Saharan Africa. Research is lacking in this particular area of family planning research because barriers and facilitators are difficult to quantify, measure, and assess (Casterline et al., 2001). Major differences in contraceptive method characteristics may also contribute to difficulty comparing method-specific barriers and facilitators; although, these comparison are important for understanding variation in women's perceptions. Our study provides original and novel insights into the similarities and differences between method-specific barriers and facilitators of male condoms, pills, injectables, implants, and IUDs. Future studies in Malawi should include female sterilization in their analyses, as tubal ligation is an increasingly popular method of contraception (National Statistical Office Malawi & ICF, 2017). Future studies should also include other factors that may be method-specific, such as religious approval, approval of in-laws and family members, and service quality factors, to understand which are associated with unmet need.

Method-specific barriers and facilitators may be critical factors in women's contraceptive decision making. The access and availability of modern contraception has greatly improved in Malawi (National Statistical Office Malawi & ICF Macro, 2011), and

our findings support this evidence. However, high levels of unmet need for modern contraception in Malawi remain a critical public health concern given the adverse effects of unintended pregnancy. Our findings suggest that interference with sexual pleasure, changes to menstrual periods, and social approval for never married women may be important to women when choosing a contraceptive method. These barriers should be addressed by family planning policies and programs to potentially increase the use of modern contraception.

Chapter 6. The Relationship Between Method-Specific Barriers and Benefits to Contraception and Contraceptive Use in rural Malawi

Abstract

Background. A range of barriers prevent women from using modern contraceptive methods, and facilitators encourage contraceptive use. The barriers and facilitators to specific methods and their relationship to method-specific use in developing countries has not been examined.

Methods. Data from the third wave survey of the Umoyo wa Thanzi research program in rural Lilongwe, Malawi were used to examine the barriers and benefits to using two common contraceptive methods, injectables and implants. Logistic regression was used to assess the relationships between injectable-specific barriers and benefits and use of injectables and between implant-specific barriers and benefits and use of implants.

Results. Nonusers of injectables perceived their partners as less supportive in using the injectable (12%), as compared to users (7%), and perceived injectables as having side effects more often (41%), as compared to users (31%). Similarly, nonusers of implants perceived implants as having side effects more often (40%), as compared to users (24%). More current implant nonusers perceived implants as unacceptable for use by never married women (28%) and as interfering with sexual pleasure for men (66%) than current implants users (14% and 55%, respectively). In the logistic regression analyses, the odds of injectable use were reduced by half among women who perceived injectables as having side effects and/or who perceived that injectables interfere with

sexual pleasure for men, compared to those who did not perceive these as barriers. For use of implants, findings were similar comparing women who perceived implants as having side effects (but not impacting sexual pleasure) relative to those who did not. The odds of implant use were over 60% less for women who perceived implants as unacceptable for use by never married women.

Conclusions. While barriers to injectables and implants are widely perceived, not all are equally associated with use of these specific methods. Understanding the complex nature of women's perceptions of method-specific barriers and benefits may be valuable in improving family planning programs and contraceptive counseling.

Introduction

The large prevalence of unmet need for modern contraception among women in the developing world is a global, public health concern. The most widely utilized definition, developed for the Demographic and Health Surveys, classifies a married woman of reproductive age (15 to 49 years) as having unmet need if she is sexually active, fecund, does not want a child in the next two years or at all, and not using contraception (Bradley et al., 2012). Approximately 214 million women of reproductive age had unmet need for modern methods in developing regions as of 2017; the highest proportion of women who have unmet need for modern contraception is in Sub-Saharan Africa (21%) (Guttmacher Institute, 2017). Modern contraceptive use is effective in reducing unintended pregnancies, and thereby averting maternal and infant mortality and improving social, educational, economic, and health outcomes for women (Canning &

Schultz, 2012; Cleland et al., 2012; Dibaba et al., 2013; Gipson et al., 2008; Herd et al., 2016; Sonfield et al., 2013).

Most national family planning programs aim to reduce the barriers to modern contraceptive use and promote the benefits (Bongaarts, 2011, 2014; Cleland et al., 2012). However, we posit that barriers and facilitators to modern contraception may be method-specific, and thus family planning programs may inadequately address reasons for nonuse or inadequately promote benefits to modern methods. Indeed, method-specific barriers and facilitators have been identified in previous qualitative research in settings around the globe (Diamond-Smith et al., 2012; Garcia & Snow, 1997; John et al., 2015; Ochako et al., 2015; Rutenberg & Watkins, 1997; Schwandt et al., 2015; Stash, 1999; Thummalachetty et al., 2017). In a multi-country, qualitative study conducted in India, Nepal, and Nigeria, Diamond-Smith et al. (2012) found that fears of side effects were specific to different types of contraceptive methods (e.g., pills cause birth defects), which may have prevented use of some methods but not others. A qualitative study conducted in Malawi also found that certain methods were associated with increased or decreased sexual pleasure and these perceptions influenced use (John et al., 2015). In more general investigations of reasons for nonuse, women often cite partner's disapproval, social, cultural, and moral unacceptability, fears of side effect, including general health concerns (e.g., dizziness), severe side effects (e.g., cervical cancer), disruption to menstruation, and sexual displeasure, and fear of future infertility as key barriers to using modern contraceptive methods (Casterline et al., 1997, 2001; Castle, 2003; C-Change, 2012; Chipeta et al., 2010; Garcia & Snow, 1997; M. A. K. Hall et al., 2008; Hindin et al.,

2014; John et al., 2015; Mosha et al., 2013; Nalwadda et al., 2010; Ochako et al., 2015; Williamson et al., 2009). Despite several qualitative and descriptive investigations, method-specific barriers and facilitators have not been extensively examined through quantitative methods.

With regards to general barriers and facilitators, the most typical quantitative method of inquiry to understand causes of nonuse has been through large-scale analyses of reasons for nonuse among current nonusers using the Demographic and Health Surveys (DHS) (e.g., Khan et al., 2007; Sedgh et al., 2016; Sedgh & Hussain, 2014). The DHS questionnaire asks women who want to delay or limit pregnancy and not using any method of contraception why they are not using. Women provide a self-reported response to the question. There are two major drawbacks with this approach. First, women's responses are subjective, oversimplified, and may not capture competing reasons for nonuse (Bongaarts & Bruce, 1995; Cleland, Harbison, & Shah, 2014). Second, there is not comparable information for current contraceptive users. For example, fear of side effects, health risks, and inconvenience were the most commonly cited group of reasons for nonuse among married women with unmet need in 21 of a 52 country DHS analysis (Sedgh et al., 2016). However, we do not know if women with met contraceptive need were equally concerned about side effects, health concerns, and inconveniency of modern methods. Thus, we cannot be sure that perceptions of side effects, health concerns, and inconvenience distinguish a contraceptive user from a nonuser, or a woman with met need from a woman with unmet need.

The purpose of this study was to quantify method-specific barriers and facilitators to two common modern methods in Malawi, injections and implants (30% of women use injections and 12% of women use implants), and assess the relationship between method-specific perceptions and method-specific use and nonuse. The study was carried out in rural Malawi among women of reproductive age, and the sample consisted of both current contraceptive users and nonusers. Malawi's national population policy, which dates back to 1994, was one of the last such policies instituted in Sub-Saharan Africa (Chimbwete et al., 2005). The policy's primary outcomes are to reduce fertility and mortality levels and slow population growth by promoting and mainstreaming family planning and scaling up family planning services (Government of Malawi, 2012). Specifically, the policy aims to promote the benefits of having fewer children through behavior change communication programs and address the cultural, religious, social, and other barriers of family planning demand, access, and use (Government of Malawi, 2012). Understanding method-related reasons for nonuse may assist in future policy development and improvement in Malawi.

Family planning services are offered at a wide range of public and private health care facilities in Malawi, including faith based organizations (Barden-O'Fallon, 2017). The most recent Malawi DHS indicates that most women obtain modern contraception from public facilities (79%) (National Statistical Office Malawi & ICF, 2017), and less than 10% of public facilitates charge user fees for family planning services (Barden-O'Fallon, 2017). Due to increases in accessibility and awareness of modern contraception, fertility has declined substantially from 6.7 children per woman in 1992 to

4.4 children per woman in 2015-16 (National Statistical Office Malawi & ICF, 2017). Modern contraceptive prevalence among currently married women has increased from 7% in 1992 to 58% in 2015-16 (National Statistical Office Malawi & ICF, 2017). The level of unmet need, however, has seen little change since the late 1990s, and almost one-third of married women and over one-half of unmarried women were classified as having unmet for contraception in 2015-16 (National Statistical Office Malawi & ICF, 2017).

Methods

Study setting and population. I analyzed data from the third wave survey of the Umoyo wa Thanzi (UTHA), *Health for Life*, research program conducted between October 2016 and April 2017 in rural Lilongwe District in Central Malawi. Participants of the third wave survey were a sub-sample of the UTHA baseline survey, who were selected from the catchment area of UTHA's partnering rural hospital. Sampling methodology for the baseline survey can be found in the published literature (e.g., Huber, Esber, Garver, Banda, & Norris, 2017). Women were eligible for the study if they completed the UTHA baseline survey, lived within the hospital's catchment area (approximately 20 kilometer radius), and were able to provide informed consent.

Survey development. The planning and development phase of the UTHA third wave survey began with preliminary analysis of qualitative data collected within the catchment area in 2013 and a comprehensive literature review. I developed a comprehensive list of method-specific barriers and facilitators to modern contraceptive methods and worked with Malawian research assistants to adapt items to the Malawian cultural context and translate items to the Chechewa language. The UTHA research team

translated items using a modified version of Brislin's (1970) translation method to ensure measurement and content equivalence, meaning semantic, and cultural appropriateness. After the survey was translated, it was piloted extensively among Malawian community members to ensure participants would understand the questions as intended by the research team.

Data collection. UTHA participants were approached by research staff in the village listed on their original locator forms and invited to participate in the study. When a participant had moved to a new village within the catchment area, research assistants approached the participant in their new village. Once an individual consented to participation, research assistants conducted the interview in or near the respondent's home. Research assistants conducted interviews in Chechewa using the standardized survey instrument. Respondents' answers were recorded onto tablet computers and uploaded to a secure internet site daily. Participants received 1,000 Malawian Kwacha (MWK), equivalent to approximately US $1.50, for completing the questionnaire.

Measures.

Outcome. The study had two primary outcomes. The first primary outcome was current use of the injectable. I created a dichotomous variable for modeling: current use of the injectable or current nonuse of the injectable. The second primary outcome was current use of the subdermal implant. Similarly, I created a dichotomous variable: current use of the implant or current nonuse of the implant.

Exposures. I measured perceived barriers and facilitators to injectables and implants with 14 items per method. The UTHA research team only asked women about

injectables or implants if they had knowledge of the methods prior to being interviewed and were confident in their knowledge about the methods. First, the research team described each method and then asked, “Have you heard of the (METHOD) before this conversation?” If the respondent said “yes,” then the research team asked, “How confident would you be telling a friend about the (METHOD)?” If the respondent said “very” or “somewhat” confident, then the research team asked her the set of method-specific items. Items asked about ease of access, ease of use, covert use, method effectiveness, health side effects, effects on sexual pleasure, and social support for use. However, I only included items in the multivariate models with adequate variability (Table 5). For example, 96.4% of participants who responded to the injectable items perceived injectables as easy to obtain, and 98.4% of participants who responded to the implant items perceived implants as easy to obtain. Thus, ease of use was not included in either the injectable or implant multivariate model.

Table 5 Exposures used in multivariate modeling, by type and injectable or implant

Question type	Injectable	Implant
Side effects	If you used used injectables, would there be no side-effects, minor side-effects, or serious side-effects for you? *(Coded as: has no side effects, has minor or serious side effects)*	If you used implants, would there be no side-effects, minor side-effects, or serious side-effects for you? *(Coded as: has no side effects, has minor or serious side effects)*
Disruption to menstruation	If a woman uses injectables, will the effect on her menstruation be positive, negative or have no effect? *(Coded as: will not disrupt menstruation, will disrupt menstruation)*	If a woman uses implants, will the effect on her menstruation be positive, negative or have no effect? *(Coded as: will not disrupt menstruation, will disrupt menstruation)*
Effect on future fertility	If a woman uses injections, how likely is it that she will have trouble getting pregnant in the future? *(Coded as: likely to affect future fertility, unlikely to affect future fertility)*	If a woman uses implants, how likely is it that she will have trouble getting pregnant in the future? *(Coded as: likely to affect future fertility, unlikely to affect future fertility)*
Sexual pleasure for women	Do you think injections enhance or interfere with sexual pleasure for women? *(Coded as: enhances sexual pleasure, interferes with sexual pleasure)*	Do you think implants enhance or interfere with sexual pleasure for women? *(Coded as: enhances sexual pleasure, interferes with sexual pleasure)*
Sexual pleasure for men	Do you think injections enhance or interfere with sexual pleasure for men? *(Coded as: enhances sexual pleasure, interferes with sexual pleasure)*	Do you think implants enhance or interfere with sexual pleasure for men? *(Coded as: enhances sexual pleasure, interferes with sexual pleasure)*
Covert use	If you wanted to use injections, how easy or hard would they be to use without anyone knowing? *(Coded as: easy to use covertly, hard to use covertly)*	If you wanted to use implants, how easy or hard would they be to use without anyone knowing? *(Coded as: easy to use covertly, hard to use covertly)*

Continued

Table 5 continued

Question type	Injectable	Implant
Male partner support	If you wanted to use injections, how supportive or unsupportive would your partner be about your decision? *(Coded as: supportive of use, unsupportive of use)*	
Peer support	Has a friend ever recommended the use of injectables to you? *(Coded as: friend has not recommended use, friend has recommended use)*	
Social acceptability		Are implants acceptable for never-married women to use? *(Coded as: Acceptable for never married women to use, Unacceptable for never married women to use)*

Covariates. Women answered questions about their marital status, pregnancy desire, age, and number of living children. For these analyses, marital status was categorized as currently married or currently single. Pregnancy desire was coded as within the next two years, after two years, undecided, and no more ever. Age was measured as a continuous variable in years. Number of living children was measured as a continuous variable.

Analysis. Data analysis was conducted with Stata 14.1 (Statacorp, College Station, TX). Analysis was restricted to women who were between the ages of 15 and 49, were not currently pregnant, had ever had sex, and were not sterilized. Analyses for injectables was limited to women who had heard about injectables and were confident

about telling a friend about injectables (N = 415). Analyses for implants was limited to women who had heard about implants and were confident about telling a friend about implants (N = 248).

I first ran descriptive statistics to assess study participants' characteristics, including demographic information, current contraceptive use, and perceptions of barriers and facilitators to injectables and implants. I ran unadjusted logistic regression models of the association between the dichotomous barrier and facilitator items pertaining to injectables and the outcome of current injectable use. Similarly, I ran unadjusted logistic regression models of the association between the dichotomous barrier and facilitator items regarding implant use and the outcome of current implant use. I then adjusted both models for relevant demographic factors. Confounders (marital status, pregnancy desire, age, and number of living children) were included in the models through backward elimination if they were significant at the 0.05 level or they altered the coefficient of the main variables by more than 10% (Agresti, 2013). Other variables, including education, monthly household income, and frequency of sexual intercourse in the past month, were tested in the models, but made no significant contribution and were excluded. Model fit was assessed using the Hosmer-Lemeshow goodness of fit test (Hosmer, Lemeshow, & Sturdivant, 2013). I additionally used the likelihood-ratio statistic to ensure model parsimony (Agresti, 2013).

Results

Injectables. Of the 415 women included in the analysis, 234 were using the injectable (56.4%), and 181 were not using the injectable (43.6%) at the time of the

survey (Table 6). Among the women who were not using injectables, 100 women were using implants, ten were using pills, eight were using condoms, and 63 were using no modern method of contraception (not shown). On average, participants were 27 years of age, had obtained approximately six years of education, and were of low socioeconomic status. Most women had approximately three living children, and the majority were married. The primary difference between users and nonusers of the injection was marital status. A chi-square test of independence indicated that the relationship between current use of injectables and marital status was significant, $\chi^2(1, 413) = 12.03$, $p < .01$. Injectable users were more likely to be married than were nonusers.

Table 6 Selected characteristics of Malawian women aged 15-49, by current injection use, Umoyo wa Thanzi Wave 3 survey, 2016-2017
Notes: 5,000 MWK is approximately US$7. All values are percentages unless otherwise indicated. MWK=Malawian kwacha

Characteristic	All (n = 415)	Injectable Nonusers (n = 181)	Injectable Users (n = 234)
Mean age (years)	28.5	29.0	28.2
Mean yrs. of education	5.9	5.7	6.1
Mean no. living children	2.8	2.9	2.7
Monthly household income			
≤ 4,999 MWK	27.7	28.7	26.9
5,000 – 19,999 MWK	37.6	37.0	38.0
20,000 – 39,999 MWK	11.6	10.0	12.8
40,000 – 99,999 MWK	7.2	6.6	7.7
≥ 100,000 MWK	7.2	8.3	6.4
Missing	8.7	9.4	8.1
Marital status			
Married	93.3	88.4	97.0
Single	6.8	11.6	3.0
Pregnancy desires			
Within the next 2 years	14.9	17.7	12.8
After 2 years	37.6	32.6	41.5
Undecided	14.9	16.0	14.1
No more ever	32.5	33.7	31.6

We note significant differences in perceptions of injectable-specific barriers and facilitators by current injectable use (Figure 4). Two-sample tests of proportions were used to assess whether proportions in perceptions of barriers and facilitators were different for current users and nonusers at a 5% level of significance. Current nonusers of

injectables had perceived that injectables had side effects statistically significantly more often than current users of injectables (41% versus 31%). Current users of injectables had perceived their partners to be unsupportive of injectable use statistically significantly less often than current nonusers of injectables (7% versus 12%). In other words, current injectable nonusers perceived their partners as less supportive in using the injectable and perceived injectables as having side effects more often than current injectable users.

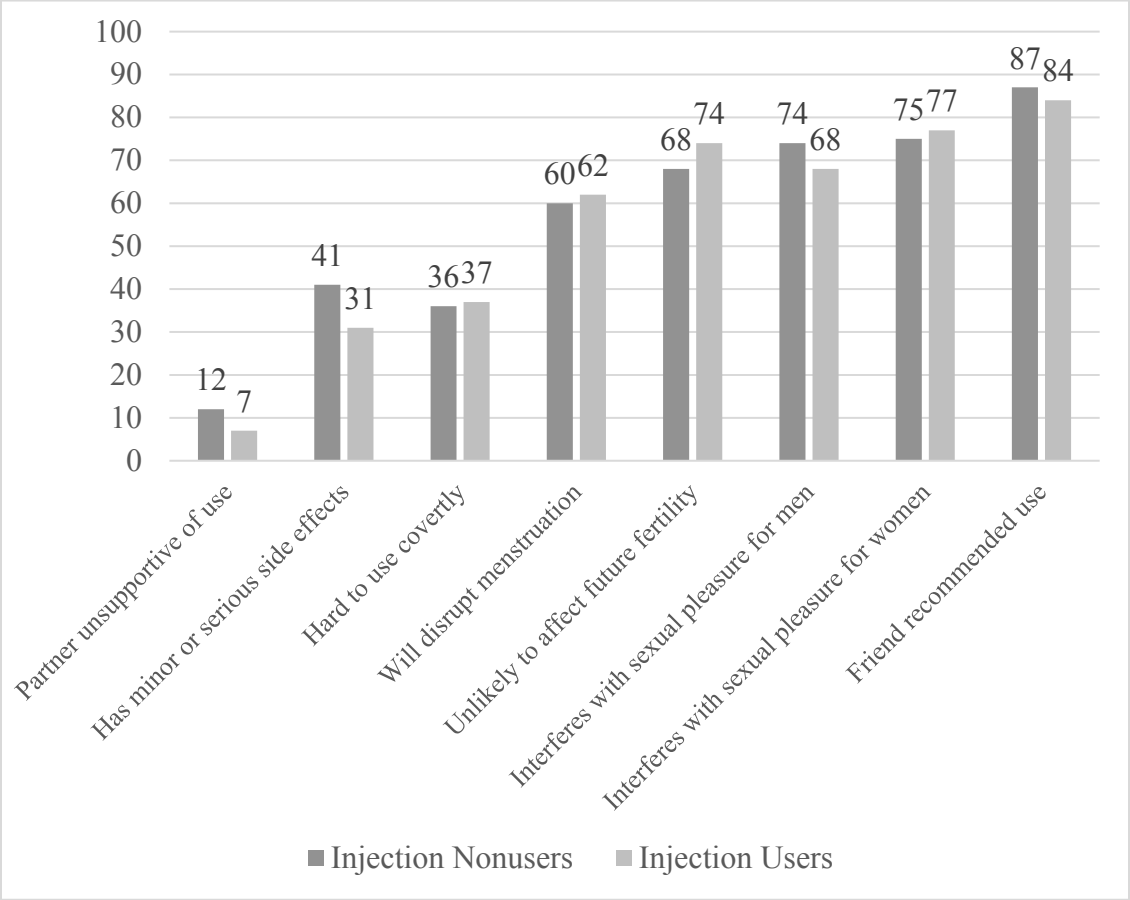


Figure 4 Barriers and facilitators to using injectables, by current injection use

In our adjusted logistic regression model that examined the relationship between injectable-specific barriers and facilitators and injectable use (Table 7), the odds of injectable use among women who perceived that injectables have minor or serious side effects were 41% less than those of women who perceived that injectables do not have side effects, OR = 0.59, 95% CI [0.37, 0.94]. The odds of injectable use were even less for women who perceived that injectables interfere with sexual pleasure for men, OR = 0.50, 95% CI [0.26, 0.99]. In contrast, the odds of injectable use among women who perceived that injectables interfered with sexual pleasure for women were more than twice those of women who perceived that injectables enhanced sexual pleasure for women or had no impact, OR = 2.07, 95% CI [1.02, 4.22]. Injectable use was positively associated with being married and desiring children after two or more years.

Table 7 Odds ratios (and 95% confidence intervals) from logistic regression analyses examining associations between selected characteristics and current use of injectables
Notes: *p<.05, **p<.01, ***p<.001.

Characteristic	Unadjusted		Adjusted	
Side effects				
Does not have side effects (ref)	1.00		1.00	
Has minor or serious side effects	0.66	(0.43,0.98)*	0.59	(0.37, 0.94)*
Disruption to menstruation				
Disrupts menstruation (ref)	1.00		1.00	
Does not disrupt menstruation	1.06	(0.71, 1.57)	1.27	(0.80, 2.00)
Effect on future fertility				
Likely to affect future fertility (ref)	1.00		1.00	
Unlikely to affect future fertility	1.31	(0.85, 2.00)	1.05	(0.66, 1.68)
Sexual pleasure for women				
Enhances or no impact (ref)	1.00		1.00	
Interferes	1.10	(0.70, 1.74)	2.07	(1.02, 4.22)*
Sexual pleasure for men				
Enhances or no impact (ref)	1.00		1.00	
Interferes	0.77	(0.50, 1.18)	0.50	(0.26, 0.99)*
Covert use				
Easy (ref)	1.00		1.00	
Hard	1.06	(0.71, 1.58)	0.93	(0.60, 1.42)
Male partner support of use				
Supportive (ref)	1.00		1.00	
Unsupportive	0.57	(0.29, 1.10)	0.65	(0.31, 1.07)
Friend recommendation of the method				
Did not recommend method (ref)	1.00		1.00	
Recommended method	0.75	(0.43, 1.31)	0.58	(0.31, 1.06)
Marital status				
Single (ref)	1.00		1.00	
Married	4.26	(1.77, 10.25)**	4.36	(1.75, 10.88)**
Pregnancy desire				
Within two years (ref)	1.00		1.00	
After two years	1.75	(0.97, 3.18)	2.11	(1.12, 3.99)*
Undecided	1.21	(0.60, 2.46)	1.58	(0.74, 3.37)
No more ever	1.29	(0.71, 2.36)	2.06	(0.99, 4.29)
Age	0.98	(0.94, 1.01)	0.82	(0.95, 1.07)
Number of living children	0.91	(0.79, 1.05)	0.84	(0.65, 1.10)

Implants. In total, 248 women were included in the analysis. Of which, 126 were using the implant (50.8%) and 122 were not using the implant (49.2%) (Table 8). Of the women who were not using implants, 84 were using injections, four were using pills, two were using condoms, and 32 were not using a modern method (not shown). On average, participants were 28 years of age, had obtained approximately six years of education, and had approximately three living children. The majority of participants made less than 19,999 MWK per month (64.9%). Most women were married and desired to delay pregnancy. We did not find any statistically significant associations between current use of implants and sociodemographic variables.

Table 8 Selected characteristics of Malawian women aged 15-49, by current implant use, Umoyo wa Thanzi Wave 3 survey, 2016-2017
Notes: 5,000 MWK is approximately US$7. All values are percentages unless otherwise indicated. MWK=Malawian kwacha

Characteristic	All (n = 248)	Implant Nonusers (n = 122)	Implant Users (n = 126)
Mean age (years)	28.2	28.8	27.6
Mean yrs. of education	5.8	5.9	5.8
Mean no. living children	2.8	2.8	2.7
Monthly household income			
≤ 4,999 MWK	26.2	20.5	31.8
5,000 – 19,999 MWK	38.7	42.6	34.9
20,000 – 39,999 MWK	10.5	11.5	9.5
40,000 – 99,999 MWK	7.3	9.0	5.6
≥ 100,000 MWK	9.3	9.0	9.5
Missing	8.1	7.4	8.7
Marital status			
Married	89.5	88.5	90.5
Single	10.5	11.5	9.5
Pregnancy desires			
Within the next 2 years	14.1	18.0	10.3
After 2 years	43.2	32.3	50.8
Undecided	14.1	14.8	13.5
No more ever	28.6	32.0	25.4

Some perceptions of implant-specific barriers and facilitators significantly varied by current use of implants (Figure 5). A larger proportion of current nonusers of implants statistically significantly perceived implants as having side effects, as compared to current users of implants (40% versus 24%). Current users of implants perceived that

implants interfered with sexual pleasure for men statistically significantly less often than current nonusers of implants (55% versus 66%). Finally, current nonusers of implants perceived that implants were unacceptable for never married women to use statistically significantly more than current users of implants (28% versus 14%). In sum, more current implant nonusers perceived implants as unacceptable for use by never married women, as interfering with sexual pleasure for men, and as having side effects than current implants users.

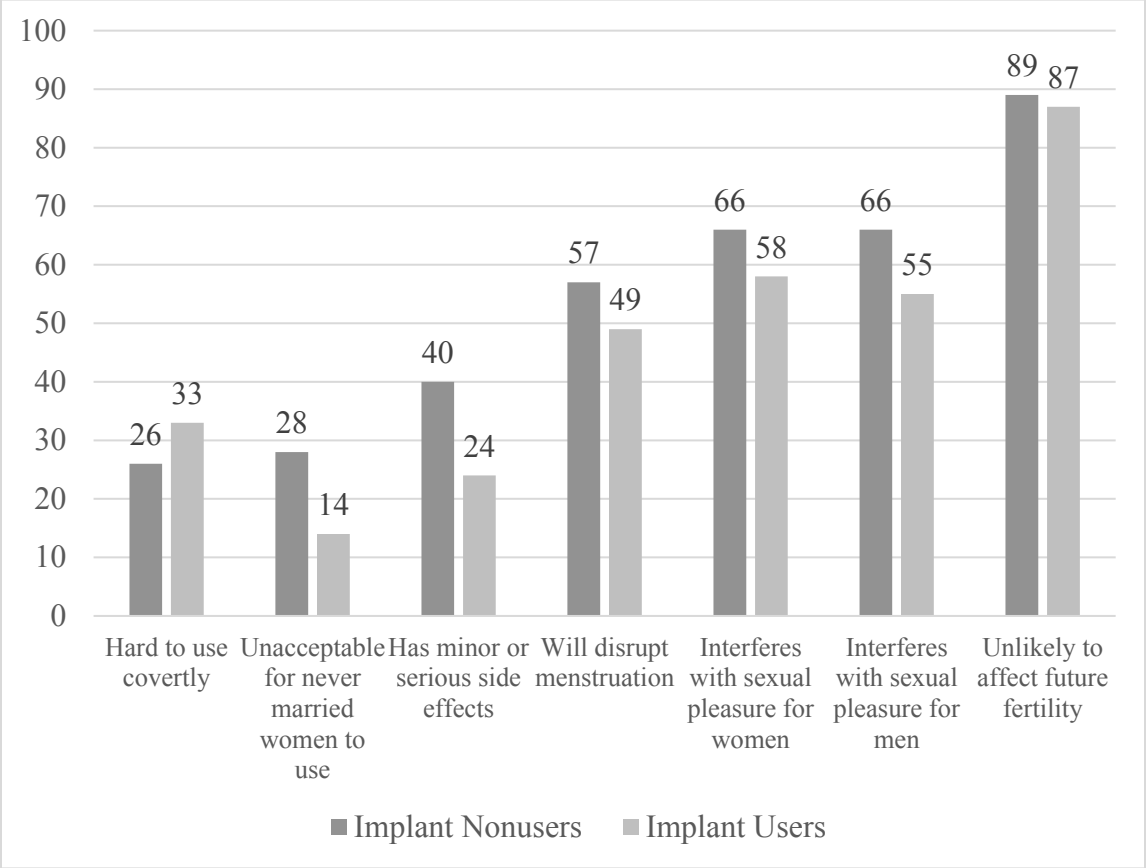


Figure 5 Barriers and facilitators to using implants, by current implant use

In our adjusted logistic regression model that examined the relationship between implant-specific barriers and facilitators and implant use (Table 7), the odds of injectable use among women who perceived that implants have minor or serious side effects were 54% less than those of women who perceived that implants do not have side effects, OR = 0.46, 95% CI [0.25, 0.87]. The odds of implant use were 62% less for women who perceived that implants were unacceptable for use by never married women, as compared

to women who perceived that implants were acceptable, OR = 0.38, 95% CI [0.19, 0.76]. Implant use was positively associated with desiring children after two or more years.

Table 9 Odds ratios (and 95% confidence intervals) from logistic regression analyses examining associations between selected characteristics and current use of implants
Notes: *p<.05, **p<.01, ***p<.001.

Characteristic	Unadjusted		Adjusted	
Side effects				
Does not have side effects (ref)	1.00		1.00	
Has minor or serious side effects	0.47	(0.27,0.80)**	0.46	(0.25, 0.87)*
Disruption to menstruation				
Disrupts menstruation (ref)	1.00		1.00	
Does not disrupt menstruation	0.72	(0.44, 1.19)	0.75	(0.42, 1.33)
Effect on future fertility				
Likely to affect (ref)	1.00		1.00	
Unlikely to affect	0.89	(0.41, 1.91)	0.57	(0.24, 1.34)
Sexual pleasure for women				
Enhances or no impact (ref)	1.00		1.00	
Interferes	0.70	(0.42, 1.17)	0.86	(0.31, 2.42)
Sexual pleasure for men				
Enhances or no impact (ref)	1.00		1.00	
Interferes	0.64	(0.38, 1.06)	0.73	(0.26, 2.04)
Covert use				
Easy (ref)	1.00		1.00	
Hard	1.36	(0.78, 2.35)	1.28	(0.70, 2.35)
Acceptability for never married women				
Acceptable (ref)	1.00		1.00	
Unacceptable	0.43	(0.29, 0.82)	0.38	(0.19, 0.76)**
Marital status				
Single (ref)	1.00		1.00	
Married	1.23	(0.55, 2.78)	1.35	(0.54, 3.36)
Pregnancy desire				
Within two years (ref)	1.00		1.00	
After two years	2.52	(1.15, 5.53)*	2.78	(1.18, 6.57)*
Undecided	1.60	(0.62, 4.15)	1.80	(0.62, 5.22)
No more ever	1.39	(0.61, 3.18)	1.63	(0.59, 4.45)
Age	0.96	(0.92, 1.00)	0.95	(0.88, 1.03)
Number of living children	0.96	(0.80, 1.15)	1.11	(0.79, 1.57)

Discussion

Women's perceptions of method-related side effects were a primary correlate of method-specific contraceptive use for both injectables and implants. We also found that social acceptability for never married women was important for use of the implant, and perceptions of interference with sexual pleasure for both men and women were important for use of the injectable. The study provides insight into the factors that may distinguish a contraceptive user from a nonuser by method type, and highlights the barriers that may significantly contribute to contraceptive nonuse.

We found that perceptions of method-related side effects are a key barrier to using the injectable and implant. These findings are supported by the 2010 Malawi DHS in which 24% of women with unmet need cited concerns about health risks or side effects as reasons for not using modern contraception (Sedgh et al., 2016). We cannot make conclusions about the specific side effects and health risks that are of greatest concern to women in our study. Past qualitative research suggests that women have concerns about disruption to regular, monthly menstruation or that contraception will cause future temporary or permanent infertility (Burke & Ambasa-Shisanya, 2011; Castle, 2003; Chipeta et al., 2010; Diamond-Smith et al., 2012; Garcia & Snow, 1997; Hindin et al., 2014; Nalwadda et al., 2010; Ochako et al., 2015). However, we included variables measuring these concerns in both models and found no such empirical association between concerns about disruption to menstruation or effect on future fertility and current method-specific contraceptive use. Understanding the relationship between method-specific contraceptive use and specific side effects (e.g., dizziness, nausea, weight

gain/loss) will help researchers and practitioners better identify women who are at risk of unmet need.

We found that women who perceived injectables to interfere with sexual pleasure for men were less likely to use injectables than women who perceived that injectables enhanced sexual pleasure for men. Yet, this association was not significant for implant use. We are surprised that perceptions of a partner's sexual pleasure matter for use of one method and not the other. Women who use hormonal methods may be more likely to attribute negative sexual changes to their contraceptive methods rather than other external factors, such as relationship issues (J. A. Higgins & Davis, 2014). Given that the sexual acceptability of modern contraception is severely understudied (J. A. Higgins & Smith, 2016), we speculate that it may be factors related to differences in women's relationships with their partner (e.g., relationship quality or communication about sex and family planning) that could be driving differences in these associations.

We also found a significant association between injectable use and perceptions of sexual pleasure for women. Higgins and Smith (2016) found in a systematic review that women often try to maximize their partner's pleasure rather than their own during contraceptive decision making. It may be that women's perceptions of sexual pleasure for themselves are based on their current experiences, but perceptions of male sexual pleasure are prioritized. In other words, current users of injectables may be experiencing reduced sexual pleasure, but may continue to use injectables if they prioritize their male partner's pleasure. Further, differences between the injectable and implant are less surprising regarding perceptions of women's sexual pleasure, and may be attributed to

different bleeding patterns, hormonal changes, or other indirect factors that occur with use of different hormonal methods (J. A. Higgins & Davis, 2014)

We found that perceptions of unacceptability of the implant for never married women were significantly associated with implant nonuse. Never married women often cite their non-married status as a reason for not using modern contraception for several reasons: (a) they may think they are not having sex regularly enough to warrant contraceptive use; (b) believe it is socially unacceptable to seek contraceptive use before marriage; or (c) perceive that service providers will deny some or all methods to unmarried women (Sedgh et al., 2016). The majority of women in our study were married and all women in our study were sexually active. It may be that women in our study believe that implants are socially unacceptable to use before marriage, or unmarried women may face biases from health care providers in obtaining implants.

Limitations. Our study is the first, to our knowledge, to use these method-specific barrier and facilitator questions in the Malawian context. As such, we ensured accurate cultural interpretation and linguistic translation of the survey items through a comprehensive, collaborative, and detailed translation process. Future use of the measures would provide additional insight into their utility in Malawi and in other countries in Sub-Saharan Africa. Our findings may not be generalizable beyond reproductive aged women who live in a rural area, sexually active, and have used contraception once in their lives. Although millions of women across Sub-Saharan Africa and other developing countries fit this profile. For the two analyses, we limited our sample to women who had heard of the methods and were confident in telling a friend

about the methods. Thus, we cannot know how informational barriers influence injectable and implant use in this population of women. Due to our survey procedures, women who answered the injectable-specific questions and implant-specific questions may have more correct knowledge about these methods. In other words, the women that did not receive these questions could perceive methods more negatively, but we excluded them from providing a response. The women in our study all lived within close proximity (approximately 20 kilometers) to a local, rural hospital which regularly engages in community outreach and education. Thus, our study participants may have more favorable perceptions of modern contraception because they may be more exposed to positive messaging. Our measures should be tested in other Malawian populations and settings to gain a better understanding of women's perspectives.

Furthermore, we did not include men's perceptions of barriers and facilitators in this analysis. Male partners influence fertility and contraceptive behaviors in developing regions (e.g., Esber, Foraker, Hemed, & Norris, 2014; Fennell, 2011; Gipson et al., 2010). Inclusion of men's perceptions of method-specific barriers and facilitators may provide a better understanding about their relationship to method-specific use, and how couples negotiate their individual perspectives within a dyad. Finally, our study design was cross-sectional, and we cannot determine causal relationships. Women's perspectives of modern methods may change as women are exposed to health campaigns and other intervention efforts, as women learn about or use certain methods, or as women experience changes in their lives (e.g., get married, begin childbearing). Longitudinal

studies are needed to determine if perceptions of barriers and facilitators influence contraceptive and fertility outcomes.

Conclusion. The primary aim of population policies and family planning programs is to meet the demand for modern contraception. This analysis highlights the importance of examining method-specific barriers and benefits to common types of contraception, as differences and similarities between predictive factors of injectables versus implants were determined. Understanding how method-specific barriers and benefits influence intentions to use certain methods or discontinue certain methods should be also be examined. Policies and programs may be more effective if they acknowledge the barriers to each method of contraception, and offer family planning messages and interventions that are tailored to those perceptions.

Chapter 7. Conclusions

This is the first study that has sought to measure and evaluate method-specific barriers and facilitators to modern methods in a rural setting within Sub-Saharan Africa. Throughout the dissertation, method-specific barriers and facilitators were explored across many dimensions: access, health, social and relational contexts. As the study was exploratory in nature, given the previous lack of emphasis on method-specific barriers and facilitators in the family planning literature, the findings generated new information about why women and men may not be able to utilize available modern contraceptive methods and why women and men may be motivated to use specific methods. In this chapter, a synthesis of major findings which were similar across the chapters are presented. This chapter concludes by identifying the major limitations of the study and pathways for future research endeavors.

Synthesis

The results of this study contribute to the knowledge about perceived barriers and facilitators to modern contraceptive methods in Malawi. Conclusions specific to each analyses were presented at the culmination of each chapter; the concluding synthesis provides key reflections related to the overarching findings of all analyses. First, the study sheds light on the prominent role of *sexual acceptability* in contraceptive decision

making from the view of men (as highlighted in Chapter Four) and of women (highlighted in Chapters Four, Five, and Six). Second, the study reinforced the complex *role of men* as both a facilitator and barrier to contraceptive use. Finally, the study highlighted the complicated nature of the "accessibility" of contraception which may be more difficult for particular groups of women – that is, *unmarried and/or adolescent women*.

Sexual acceptability. The prominent role of sexuality acceptability in family planning decisions was one of the themes that frequently arose throughout this research. In general, sexuality (in particular, women's sexuality) has been disassociated with family planning use even though contraception is inherently sexual, as some scholars argue (Higgins & Smith, 2016; Higgins & Hirsch, 2007). Sexually acceptability of contraception should not be understood simply as the *user's sexual functioning* (J. A. Higgins & Davis, 2014; Manuel, 2013; Puts & Pope, 2013), but also as the *couple's sexual experiences* which are nested within social arrangements (e.g., marital roles and cultural norms). I found that this relational and social aspect is important to consider in the Malawian context with regards to contraceptive use, because women may not make contraceptive decisions on the basis of their own sexual desires or pleasure but also in consideration of their male partner's sexual pleasure and in accordance with socially accepted sexual scripts.

The scope of research on the sexual acceptability of contraception should be expanded to include measures on relational aspects of sexuality, given the dissertation findings and the previous lack of attention to partner-specific aspects of sexuality in the

family planning literature. For example, as presented in Chapter Six, women who perceived that injectables interfered with male sexual pleasure were 50% less likely to be using injectables, but women who perceived that injectables interfered with female sexual pleasure were more than twice as likely to be using injectables. Although, I note that the same was not true for implants. However, differences in findings may be attributed to the fact that there are no validated, and possibly more appropriate, measures of partner sexual acceptability in the literature which could have been adapted for the study. Examining sexual acceptability through a dyadic lens in future research may not only improve our understanding of method-specific barriers and facilitators, but also improve our understanding of *how* contraceptive decisions are influence by sexual acceptability more broadly.

The findings from the dissertation regarding sexual acceptability contribute to the strengthening and growth of a novel conceptual model of the sexual acceptability of contraception proposed by Higgins and Smith (2016). In this framework (Figure 6), not only are women's individual factors, such as sexual preferences, acknowledged, but also relationship factors are highly emphasized. Relationship factors include sexual communication, motivations for sexual activity, relationship type, and concern for partner's pleasure. The qualitative findings in Chapter Four provide evidence on women's and men's motivations for sexual activity and concern for partner's pleasure and functioning. For example, participants linked condom use with mistrust and extramarital affairs suggesting that certain types of contraceptive use can undermine partner bonding and intimacy. On the other hand, other types of contraceptive use, such

as injectable use, which can be used before sexual experiences were reported to allow sex to occur in a more acceptable manner. In addition, Chapters Five and Six support and highlight the importance women place on maximizing men's sexual pleasure suggesting women may not acknowledge or perceive their own right to sexual pleasure in this context. Thus, Malawian women may make family planning decisions that minimize the perceived negative sexual effects on men, rather than on themselves. The global family planning literature, and the literature regarding barriers and facilitators, would benefit from an integration of the Higgins and Smith (2016) framework into existing and future research.

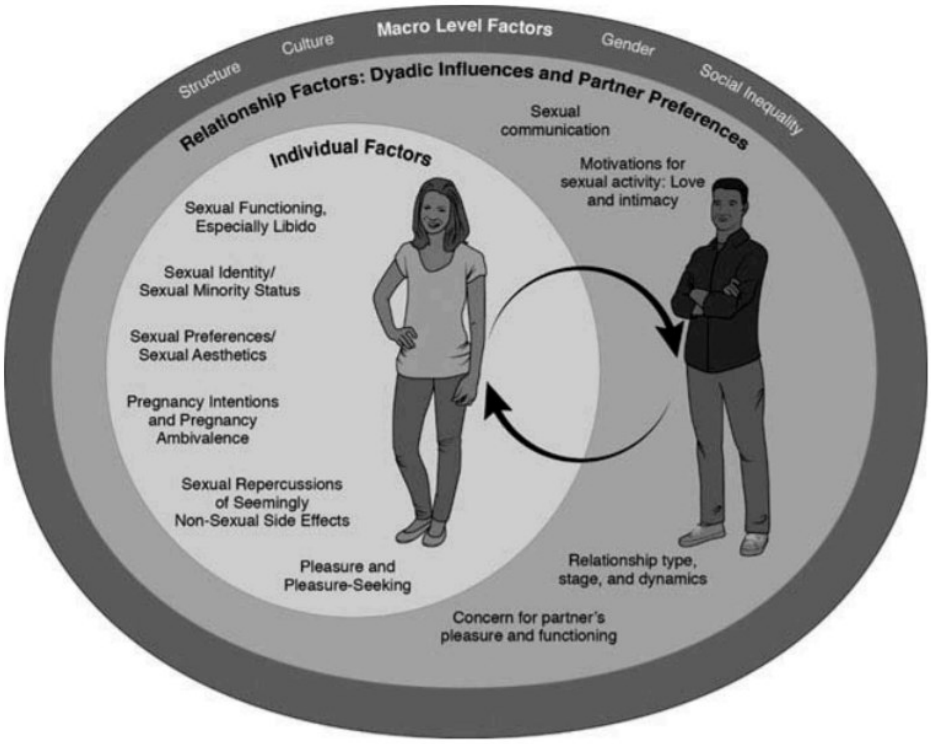


Figure 6 Conceptual model of the sexual acceptability of contraception as conceptualized, defined, and illustrated in Higgins and Smith (2016)

Role of men. The important role of men in women's contraceptive use was another prominent theme that stood out in the dissertation findings. As discussed above, concern for men's sexual pleasure was critical in contraceptive decision making. Beyond sexual acceptability, men's approval of contraception and of their perceived support for contraceptive use by their female partners stood out as both key barriers and facilitators in the findings presented in Chapter Four. In contrast, men's approval was not

significantly associated with method-specific contraceptive use in Chapter Six. The dyadic processes that drive contraceptive use in non-Western settings are not well understood. Given the conflicting dissertation findings, a better understanding of these processes (e.g., couple's communication, decision making, negotiations and tradeoffs) would help researchers to understand not only how involved men should be in future interventions, but also work to expand and better conceptualize theories regarding the interaction between two individuals' attitudes and beliefs (which are not addressed in common public health theories, such as the Health Belief Model and Theory of Planned Behavior).

A couple focus may be more appropriate in family planning research, and in research regarding barriers and facilitators to contraceptive use. In the dissertation, I extended prior research through the incorporation of men's view of barriers and facilitators in Chapter Four. However, men were excluded from the quantitative analyses. To determine whether perceptions of barriers and facilitators are gendered and whether men's perceptions are significantly related to women's self-reports of contraception, I will include men in a future analysis to better understand and disentangle the findings.

Unmarried and/or adolescent women and access. The accessibility of contraceptive methods for adolescent and/or unmarried women and the social acceptability of contraception for these groups of women was a key theme throughout the dissertation chapters. As noted in all chapters, women, in general, did not report that modern contraception was inaccessible, and there was a general sense that awareness of contraception was high. However, in the qualitative findings, it was clear that the same

was not true for unmarried women (who are primarily adolescents). Participants reported that unmarried and/or adolescent women struggle to access contraception from health care facilities and face other prominent barriers (e.g., social stigmatization) that limit their ability to use contraception even when they do not desire a pregnancy. These findings were supported in the quantitative findings in that women who perceived that implants were unacceptable for use for never married women were about 60% less likely to be using implants. The findings support qualitative research conducted in Sub-Saharan Africa which concludes that the inaccessibility contraceptive methods for adolescents and unmarried women and social unacceptability are key barriers (Chandra-Mouli, McCarraher, Phillips, Williamson, & Hainsworth, 2014).

Although it is well recognized in the family planning literature that unmarried and adolescent women experience higher rates of unmet need for contraception, unintended pregnancy, and maternal death, few interventions have been successfully developed and implemented that address barriers to contraception for these women (Chandra-Mouli et al., 2014). The dissertation did not specifically investigate unmarried and adolescent women's perceptions, but family planning research would benefit from a more in-depth study of the desire to use contraception and avoid pregnancy and barriers and facilitators among this group of women. Further, addressing accessibility of contraception for unmarried and adolescent women is a first step, but for these groups of women to successfully initiate and sustain use of contraception, interventions must be developed that effectively reduce social stigma of non-marital sexual activity and contraceptive use.

Conclusions and Future Research

Until the nuances of the mechanisms that serve as barriers to modern contraceptive use, and the factors that motivate women to begin and sustain use, are better understood, any policy or intervention to address them may be ineffective. This is problematic as contraceptive use is associated with a wide-range of benefits, including avoiding the adverse effects of unintended pregnancy. The dissertation represents one effort to understand why women and couples use or do not use contraceptive methods, given that they have a desire to avoid pregnancy. However, it is not meant to be interpreted as a singular study through which barriers to contraception in rural Sub-Saharan Africa have been definitely identified, nor conclusively addressed. Rather, the dissertation represents an attempt to fill a much needed gap in the family planning literature within the cultural context of rural Malawi. Without a doubt, more work is needed to achieve a holistic understanding of the possible factors that prevent Malawian women from achieving their reproductive goals.

Future research should directed in three areas: improving survey measures and administration, expanding the applicability of the measures to other settings, and administration of the measures in different context. I partially derived the method-specific barrier and facilitator items from the analysis of secondary, qualitative data presented in Chapter Four to ensure the cultural appropriateness and regional applicability of the measures. The dissertation was the first to use these measures and quantitatively identify and describe method-specific factors, a significant contribution to the family planning literature. However, the results of the analysis were surprising in that

I expected more variation in women's responses to key items (such as, side effects, covert use, social acceptability for married women, and disruption to menstruation) given how women qualitatively described these barriers. I posit that some items may have been interpreted as hypothetical or as a test of knowledge, and women may have not understood that the questions were directed at their own experience. Given the findings, I revised certain method-specific items for additional testing in the UTHA wave four survey, which is currently underway. For instance, I revised the item regarding pregnancy prevention from, "How effective or ineffective are (METHOD) at preventing pregnancy?" to, "Do you think (METHOD) are very effective, somewhat effective, somewhat ineffective, or very ineffective at preventing pregnancy?" I will compare the results of these new measures to the ones presented here, and use the measures to assess similar outcomes. Finally, permanent methods of contraception need consideration in future analyses. The popularity of tubal ligation is increasing across Malawi; understanding the benefits to this method could be beneficial in additional promotion efforts.

In addition to improving the measures, the administration of the items needs additional consideration. As noted in previous chapters, women were asked the method-specific questions only if they had knowledge of the method prior to the survey and were confident that they could tell a friend about the method. This administration procedure was meant to increase the efficiency of the survey, but it may have excluded women who were less familiar with contraceptive methods. In the wave four survey, women are instead asked the method-specific items only if they had prior knowledge of the method.

It is my hypothesis that this will help achieve better variation in responses. Future research using these items also needs to consider the potential interviewer and participant burden in answering this extensive set of questions.

An additional next step in this research is to expand the applicability of the measures and test these items in other settings. Of importance is testing the method-specific barriers and facilitators measures in other rural settings in Malawi in which women and men may not have access to local hospitals, clinics, or family planning services. Women in the UTHA cohort may have more knowledge of methods and positive attitudes of contraception, as reflected in the high prevalence of modern methods in the sample and low levels of unmet need for modern contraception. Additionally, future studies should work to test these measures in adolescent and unmarried populations of women. In the UTHA wave four survey, the research team cannot test these measures in other settings, but UTHA is opening enrollment into the cohort with the hopes of recruiting a more diverse sample which will include adolescent women.

In sum, the high levels of unmet need for modern contraception among Malawian women is a major public health concern. While previous national and local family planning programs have expanded access to modern methods, women may face other barriers in using and sustaining contraception. Findings from several qualitative studies suggest that some barriers and benefits to contraceptive methods may be more method-specific, than general. However, no quantitative studies had systematically investigated whether barriers and benefits could be method-specific and, if so, whether method-specific barriers and facilitators would be significant predictors of method-specific use.

The results presented in the dissertation provide evidence on the possible method-specific barriers and benefits to five types of contraceptive methods, developed and supported by qualitative data. The dissertation also provides evidence on the relationship between method-specific barriers and benefits and method-specific use of the two most common methods in Malawi, implants and injectables. Identifying modifiable risk factors for contraceptive nonuse is a prominent objective within the field of family planning research. Understanding women's perceptions of method-specific barriers and facilitators can aid in the development of effective and evidence-based programs to reduce the high burden of unmet need (and subsequent unintended pregnancy) in high-fertility settings.

References

Agresti, A. (2013). *Categorical data analysis* (3rd ed). Hoboken, NJ: Wiley.

Ali, M., Cleland, J., & Shah, I. H. (2012). *Causes and consequences of contraceptive discontinuation: Evidence from 60 Demographic and Health Surveys*. Geneva, Switzerland: World Health Organization. Retrieved from http://apps.who.int/iris/bitstream/10665/75429/1/9789241504058_eng.pdf?ua=1

Alkema, L., Kantorova, V., Menozzi, C., & Biddlecom, A. (2013). National, regional, and global rates and trends in contraceptive prevalence and unmet need for family planning between 1990 and 2015: A systematic and comprehensive analysis. *The Lancet*, *381*(9878), 1642–1652. https://doi.org/10.1016/S0140-6736(12)62204-1

Ayaz, S., & Efe, Ş. Y. (2009). Family planning attitudes of women and affecting factors. *Journal of the Turkish German Gynecological Association*, *10*(3), 137–141.

Baiden, F., Mensah, G. P., Akoto, N. O., Delvaux, T., & Appiah, P. C. (2016). Covert contraceptive use among women attending a reproductive health clinic in a municipality in Ghana. *BMC Women's Health*, *16*(31).

Barber, J., Axinn, W., & Thornton, A. (1999). Unwanted childbearing, health, and mother-child relationships. *Journal of Health and Social Behavior*, *40*(3), 231–257.

Barden-O'Fallon, J. (2005). Unmet fertility expectations and the perception of fertility problems in a Malawian village. *African Journal of Reproductive Health*, *9*(2), 14–25.

Barden-O'Fallon, J. (2017). Availability of family planning services and quality of counseling by faith-based organizations: A three country comparative analysis. *Reproductive Health*, *14*(1). https://doi.org/10.1186/s12978-017-0317-2

Bawah, A. (2002). Spousal communication and family planning behavior in Navrongo: A longitudinal assessment. *Studies in Family Planning*, *33*(2), 185–194.

Bawah, A. A., Akweongo, P., Simmons, R., & Phillips, J. F. (1999). Women's fears and men's anxieties: The impact of family planning on gender relations in northern Ghana. *Studies in Family Planning*, *30*(1), 54–66.

Biddlecom, A. E., & Fapohunda, B. M. (1998). Covert contraceptive use: Prevalence, motivations, and consequences. *Studies in Family Planning*, *29*(4), 360–372. https://doi.org/10.2307/172249

Bisika, T. (2008). Cultural factors that affect sexual and reproductive health in Malawi. *The Journal of Family Planning and Reproductive Health Care*, *34*(2), 79–80.

Bongaarts, J. (2011). Can family planning programs reduce high desired family size in Sub-Saharan Africa? *International Perspectives on Sexual & Reproductive Health*, *37*(4), 209–216.

Bongaarts, J. (2014). The impact of family planning programs on unmet need and demand for contraception. *Studies in Family Planning*, *45*(2), 247–262. https://doi.org/10.1111/j.1728-4465.2014.00387.x

Bongaarts, J., & Bruce, J. (1995). The causes of unmet need for contraception and the social content of services. *Studies in Family Planning*, *26*(2), 57–75. https://doi.org/10.2307/2137932

Bongaarts, J., Cleland, J., Townsend, J., Bertrand, J., & Das Gupta, M. (2012). *Family planning programs for the 21st century: Rational and design*. New York, NY: Population Council. Retrieved from https://www.popcouncil.org/uploads/pdfs/2012_FPfor21stCentury.pdf

Bradley, S. E. K., Croft, T. N., Fishel, J. D., & Westoff, C. F. (2012). Revising unmet need for family planning. Retrieved December 2, 2015, from http://dhsprogram.com/publications/publication-as25-analytical-studies.cfm

Bradley, S. E. K., Schwandt, H. M., & Khan, S. (2009). Levels, trends, and reasons for contraceptive discontinuation. Retrieved from http://dhsprogram.com/publications/publication-as20-analytical-studies.cfm

Brislin, R. W. (1970). Back-translation for cross-cultural research. *Journal of Cross-Cultural Psychology*, *1*(3), 185–216.

Bryant, A. G., Hamela, G., Gotter, A., Stuart, G. S., & Kamanga, G. (2015). Reasons for intrauterine device use, discontinuation and non-use in Malawi: A qualitative study of women and their partners. *African Journal of Reproductive Health*, *19*(4), 50–57.

Burke, H. M., & Ambasa-Shisanya, C. (2011). Qualitative study of reasons for discontinuation of injectable contraceptives among users and salient reference groups in Kenya. *African Journal of Reproductive Health*, *15*(2), 67–78.

Campbell, M., Sahin-Hodoglugil, N. N., & Potts, M. (2006). Barriers to fertility regulation: A review of the literature. *Studies in Family Planning*, *37*(2), 87–98.

Canning, D., & Schultz, T. P. (2012). The economic consequences of reproductive health and family planning. *The Lancet*, *380*(9837), 165–171. https://doi.org/10.1016/S0140-6736(12)60827-7

Casterline, J. B., & El-Zeini, L. O. (2014). Unmet need and fertility decline: A comparative perspective on prospects in sub-Saharan Africa. *Studies in Family Planning*, *45*(2), 227–245. https://doi.org/10.1111/j.1728-4465.2014.00386.x

Casterline, J. B., Perez, A. E., & Biddlecom, A. E. (1997). Factors underlying unmet need for family planning in the Philippines. *Studies in Family Planning*, *28*(3), 173–191.

Casterline, J. B., Sathar, Z. A., & ul Haque, M. (2001). Obstacles to contraceptive use in Pakistan: A study in Punjab. *Studies in Family Planning*, *32*(2), 95–110.

Casterline, J. B., & Sinding, S. W. (2000). Unmet need for family planning in developing countries and implications for population policy. *Population and Development Review*, *26*(4), 691–723.

Castle, S. (2003). Factors influencing young Malians' reluctance to use hormonal contraceptives. *Studies in Family Planning*, *34*(3), 186–199.

C-Change. (2012). *Barriers to family planning use in Malawi: Opportunities for social and behavior change communication*. Washington, D.C.: C-Change and USAID. Retrieved from https://c-changeprogram.org/sites/default/files/Barriers-to-Family-Planning-Use-Malawi.pdf

Chandra-Mouli, V., McCarraher, D., Phillips, S., Williamson, N., & Hainsworth, G. (2014). Contraception for adolescents in low and middle income countries: needs, barriers, and access. *Reproductive Health*, *11*(1), 1–8.

Cheng, D., Schwarz, E. B., Douglas, E., & Horon, I. (2009). Unintended pregnancy and associated maternal preconception, prenatal and postpartum behaviors. *Contraception*, *79*(3), 194–198. https://doi.org/10.1016/j.contraception.2008.09.009

Chimbwete, C., Watkins, S., & Zulu, E. (2005). The evolution of population policies in Kenya and Malawi. *Population Research & Policy Review*, *24*(1), 85–106. https://doi.org/10.1007/s11113-005-0328-5

Chipeta, E. K., Chimwaza, W., & Kalilani-Phiri, L. (2010). Contraceptive knowledge, beliefs and attitudes in rural Malawi: Misinformation, misbeliefs and misperceptions. *Malawi Medical Journal: The Journal of Medical Association of Malawi*, *22*(2), 38–41.

Cleland, J., Bernstein, S., Ezeh, A., Faundes, A., Glasier, A., & Innis, J. (2006). Family planning: the unfinished agenda. *The Lancet*, *368*(9549), 1810–1827. https://doi.org/10.1016/S0140-6736(06)69480-4

Cleland, J., Conde-Agudelo, A., Peterson, H., Ross, J., & Tsui, A. (2012). Contraception and health. *The Lancet*, *380*(9837), 149–156. https://doi.org/10.1016/S0140-6736(12)60609-6

Cleland, J., Harbison, S., & Shah, I. H. (2014). Unmet need for contraception: Issues and challenges. *Studies in Family Planning*, *45*(2), 105–122. https://doi.org/10.1111/j.1728-4465.2014.00380.x

Corbin, J., & Strauss, A. (2008). *Basics of Qualitative Research (3rd ed.): Techniques and Procedures for Developing Grounded Theory*. 2455 Teller Road, Thousand Oaks California 91320 United States: SAGE Publications, Inc. https://doi.org/10.4135/9781452230153

Creswell, J. W. (2014). *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches* (4th ed.). Sage Publications, INC.

Darraoch, J. E., Sedgh, G., & Ball, H. (2011). *Contraceptive technologies: Responding to women's needs*. Guttmacher Institute. Retrieved from https://www.guttmacher.org/sites/default/files/report_pdf/contraceptive-technologies.pdf

Darroch, J. E., & Singh, S. (2013). Trends in contraceptive need and use in developing countries in 2003, 2008, and 2012: An analysis of national surveys. *Lancet*, *381*, 1756–1762.

DeVellis, R. F. (2012). *Scale development: theory and applications* (3rd ed). Thousand Oaks, Calif: SAGE.

Diamond-Smith, N., Campbell, M., & Madan, S. (2012). Misinformation and fear of side-effects of family planning. *Culture, Health & Sexuality*, *14*(4), 421–433. https://doi.org/10.1080/13691058.2012.664659

Dibaba, Y., Fantahun, M., & Hindin, M. J. (2013). The association of unwanted pregnancy and social support with depressive symptoms in pregnancy: Evidence from rural Southwestern Ethiopia. *BMC Pregnancy and Childbirth*, *13*, 135. https://doi.org/10.1186/1471-2393-13-135

Easterlin, R. A. (1975). An economic framework for fertility analysis. *Studies in Family Planning*, *6*(3), 54–63. https://doi.org/10.2307/1964934

Egarter, C., Tirri, B. F., Bitzer, J., Kaminskyy, V., Oddens, B. J., Prilepskaya, V., … Weyers, S. (2013). Women's perceptions and reasons for choosing the pill, patch, or ring in the CHOICE study: A cross-sectional survey of contraceptive method selection after counseling. *BMC Women's Health*, *13*(9), 1–14. https://doi.org/10.1186/1472-6874-13-9

Esber, A., Foraker, R. E., Hemed, M., & Norris, A. (2014). Partner approval and intention to use contraception among Zanzibari women presenting for post-abortion care. *Contraception*, *90*(1), 23–28. https://doi.org/10.1016/j.contraception.2014.03.006

Fennell, J. L. (2011). Men bring condoms, women take pills: Men's and women's roles in contraceptive decision making. *Gender & Society*, *25*(4), 496–521. https://doi.org/10.1177/0891243211416113

Fisher, A. A. (1977). The health belief model and contraceptive behavior: Limits to the application of a conceptual framework. *Health Education Monographs*, *5*(3), 244–250. https://doi.org/10.1177/109019817700500305

Fleming, K. L., Sokoloff, A., & Raine, T. R. (2010). Attitudes and beliefs about the intrauterine device among teenagers and young women. *Contraception*, *82*(2), 178–182. https://doi.org/10.1016/j.contraception.2010.02.020

Garcia, S. G., & Snow, R. (1997). Preferences for contraceptive attributes: Voices of women in Ciudad Juarez, Mexico. *International Family Planning Perspectives*, *23*(2), 52.

Garver, S. E. (2014). *Contraceptive use and the pursuit of education and marriage: An adolescent dilemma in rural Malawi*. The Ohio State University. Retrieved from https://etd.ohiolink.edu/!etd.send_file?accession=osu1406045107&disposition=inline

Gebreselassie, T., Bietsch, K., Staveteig, S., & Pullum, T. (2017). *Trends, determinants, and dynamics of traditional contraceptive method use* (DHS Analytical Studies No. 63). Rockville, Maryland, USA: ICF. Retrieved from https://dhsprogram.com/pubs/pdf/AS63/AS63.pdf

Gipson, J. D., Koenig, M. A., & Hindin, M. J. (2008). The effects of unintended pregnancy on infant, child, and parental health: a review of the literature. *Studies In Family Planning*, *39*(1), 18–38.

Gipson, J. D., Muntifering, C. J., Chauwa, F. K., Taulo, F., Tsui, A. O., & Hindin, M. J. (2010). Assessing the importance of gender roles in couples' home-based sexual health services in Malawi. *African Journal Of Reproductive Health*, *14*(4 Spec no.), 61–71.

Gomez, A. M., & Clark, J. B. (2014). The relationship between contraceptive features preferred by young women and interest in IUDs: An exploratory analysis. *Perspectives on Sexual and Reproductive Health*, *46*(3), 157–163. https://doi.org/10.1363/46e2014

Government of Malawi. (2012). *National Population Policy*. Lilongwe, Malawi: Government of Malawi, Ministory of Economic Planning and Development. Retrieved from http://populationmalawi.org/wp1/wp-content/uploads/2014/04/Malawi-National-Population-Policy-2012.pdf

Gueye, A., Speizer, I. S., Corroon, M., & Okigbo, C. C. (2015). Belief in family planning myths at the individual and community levels and modern contracceptive use in urban Africa. *International Perspectives on Sexual and Reproductive Health*, *41*(4), 191–199.

Gupta, N., Katende, C., & Bessinger, R. (2003). Associations of mass media exposure with family planning attitudes and practices in Uganda. *Studies in Family Planning*, *34*(1), 19–31.

Guttmacher Institute. (2014). Benefits of meeting the contraceptive needs of malawian women. Retrieved December 1, 2015, from http://www.guttmacher.org/pubs/IB-Malawi.html

Guttmacher Institute. (2017). *Adding it up: Investing in Contraception and Maternal and Newborn Health, 2017*.

Hall, K. S. (2012). The health belief model can guide modern contraceptive behavior research and practice. *Journal of Midwifery & Women's Health*, *57*(1), 74–81. https://doi.org/10.1111/j.1542-2011.2011.00110.x

Hall, M. A. K., Stephenson, R. B., & Juvekar, S. (2008). Social and logistical barriers to the use of reversible contraception among women in a rural Indian village. *Journal of Health, Population and Nutrition*, *26*(2), 241–250.

Hartmann, M., Gilles, K., Shattuck, D., Kerner, B., & Guest, G. (2012). Changes in couples' communication as a result of a male-involvement family planning intervention. *Journal of Health Communication*, *17*(7), 802–819. https://doi.org/10.1080/10810730.2011.650825

Herd, P., Higgins, J., Sicinski, K., & Merkurieva, I. (2016). The implications of unintended pregnancies for mental health in later life. *American Journal of Public Health*, *106*(3), 421–429.

Higgins, J. A., & Davis, A. R. (2014). Contraceptive sex acceptability: a commentary, synopsis and agenda for future research. *Contraception*, *90*(1), 4–10. https://doi.org/10.1016/j.contraception.2014.02.029

Higgins, J. A., & Smith, N. K. (2016). The sexual acceptability of contraception: Reviewing the literature and building a new concept. *The Journal of Sex Research*, *53*(4–5), 417–456. https://doi.org/10.1080/00224499.2015.1134425

Higgins, J., & Hirsch, J. (2007). The pleasure deficit: Revisiting the "sexuality connection" in reproductive health. *International Family Planning Perspectives*, *33*(3), 133–139.

Hindin, M. J., McGough, L. J., & Adanu, R. M. (2014). Misperceptions, misinformation and myths about modern contraceptive use in Ghana. *Journal of Family Planning and Reproductive Health Care*, *40*(1), 30–35. https://doi.org/10.1136/jfprhc-2012-100464

Hosmer, D. W., Lemeshow, S., & Sturdivant, R. X. (2013). *Applied logistic regression* (Third edition). Hoboken, New Jersey: Wiley.

Hubacher, D., Mavranezouli, I., & McGinn, E. (2008). Unintended pregnancy in sub-Saharan Africa: Magnitude of the problem and potential role of contraceptive implants to alleviate it. *Contraception*, *78*(1), 73–78. https://doi.org/10.1016/j.contraception.2008.03.002

Huber, Esber, Garver, Banda, & Norris. (2017). The relationship between ambivalent and indifferent pregnancy desires and contraceptive use among Malawian women. *International Perspectives on Sexual and Reproductive Health*, *43*(1), 13–19. https://doi.org/10.1363/43e3417

IFSW, IASSW, & ICSW. (2012). *The global agenda for social work and social development: Commitment to action*. Retrieved from http://ifsw.org/get-involved/agenda-for-social-work/

International Conference on Population and Development (ICPD). (1994). *Programme of Action*. Cairo Eygpt: United Nations. Retrieved from http://www.unfpa.org/sites/default/files/pub-pdf/programme_of_action_Web%20ENGLISH.pdf

John, N. A., Babalola, S., & Chipeta, E. (2015). Sexual pleasure, partner dynamics and contraceptive use in Malawi. *International Perspectives on Sexual & Reproductive Health*, *41*(2), 99–107. https://doi.org/10.1363/4109915

Johnson, R. B., & Onwuegbuzie, A. J. (2004). Mixed methods research: A research paradigm whose time has come. *Educational Researcher*, *33*(7), 14–26. https://doi.org/10.3102/0013189X033007014

Kamwendo, G. H. (2015). Language policy transformation and democratization in Malawi. *Loyola Journal of Social Sciences*, *29*(1), 95–109.

Kasl, S. V., & Cobb, S. (1966). Health behavior, illness behavior, and sick-role behavior. *Archives of Environmental Health: An International Journal*, *12*(4), 531–541. https://doi.org/10.1080/00039896.1966.10664421

Katatsky, M. E. (1977). The health belief model as a conceptual framework for explaining contraceptive compliance. *Health Education Monographs*, *5*(3), 231–243. https://doi.org/10.1177/109019817700500304

Khan, S., Mishra, V., Arnold, F., & Abderrahim, N. (2007). *Contraceptive trends in developing countries* (DHS Comparative Reports No. 16). Calverton, Maryland, USA: Macro International Inc.

Levandowski, B., Mhango, C., Kuchingale, E., Lunguzi, J., Katengeza, H., Gebreselassie, H., & Singh, S. (2013). The incidence of induced abortion in Malawi. *International Perspectives on Sexual and Reproductive Health*, *39*(2), 88–96.

Link, C. F. (2011). Spousal communication and contraceptive use in rural Nepal: An event history analysis. *Studies in Family Planning*, *42*(2), 83–92. https://doi.org/10.1111/j.1728-4465.2011.00268.x

Madsen, E. L., Kuang, B., & Ross, J. (2015). Tracking changes in contraceptive use over time in Sub-Saharan Africa through cohort and period analyses. *Journal of Biosocial Science*, *47*(3), 329–344. https://doi.org/10.1017/S0021932014000108

Maharaj, P., & Cleland, J. (2005). Women on top: the relative influence of wives and husbands on contraceptive use in KwaZulu-Natal. *Women & Health*, *41*(2), 31–41. https://doi.org/10.1300/J013v41n02_03

Mahmood, N., & Ringheim, K. (1996). Factors affecting contraceptive use in Pakistan. *Pakistan Development Review*, *35*(1), 1–22.

Maiman, L. A., Becker, M. H., Kirscht, J. P., Haefner, D. P., & Drachman, R. H. (1977). Scales for measuring health belief model dimensions: A test of preditive value, internal consistency, and relationships among beliefs. *Health Education Monographs*, *5*(3), 215–230.

Malawi Population and Housing Census. (2008). *Malawi Census Report, 2008*. Retrieved from file:///C:/Users/huber/Downloads/-Malawi_Census_Report-2008Malawi_CensusReport_2008.pdf.pdf

Manuel, A. (2013). Filling in the gaps: The need for further investigation to understand the effects of oral contraceptives on female sexual satisfaction. *The Journal of Sexual Medicine*, *10*(7), 1897. https://doi.org/10.1111/jsm.12178

Moronkola, O. A., Ojediran, M. M., & Amosu, A. (2006). Reproductive health knowledge, beliefs and determinants of contraceptives use among women attending family planning clinics in Ibadan, Nigeria. *African Health Sciences*, *6*(3), 155–159.

Mosha, I., Ruben, R., & Kakoko, D. (2013). Family planning decisions, perceptions and gender dynamics among couples in Mwanza, Tanzania: a qualitative study. *BMC Public Health*, *13*, 523. https://doi.org/10.1186/1471-2458-13-523

Nalwadda, G., Mirembe, F., Byamugisha, J., & Faxelid, E. (2010). Persistent high fertility in Uganda: young people recount obstacles and enabling factors to use of contraceptives. *BMC Public Health*, *10*, 530. https://doi.org/10.1186/1471-2458-10-530

National Statistical Office Malawi, & ICF. (2017). *Malawi Demographic and Health Survey 2015-16*. Zomba, Malawi and Rockville, Maryland, USA: NSO and ICF.

National Statistical Office Malawi, & ICF Macro. (2011). *Malawi Demographic and Health Survey, 2010*. Zomba, Malawi and Rockville, Maryland, USA: NSO and ICF Macro. Retrieved from http://dhsprogram.com/publications/publication-FR247-DHS-Final-Reports.cfm

National Statistics Office of Malawi. (2014). *Malawi MDG endline survey*. Retrieved from http://www.nsomalawi.mw/images/stories/data_on_line/demography/MDG%20Endline/MES%202014%20Report.pdf

Norris, A., Garver, S., Shoben, A., & Norris Turner, A. (2016). *Assessment of barriers and facilitators for contraceptive use among women in Malawi: A comparison of women with met and unmet need for contraception*. Working Paper.

Ntshebe, O. (2011). Perceptions and use of contraception among married males in Mchinji, Malawi: A qualitative study. *Journal of Social Development in Africa*, *26*(2), 117–140.

Ochako, R., Mbondo, M., Aloo, S., Kaimenyi, S., Thompson, R., & Temmerman, M. (2015). Barriers to modern contraceptive methods uptake among young women in Kenya: A qualitative study. *BMC Public Health*, *15*(1), 1–9. https://doi.org/10.1186/s12889-015-1483-1

Padgett, D. K. (2008). *Qualitative Methods in Social Work Research* (2nd ed.). Thousand Oaks, CA: Sage Publications, INC.

Paz Soldan, V. A. (2004). How family planning ideas are spread within social groups in rural Malawi. *Studies in Family Planning*, *35*(4), 275–290.

Polis, C. B., Bradley, S. E. K., Bankole, A., Onda, T., Croft, T. N., & Singh, S. (2016). *Contraceptive failure rates in the developing world: An analysis of demographic and health survey data in 43 countries*. New York, NY: Guttmacher Institute.

Puts, D. A., & Pope, L. E. (2013). Moderators, mates, and matchmakers: Effects of oral contraceptives on sexual desire may also depend on partners' behavior and the role of female choice. *Archives of Sexual Behavior*, *42*(8), 1379–1380. https://doi.org/10.1007/s10508-013-0165-2

Ronsmans, C., & Graham, W. J. (2006). Maternal mortality: Who, when, where, and why. *The Lancet*, *368*(9542), 1189–1200. https://doi.org/10.1016/S0140-6736(06)69380-X

Rosenstock, I. M. (1974). Historical origins of the health belief model. *Health Education Monographs*, *2*(4), 328–335.

Ross, J., & Smith, E. (2011). Trends in National Family Planning Programs, 1999, 2004 and 2009. *International Perspectives on Sexual and Reproductive Health*, *37*(03), 125–133. https://doi.org/10.1363/3712511

Ross, J., & Stover, J. (2001). The family planning program effort index: 1999 cycle. *International Family Planning Perspectives*, *27*(3), 119–129.

Rutenberg, N., & Watkins, S. C. (1997). The buzz outside the clinics: Conversations and contraception in Nyanza Province, Kenya. *Studies in Family Planning*, *28*(4), 290–307. https://doi.org/10.2307/2137860

Santelli, J., Rochat, R., Hatfield-Timajchy, K., Gilbert, B. C., Curtis, K., Cabral, R., … Schieve, L. (2003). The measurement and meaning of unintended pregnancy. *Perspectives On Sexual And Reproductive Health*, *35*(2), 94–101.

Schwandt, H. M., Skinner, J., Hebert, L. E., & Saad, A. (2015). Perceived risks associated with contraceptive method use among men and women in Ibadan and Kaduna, Nigeria. *African Journal of Reproductive Health*, *19*(4), 31–40.

Sedgh, G., Ashford, L. S., & Hussain, R. (2016). *Unmet need for contraception in developing countries: Examining women's reasons for not using a method*. New

York: Guttmacher Institute. Retrieved from http://guttmacher.org/report/unmet-need-for-contraception-in-developing-countries

Sedgh, G., & Hussain, R. (2014). Reasons for contraceptive nonuse among women having unmet need for contraception in developing countries. *Studies in Family Planning*, *45*(2), 151–169. https://doi.org/10.1111/j.1728-4465.2014.00382.x

Sedgh, G., Singh, S., & Hussain, R. (2014). Intended and unintended pregnancies worldwide in 2012 and recent trends. *Studies in Family Planning*, *45*(3), 301–314. https://doi.org/10.1111/j.1728-4465.2014.00393.x

Shattuck, D., Kerner, B., Gilles, K., Hartmann, M., Ng'ombe, T., & Guest, G. (2011). Encouraging contraceptive uptake by motivating men to communicate about family planning: The Malawian male motivator project. *American Journal of Public Health*, *101*(6), 1089–1095.

Singh, S., & Darroch, J. E. (2012). *Adding It Up: Costs and Benefits of Contraceptive Services — Estimates for 2012.* New York, NY: Guttmacher Institute and United National Population Fund (UNPFA).

Singh, S., Darroch, J. E., & Ashford, L. S. (2014). *Adding it up: The costs and benefits of investing in sexual and reproductive health*. New York, NY: Guttmacher Institute. Retrieved from https://www.guttmacher.org/sites/default/files/report_pdf/addingitup2014.pdf

Singh, S., Sedgh, G., & Hussain, R. (2010). Unintended pregnancy: Worldwide levels, trends, and outcomes. *Studies In Family Planning*, *41*(4), 241–250.

Skiles, M. P., Cunningham, M., Inglis, A., Wilkes, B., Hatch, B., Bock, A., & Barden-O'Fallon, J. (2015). The effect of access to contraceptive services on injectable use and demand for family planning in Malawi. *International Perspectives on Sexual and Reproductive Health*, *41*(1), 20–30.

Sonfield, A., Hasstedt, K., Kavanaugh, M. L., & Anderson, R. (2013). *The social and economic benefits of women's ability to determine whether and when to have children*. Guttmacher Institute. Retrieved from https://editor.guttmacher.org/sites/default/files/report_pdf/social-economic-benefits.pdf

Stash, S. (1999). Explanations of unmet need for contraception in Chitwan, Nepal. *Studies in Family Planning*, *30*(4), 267–287.

Stewart, R. C., Kauye, F., Umar, E., Vokhiwa, M., Bunn, J., Fitzgerald, M., … Creed, F. (2009). Validation of a Chichewa version of the Self-Reporting Questionnaire (SRQ) as a brief screening measure for maternal depressive disorder in Malawi, Africa. *Journal of Affective Disorders*, *112*(1–3), 126–134. https://doi.org/10.1016/j.jad.2008.04.001

Tavory, I., & Swidler, A. (2009). Condom semiotics: Meaning and condom use in rural Malawi. *American Sociological Review*, *74*(2), 171–189. https://doi.org/10.1177/000312240907400201

Thummalachetty, N., Mathur, S., Mullinax, M., DeCosta, K., Nakyanjo, N., Lutalo, T., … Santelli, J. S. (2017). Contraceptive knowledge, perceptions, and concerns

among men in Uganda. *BMC Public Health*, *17*(1). https://doi.org/10.1186/s12889-017-4815-5

Westhoff, C. (2012). *Unmet need for modern contraceptive methods* (DHS Analytical Studies No. 28). Calverton, Maryland, USA: ICF International.

Westoff, C. F. (2010). *Desired number of children: 2000-2008* (DHS Comparative Reports No. 25). Calverton, Maryland, USA: ICF Macro.

Williamson, L. M., Parkes, A., Wight, D., Petticrew, M., & Hart, G. J. (2009). Limits to modern contraceptive use among young women in developing countries: a systematic review of qualitative research. *Reproductive Health*, *6*(1), 3. https://doi.org/10.1186/1742-4755-6-3

Wilson, S. F., Degaiffier, N., Ratcliffe, S. J., & Schreiber, C. A. (2016). Peer counselling for the promotion of long-acting, reversible contraception among teens: a randomised, controlled trial. *The European Journal of Contraception & Reproductive Health Care*, *21*(5), 380–387. https://doi.org/10.1080/13625187.2016.1214698

World Bank. (2016). Malawi. Retrieved from http://data.worldbank.org/country/malawi?view=chart

World Health Organization. (2011). *Unsafe abortion: Global and regional estimates of the incidence of unsafe abortion and associated mortality in 2008*. Retrieved from http://www.who.int/reproductivehealth/publications/unsafe_abortion/9789241501118/en/

World Health Organization. (2015). *Trends in maternal mortality: 1990 to 2015, Estimates by WHO, UNICEF, UNFPA, World Bank Group and the United Nations Population Division*. Geneva. Retrieved from http://www.who.int/reproductivehealth/publications/monitoring/maternal-mortality-2015/en/

Zanolini, A., Bolton, C., Lyabola, L.-L., Phiri, G., Samona, A., Kaonga, A., & Thirumurthy, H. (2016). Feasibility and Effectiveness of a Peer Referral Incentive Intervention to Promote Male Circumcision Uptake in Zambia: *JAIDS Journal of Acquired Immune Deficiency Syndromes*, *72*, S262–S268. https://doi.org/10.1097/QAI.0000000000000808

Appendix A. Method-Specific Barriers and Facilitators Survey Questions

MODULE J. METHOD-SPECIFIC BARRIERS AND FACILITATORS		
PART A. CONDOMS		
No.	**Question**	**Response Options**
J1	**Monga mmene mungadziwire: Kondomu ndi pulasitiki yomwe imavalidwa ku chida cha abambo pa nthawi ya kugonana kuti pasakhale kukhudzana pakati pa ziwalo za mwamuna ndi mkazi. Munamvako za kondomu ya abambo m'mbuyomu?** *As you may know, a condom is plastic that covers the penis when having sex, so that there is no direct contact of the sex organs. Have you heard of the male condom before this conversation?*	1. Eya, ndinamvako / Yes, I have heard of it 2. Ayi, sindinamveko / No, I have not heard of it → **J15**
J2	**Mukudzikhulupirila bwanji kuti mungathe kuuza anzanu za kondomu ya abambo?** *How confident would you be telling a friend about the male condom?*	1. Ndikudzikhulupilira kwambiri / Very confident 2. Ndikudzikhulupilira pang'ono / Somewhat confident 3. Sindikuzikhulupilira nkomwe / Not confident at all → **J15**
J3	**Ngati mungafune kugwiritsa ntchito makondomu, ndikosavuta kapena kovuta bwanji kuti muwapeze?** *If you wanted to use condoms, how easy or hard would they be to obtain?*	1. Kosavuta nkomwe / Very easy 2. Kosavuta / Somewhat easy 3. Kovutirako / Somewhat hard 4. Kovutitstitsa / Very hard 97. Sindikudziwa / I don't know
J4	**Ngati mukufuna kugwiritsa ntchito makondomu, ndikosavuta kapena nkovuta bwanji kugwiritsa ntchito?** *If you wanted to use condoms, how easy or hard would it be to use?*	1. Kosavuta nkomwe / Very easy 2. Kosavuta / Somewhat easy 3. Kovutirako / Somewhat hard 4. Kovutitstitsa / Very hard 97. Sindikudziwa / I don't know

J5	**Makondomu ndiwodalilika kapena osadalilika bwanji popewa mimba?** *How effective or ineffective are condoms at preventing pregnancy?*	1. Ndiyodalirika kwambiri / Very effective 2. Ndiyodalirikako / Somewhat effective 3. Ndiyosadalirika / Somewhat ineffective 4. Ndiyosadalirika nkomwe / Very ineffective 97. Sindikudziwa / I don't know
J6	**Ngati inu kapena okondedwa wanu mutagwiritsa ntchito ma kondomu, sipangakhale mavuto, mavuto ochepa, kapena mavuto akulu kwa inu?** *If you or your partner used condoms, would there be no side-effects, minor side-effects, or serious side-effects for you?*	1. Sipangakhale mavuto / No side-effects 2. Mavuto ochepa / Minor side-effects 3. Mavuto akulu / Serious side-effects 97. Sindikudziwa / I don't know
J7	**Ngati mzimayi wagwiritsa ntchito ma kondomu, kungabweretse zotsatila zabwino, zoipa, kapena sipangakhale vuto lililonse pa msambo wake?** *If a woman uses condoms, will the effect on her menstruation be positive, negative or have no effect?*	1. Zabwino / Positive 2. Zoipa / Negative 3. Sipangakhale vuto / Have no effect 97. Sindikudziwa / I don't know
J8	**Ngati mzimayi wagwiritsa ntchito makondomu,, ndikothekera bwanji kuti adzavutike kukhala ndi mimba m'tsogolo?** *If a woman uses condoms, how likely is it that she will have trouble getting pregnant in the future?*	1. Very likely / kuthekera kochuluka 2. Likely / kuthekera 3. Unlikely / kusathekera 4. Very unlikely / Kusathekera mkomwe 97. Sindikudziwa / I don't know
J9	**Mukuganiza kuti makondomu amaonjezera kapena kuchepetsa kukoma kwa amayi pogonana?** *Do you think condoms enhance (increase) or interfere with (reduce) sexual pleasure for women?*	1. Enhances / Imaonjezera 2. Interferes / Kuchepetsa 3. No impact / Palibe chimachitika 97. Sindikudziwa / I don't know
J10	**Mukuganiza kuti makondomu amaonjezera kapena kuchepetsa kukoma kwa abambo pogonana?** *Do you think condoms enhance (increase) or interfere with (reduce) sexual pleasure for men?*	1. Enhances / Imaonjezera 2. Interferes / Kuchepetsa 3. No impact / Palibe chimachitika 97. Sindikudziwa / I don't know

J11	**Ngati mungafune kugwiritsa ntchito makondomu, ndikosavuta kapena ndi kovuta bwanji kugwiritsa ntchito opanda wina aliyense kudziwa?** *If you wanted to use condoms, how easy or hard would they be to use without anyone knowing?*	1. Kosavuta nkomwe / Very easy 2. Kosavuta / Somewhat easy 3. Kovutirako / Somewhat hard 4. Kovutitstitsa / Very hard 97. Sindikudziwa / I don't know
J12	**Mungakhale osamasuka kapena omasuka bwanji kumufotokozera nzanu wa pamtima kuti munagwiritsa ntchito makondomu?** *How comfortable or uncomfortable would you feel telling a good friend that you used condoms?*	1. Omasuka kwambiri / Very comfortable 2. Omasuka pang'ono / Somewhat comfortable 3. Osamasuka / Somewhat uncomfortable 4. Osamasuka nkomwe / Very uncomfortable 97. Sindikudziwa / I don't know
J13	**Ngati mungafune kugwiritsa ntchito makondomu, okondedwa wanu angakulimbikitseni kapena ayi?** *If you wanted to use condoms, how supportive or unsupportive would your partner be about your decision?*	1. Angandilimbikitse kwambiri / Very supportive 2. Angathe kundilimbikitsa / Somewhat supportive 3. Sangandilimbikitse / Somewhat unsupportive 4. Sangandilimbikitse nkomwe / Very unsupportive 97. Sindikudziwa / I don't know
J14	**Kodi nzanu anakuuzaniko ubwino ogwiritsa nthito makondomu?** *Has a friend ever recommended the use of condoms to you?*	1. Inde / Yes 2. Ayi / No 97. Sindikudziwa / I don't know
PART B: INJECTABLES		
J15	**Monga mmene mungadziwire: Amai amakabayitsa jekeseni kuchipatala kuti apewe mimba. Munamvako za jekeseni m'mbuyomu?** *As you may know, women can have an injection by a health care provider to avoid pregnancy. Have you heard of the injeactable before this conversation?*	1. Eya, ndinamvako / Yes, I have heard of it 2. Ayi, sindinamveko / No, I have not heard of it → **J29**
J16	**Mukudzikhulupirila bwanji kuti mungathe kuuza anzanu za jekeseni?** *How confident would you be telling a friend about injectables?*	1. Ndikudzikhulupilira kwambiri / Very confident 2. Ndikudzikhulupilira pang'ono / Somewhat confident 3. Sindikuzikhulupilira nkomwe / Not confident at all → **J29**

J17	**Ngati mungafune kugwiritsa ntchito jekeseni, ndikosavuta kapena kovuta bwanji kuti muwapeze?** *If you wanted to use injections, how easy or hard would they be to obtain?*	1. Kosavuta nkomwe / Very easy 2. Kosavuta / Somewhat easy 3. Kovutirako / Somewhat hard 4. Kovutitstitsa / Very hard 97. Sindikudziwa / I don't know
J18	**Ngati mukufuna kugwiritsa ntchito jekeseni, ndikosavuta kapena nkovuta bwanji kugwiritsa ntchito?** *If you wanted to use injections, how easy or hard would it be to use?*	1. Kosavuta nkomwe / Very easy 2. Kosavuta / Somewhat easy 3. Kovutirako / Somewhat hard 4. Kovutitstitsa / Very hard 97. Sindikudziwa / I don't know
J19	**Jekeseni ndiwodalilika kapena osadalilika bwanji popewa mimba?** *How effective or ineffective are injections at preventing pregnancy?*	1. Ndiyodalirika kwambiri / Very effective 2. Ndiyodalirikako / Somewhat effective 3. Ndiyosadalirika / Somewhat ineffective 4. Ndiyosadalirika nkomwe / Very ineffective 97. Sindikudziwa / I don't know
J20	**Ngati inu kapena okondedwa wanu mutagwiritsa ntchito jekeseni, sipangakhale mavuto, mavuto ochepa, kapena mavuto akulu kwa inu?** *If you or your partner used used injectables, would there be no side-effects, minor side-effects, or serious side-effects for you?*	1. Sipangakhale mavuto / No side-effects 2. Mavuto ochepa / Minor side-effects 3. Mavuto akulu / Serious side-effects 97. Sindikudziwa / I don't know
J21	**Ngati mzimayi wagwiritsa ntchito jekeseni, kungabweretse zotsatila zabwino, zoipa, kapena sipangakhale vuto lililonse pa msambo wake?** *If a woman uses injectables, will the effect on her menstruation be positive, negative or have no effect?*	1. Zabwino / Positive 2. Zoipa / Negative 3. Sipangakhale vuto / Have no effect 97. Sindikudziwa / I don't know
J22	**Ngati mzimayi wagwiritsa ntchito jekeseni, ndikothekera bwanji kuti adzavutike kukhala ndi mimba m'tsogolo?** *If a woman uses injections, how likely is it that she will have trouble getting pregnant in the future?*	1. Very likely / kuthekera kochuluka 2. Likely / kuthekera 3. Unlikely / kusathekera 4. Very unlikely / Kusathekera mkomwe 97. Sindikudziwa / I don't know

J23	**Mukuganiza kuti jekeseni amaonjezera kapena kuchepetsa chilakolako chogonana kwa amayi?** *Do you think injections enhance (increase) or interfere with (reduce) sexual pleasure for women?*	1. Enhances / Imaonjezera 2. Interferes / Kuchepetsa 3. No impact / Palibe chimachitika 97. Sindikudziwa / I don't know
J24	**Mukuganiza kuti jekeseni amaonjezera kapena kuchepetsa chilakolako chogonana kwa abambo?** *Do you think injections enhance (increase) or interfere with (reduce) sexual pleasure for men?*	1. Enhances / Imaonjezera 2. Interferes / Kuchepetsa 3. No impact / Palibe chimachitika 97. Sindikudziwa / I don't know
J25	**Ngati mungafune kugwiritsa ntchito jekeseni, ndikosavuta kapena ndi kovuta bwanji kugwiritsa ntchito opanda wina aliyense kudziwa?** *If you wanted to use injections, how easy or hard would they be to use without anyone knowing?*	1. Kosavuta nkomwe / Very easy 2. Kosavuta / Somewhat easy 3. Kovutirako / Somewhat hard 4. Kovutitstitsa / Very hard 97. Sindikudziwa / I don't know
J26	**Mungakhale osamasuka kapena omasuka bwanji kumufotokozera nzanu wa pamtima kuti munagwiritsa ntchito jekeseni?** *How comfortable or uncomfortable would you feel telling a good friend that you used injections?*	1. Omasuka kwambiri / Very comfortable 2. Omasuka pang'ono / Somewhat comfortable 3. Osamasuka / Somewhat uncomfortable 4. Osamasuka nkomwe / Very uncomfortable 97. Sindikudziwa / I don't know
J27	**Ngati mungafune kugwiritsa ntchito jekeseni, okondedwa wanu angakulimbikitseni kapena ayi?** *If you wanted to use injections, how supportive or unsupportive would your partner be about your decision?*	1. Angandilimbikitse kwambiri / Very supportive 2. Angathe kundilimbikitsa / Somewhat supportive 3. Sangandilimbikitse / Somewhat unsupportive 4. Sangandilimbikitse nkomwe / Very unsupportive 97. Sindikudziwa / I don't know
J28	**Kodi nzanu anakuuzaniko ubwino ogwiritsa nthito jekeseni?** *Has a friend ever recommended the use of injectables to you?*	1. Inde / Yes 2. Ayi / No 97. Sindikudziwa / I don't know
PART C: IMPLANT		

J29	**Monga mmene mungadziwire: Amai amayikidwa kachubu kamodzi kapena tingapo pankono ndi anthu ogwira ntchiton ku chipatala. Munamvako za kalera wa pankono m'mbuyomu?** *As you may know, women can have one or more small rods placed under the skin of their upper arms by a health care provider. Have you heard of the implant before this conversation?*	1. Eya, ndinamvako / Yes, I have heard of it 2. Ayi, sindinamveko / No, I have not heard of it → **J43**
J30	**Mukudzikhulupirila bwanji kuti mungathe kuuza anzanu za kalera wa pankono?** *How confident would you be telling a friend about the Implant?*	1. Ndikudzikhulupilira kwambiri / Very confident 2. Ndikudzikhulupilira pang'ono / Somewhat confident 3. Sindikuzikhulupilira nkomwe / Not confident at all → **J43**
J31	**Ngati mungafune kugwiritsa ntchito kalera wapankono, ndikosavuta kapena kovuta bwanji kuti muwapeze?** *If you wanted to use implants, how easy or hard would they be to obtain?*	1. Kosavuta nkomwe / Very easy 2. Kosavuta / Somewhat easy 3. Kovutirako / Somewhat hard 4. Kovutitstitsa / Very hard 97. Sindikudziwa / I don't know
J32	**Ngati mukufuna kugwiritsa ntchito kalera wapankono, ndikosavuta kapena nkovuta bwanji kugwiritsa ntchito?** *If you wanted to use implants, how easy or hard would it be to use?*	1. Kosavuta nkomwe / Very easy 2. Kosavuta / Somewhat easy 3. Kovutirako / Somewhat hard 4. Kovutitstitsa / Very hard 97. Sindikudziwa / I don't know
J33	**Kalera wapankono ndiwodalilika kapena osadalilika bwanji popewa mimba?** *How effective or ineffective are implants at preventing pregnancy?*	1. Ndiyodalirika kwambiri / Very effective 2. Ndiyodalirikako / Somewhat effective 3. Ndiyosadalirika / Somewhat ineffective 4. Ndiyosadalirika nkomwe / Very ineffective 97. Sindikudziwa / I don't know
J34	**Ngati inu kapena okondedwa wanu mutagwiritsa ntchito kalera wapankono, sipangakhale mavuto, mavuto ochepa, kapena mavuto akulu kwa inu?** *If you or your partner used implants, would there be no side-effects, minor side-effects, or serious side-effects for you?*	1. Sipangakhale mavuto / No side-effects 2. Mavuto ochepa / Minor side-effects 3. Mavuto akulu / Serious side-effects 97. Sindikudziwa / I don't know

J35	**Ngati mzimayi wagwiritsa ntchito kalera wapankono, kungabweretse zotsatila zabwino, zoipa, kapena sipangakhale vuto lililonse pa msambo wake?** *If a woman uses implants, will the effect on her menstruation be positive, negative or have no effect?*	1. Zabwino / Positive 2. Zoipa / Negative 3. Sipangakhale vuto / Have no effect 97. Sindikudziwa / I don't know
J36	**Ngati mzimayi wagwiritsa ntchito kalera wapankono, ndikothekera bwanji kuti adzavutike kukhala ndi mimba m'tsogolo?** *If a woman uses implants, how likely is it that she will have trouble getting pregnant in the future?*	1. Very likely / kuthekera kochuluka 2. Likely / kuthekera 3. Unlikely / kusathekera 4. Very unlikely / Kusathekera mkomwe 97. Sindikudziwa / I don't know
J37	**Mukuganiza kuti kalera wapankono amaonjezera kapena kuchepetsa chilakolako chogonana kwa amayi?** *Do you think implants enhance (increase) or interfere with (reduce) sexual pleasure for women?*	1. Enhances / Imaonjezera 2. Interferes / Kuchepetsa 3. No impact / Palibe chimachitika 97. Sindikudziwa / I don't know
J38	**Mukuganiza kuti kalera wapankono amaonjezera kapena kuchepetsa chilakolako chogonana kwa abambo?** *Do you think implants enhance (increase) or interfere with (reduce) sexual pleasure for men?*	1. Enhances / Imaonjezera 2. Interferes / Kuchepetsa 3. No impact / Palibe chimachitika 97. Sindikudziwa / I don't know
J39	**Ngati mungafune kugwiritsa ntchito kalera wapankono, ndikosavuta kapena ndi kovuta bwanji kugwiritsa ntchito opanda wina aliyense kudziwa?** *If you wanted to use implants, how easy or hard would they be to use without anyone knowing?*	1. Kosavuta nkomwe / Very easy 2. Kosavuta / Somewhat easy 3. Kovutirako / Somewhat hard 4. Kovutitstitsa / Very hard 97. Sindikudziwa / I don't know
J40	**Mungakhale osamasuka kapena omasuka bwanji kumufotokozera nzanu wa pamtima kuti munagwiritsa ntchito kalera wapankono?** *How comfortable or uncomfortable would you feel telling a good friend that you used implants?*	1. Omasuka kwambiri / Very comfortable 2. Omasuka pang'ono / Somewhat comfortable 3. Osamasuka / Somewhat uncomfortable 4. Osamasuka nkomwe / Very uncomfortable 97. Sindikudziwa / I don't know

J41	**Ngati mungafune kugwiritsa ntchito kalera wapankono, okondedwa wanu angakulimbikitseni kapena ayi?** *If you wanted to use implants, how supportive or unsupportive would your partner be about your decision?*	1. Angandilimbikitse kwambiri / Very supportive 2. Angathe kundilimbikitsa / Somewhat supportive 3. Sangandilimbikitse / Somewhat unsupportive 4. Sangandilimbikitse nkomwe / Very unsupportive 97. Sindikudziwa / I don't know
J42	**Kodi nzanu anakuuzaniko ubwino ogwiritsa nthito kalera wapankono?** *Has a friend ever recommended the use of implants to you?*	1. Inde / Yes 2. Ayi / No 97. Sindikudziwa / I don't know
PART D: BIRTH CONTROL PILLS		
J43	**Monga mmene mungadziwire: Amai amamwa limodzi mwamapilitsi akulera tsiku ndi tsiku. Munamvako za mapilitsi olelera m'mbuyomu?** *As you may know, women take a pill every day to avoid pregnancy. Have you heard of birth control pills before this conversation?*	1. Eya, ndinamvako / Yes, I have heard of it 2. Ayi, sindinamveko / No, I have not heard of it → **J57**
J44	**Mukudzikhulupirila bwanji kuti mungathe kuuza anzanu za mapilitsi?** *How confident would you be telling a friend about birth control pills?*	1. Ndikudzikhulupilira kwambiri / Very confident 2. Ndikudzikhulupilira pang'ono / Somewhat confident 3. Sindikuzikhulupilira nkomwe / Not confident at all → **J57**
J45	**Ngati mungafune kugwiritsa ntchito mapilitsi, ndikosavuta kapena kovuta bwanji kuti muwapeze?** *If you wanted to use birth control pills, how easy or hard would they be to obtain?*	1. Kosavuta nkomwe / Very easy 2. Kosavuta / Somewhat easy 3. Kovutirako / Somewhat hard 4. Kovutitstitsa / Very hard 97. Sindikudziwa / I don't know
J46	**Ngati mukufuna kugwiritsa ntchito mapilitsi, ndikosavuta kapena nkovuta bwanji kugwiritsa ntchito?** *If you wanted to use birth control pills, how easy or hard would it be to use?*	1. Kosavuta nkomwe / Very easy 2. Kosavuta / Somewhat easy 3. Kovutirako / Somewhat hard 4. Kovutitstitsa / Very hard 97. Sindikudziwa / I don't know

J47	**Mapilitsi ndiwodalilika kapena osadalilika bwanji popewa mimba?** *How effective or ineffective are birth control pills at preventing pregnancy?*	1. Ndiyodalirika kwambiri / Very effective 2. Ndiyodalirikako / Somewhat effective 3. Ndiyosadalirika / Somewhat ineffective 4. Ndiyosadalirika nkomwe / Very ineffective 97. Sindikudziwa / I don't know
J48	**Ngati inu kapena okondedwa wanu mutagwiritsa ntchito mapilitsi, sipangakhale mavuto, mavuto ochepa, kapena mavuto akulu kwa inu?** *If you or your partner used birth control pills, would there be no side-effects, minor side-effects, or serious side-effects for you?*	1. Sipangakhale mavuto / No side-effects 2. Mavuto ochepa / Minor side-effects 3. Mavuto akulu / Serious side-effects 97. Sindikudziwa / I don't know
J49	**Ngati mzimayi wagwiritsa ntchito mapilitsi, kungabweretse zotsatila zabwino, zoipa, kapena sipangakhale vuto lililonse pa msambo wake?** *If a woman uses birth control pills, will the effect on her menstruation be positive, negative or have no effect?*	1. Zabwino / Positive 2. Zoipa / Negative 3. Sipangakhale vuto / Have no effect 97. Sindikudziwa / I don't know
J50	**Ngati mzimayi wagwiritsa ntchito mapilitsi, ndikothekera bwanji kuti adzavutike kukhala ndi mimba m'tsogolo?** *If a woman uses birth control pills, how likely is it that she will have trouble getting pregnant in the future?*	1. Very likely / kuthekera kochuluka 2. Likely / kuthekera 3. Unlikely / kusathekera 4. Very unlikely / Kusathekera mkomwe 97. Sindikudziwa / I don't know
J51	**Mukuganiza kuti mapilitsi amaonjezera kapena kuchepetsa chilakolako chogonana kwa amayi?** *Do you think birth control pills enhance (increase) or interfere with (reduce) sexual pleasure for women?*	1. Enhances / Imaonjezera 2. Interferes / Kuchepetsa 3. No impact / Palibe chimachitika 97. Sindikudziwa / I don't know
J52	**Mukuganiza kuti mapilitsi amaonjezera kapena kuchepetsa chilakolako chogonana kwa abambo?** *Do you think birth control piills enhance (increase) or interfere with (reduce) sexual pleasure for men?*	1. Enhances / Imaonjezera 2. Interferes / Kuchepetsa 3. No impact / Palibe chimachitika 97. Sindikudziwa / I don't know

J53	**Ngati mungafune kugwiritsa ntchito mapilitsi, ndikosavuta kapena ndi kovuta bwanji kugwiritsa ntchito opanda wina aliyense kudziwa?** *If you wanted to use birth control pills, how easy or hard would they be to use without anyone knowing?*	1. Kosavuta nkomwe / Very easy 2. Kosavuta / Somewhat easy 3. Kovutirako / Somewhat hard 4. Kovutitstitsa / Very hard 97. Sindikudziwa / I don't know
J54	**Mungakhale osamasuka kapena omasuka bwanji kumufotokozera nzanu wa pamtima kuti munagwiritsa ntchito mapilitsi?** *How comfortable or uncomfortable would you feel telling a good friend that you used birth control pills?*	1. Omasuka kwambiri / Very comfortable 2. Omasuka pang'ono / Somewhat comfortable 3. Osamasuka / Somewhat uncomfortable 4. Osamasuka nkomwe / Very uncomfortable 97. Sindikudziwa / I don't know
J55	**Ngati mungafune kugwiritsa ntchito mapilitsi, okondedwa wanu angakulimbikitseni kapena ayi?** *If you wanted to use birth control pills, how supportive or unsupportive would your partner be about your decision?*	1. Angandilimbikitse kwambiri / Very supportive 2. Angathe kundilimbikitsa / Somewhat supportive 3. Sangandilimbikitse / Somewhat unsupportive 4. Sangandilimbikitse nkomwe / Very unsupportive 97. Sindikudziwa / I don't know
J56	**Kodi nzanu anakuuzaniko ubwino ogwiritsa nthito mapilitsi?** *Has a friend ever recommended the use of birth control pills to you?*	1. Inde / Yes 2. Ayi / No 97. Sindikudziwa / I don't know
PART E: INTRAUTERINE DEVICE (IUD)		
J57	**Monga mmene mungadziwire: Amai amayikidwa lupu muchiberekero ndi anthu ogwira ntchito kuchipatala. *Munamvako za lupu* m'mbuyomu*?*** *As you may know, women can have a loop or coil placed inside their uterus by a health care provider. Have you heard of the IUD before this conversation?*	1. Eya, ndinamvako / Yes, I have heard of it 2. Ayi, sindinamveko / No, I have not heard of it → **MODULE K**

J58	**Mukudzikhulupirila bwanji kuti mungathe kuuza anzanu za lupu?** *How confident would you be telling a friend about the IUD?*	1. Ndikudzikhulupilira kwambiri / Very confident 2. Ndikudzikhulupilira pang'ono / Somewhat confident 3. Sindikuzikhulupilira nkomwe / Not confident at all → **MODULE K**
J59	**Ngati mungafune kugwiritsa ntchito lupu, ndikosavuta kapena kovuta bwanji kuti muwapeze?** *If you wanted to use IUDs, how easy or hard would they be to obtain?*	1. Kosavuta nkomwe / Very easy 2. Kosavuta / Somewhat easy 3. Kovutirako / Somewhat hard 4. Kovutitstitsa / Very hard 97. Sindikudziwa / I don't know
J60	**Ngati mukufuna kugwiritsa ntchito lupu, ndikosavuta kapena nkovuta bwanji kugwiritsa ntchito?** *If you wanted to use IUDs, how easy or hard would it be to use?*	1. Kosavuta nkomwe / Very easy 2. Kosavuta / Somewhat easy 3. Kovutirako / Somewhat hard 4. Kovutitstitsa / Very hard 97. Sindikudziwa / I don't know
J61	**Lupu ndiwodalilika kapena osadalilika bwanji popewa mimba?** *How effective or ineffective are IUDs at preventing pregnancy?*	1. Ndiyodalirika kwambiri / Very effective 2. Ndiyodalirikako / Somewhat effective 3. Ndiyosadalirika / Somewhat ineffective 4. Ndiyosadalirika nkomwe / Very ineffective 97. Sindikudziwa / I don't know
J62	**Ngati inu kapena okondedwa wanu mutagwiritsa ntchito lupu, sipangakhale mavuto, mavuto ochepa, kapena mavuto akulu kwa inu?** *If you or your partner used IUDs, would there be no side-effects, minor side-effects, or serious side-effects for you?*	1. Sipangakhale mavuto / No side-effects 2. Mavuto ochepa / Minor side-effects 3. Mavuto akulu / Serious side-effects 97. Sindikudziwa / I don't know
J63	**Ngati mzimayi wagwiritsa ntchito lupu, kungabweretse zotsatila zabwino, zoipa, kapena sipangakhale vuto lililonse pa msambo wake?** *If a woman uses IUDs, will the effect on her menstruation be positive, negative or have no effect?*	1. Zabwino / Positive 2. Zoipa / Negative 3. Sipangakhale vuto / Have no effect 97. Sindikudziwa / I don't know

J64	**Ngati mzimayi wagwiritsa ntchito lupu, ndikothekera bwanji kuti adzavutike kukhala ndi mimba m'tsogolo?** *If a woman uses IUDs, how likely is it that she will have trouble getting pregnant in the future?*	1. Very likely / kuthekera kochuluka 2. Likely / kuthekera 3. Unlikely / kusathekera 4. Very unlikely / Kusathekera mkomwe 97. Sindikudziwa / I don't know
J65	**Mukuganiza kuti lupu amaonjezera kapena kuchepetsa chilakolako chogonana kwa amayi?** *Do you think IUDs enhance (increase) or interfere with (reduce) sexual pleasure for women?*	1. Enhances / Imaonjezera 2. Interferes / Kuchepetsa 3. No impact / Palibe chimachitika 97. Sindikudziwa / I don't know
J66	**Mukuganiza kuti lupu amaonjezera kapena kuchepetsa chilakolako chogonana kwa abambo?** *Do you think IUDs enhance (increases) or interfere with (reduces) sexual pleasure for men?*	1. Enhances / Imaonjezera 2. Interferes / Kuchepetsa 3. No impact / Palibe chimachitika 97. Sindikudziwa / I don't know
J67	**Ngati mungafune kugwiritsa ntchito lupu, ndikosavuta kapena ndi kovuta bwanji kugwiritsa ntchito opanda wina aliyense kudziwa?** *If you wanted to use IUDs, how easy or hard would they be to use without anyone knowing?*	1. Kosavuta nkomwe / Very easy 2. Kosavuta / Somewhat easy 3. Kovutirako / Somewhat hard 4. Kovutitstitsa / Very hard 97. Sindikudziwa / I don't know
J68	**Mungakhale osamasuka kapena omasuka bwanji kumufotokozera nzanu wa pamtima kuti munagwiritsa ntchito lupu?** *How comfortable or uncomfortable would you feel telling a good friend that you used IUDs?*	1. Omasuka kwambiri / Very comfortable 2. Omasuka pang'ono / Somewhat comfortable 3. Osamasuka / Somewhat uncomfortable 4. Osamasuka nkomwe / Very uncomfortable 97. Sindikudziwa / I don't know
J69	**Ngati mungafune kugwiritsa ntchito lupu, okondedwa wanu angakulimbikitseni kapena ayi?** *If you wanted to use IUDs, how supportive or unsupportive would your partner be about your decision?*	1. Angandilimbikitse kwambiri / Very supportive 2. Angathe kundilimbikitsa / Somewhat supportive 3. Sangandilimbikitse / Somewhat unsupportive 4. Sangandilimbikitse nkomwe / Very unsupportive 97. Sindikudziwa / I don't know

J70	**Kodi nzanu anakuuzaniko ubwino ogwiritsa nthito lupu?** *Has a friend ever recommended the use of IUDs to you?*	1. Inde / Yes 2. Ayi / No 97. Sindikudziwa / I don't know

MODULE K: CONTRACEPTIVE CHARACTERISTICS		
K1	**Mungathe kugwiritsabe ntchito njira inailiyonse yakulera itakhala kuti ikubweretsa mavuto?** *Would you ever use a method to avoid pregnancy if it caused unpleasant side-effects?*	1. Inde / Yes 2. Ayi / No 97. Sindikudziwa / I don't know 98. Sindikufuna kuyankha / I don't want to answer
K2	**Mungathe kugwiritsabe ntchito njira inailiyonse yakulera itakhala kuti ingabweretse mavuto pa zauchembele wanu?** *Would you ever use a method to avoid pregnancy if it affected your fertility?*	1. Inde / Yes 2. Ayi / No 97. Sindikudziwa / I don't know 98. Sindikufuna kuyankha / I don't want to answer
K3	**Mungathe kugwiritsabe ntchito njira inailiyonse yakulera ngati itakhala kuti ikuchepetsa chilakolako chogonana?** *Would you ever use a method to avoid pregnancy if it reduced your sexual pleasure?*	1. Inde / Yes 2. Ayi / No 97. Sindikudziwa / I don't know 98. Sindikufuna kuyankha / I don't want to answer
K4	**Mungathe kugwiritsabe ntchito njira inailiyonse yakulera itakhala kuti ndiyosadalirika kugwiritsa ntchito?** *Would you ever use a method to avoid pregnancy if it was inconvenient to use?*	1. Inde / Yes 2. Ayi / No 97. Sindikudziwa / I don't know 98. Sindikufuna kuyankha / I don't want to answer
K5	**Mungathe kugwiritsabe ntchito njira inailiyonse yakulera atakhala kuti okondedwa anu sanavomereze?** *Would you ever use a method to avoid pregnancy if your husband did not approve?*	1. Inde / Yes 2. Ayi / No 97. Sindikudziwa / I don't know 98. Sindikufuna kuyankha / I don't want to answer
K6	**Mungathe kugwiritsabe ntchito njira inailiyonse yakulera atakhala kuti ena azindikira kuti mukugwiritsa ntchito njirayi?** *Would you ever use a method to avoid pregnancy if others could find out about your use?*	1. Inde / Yes 2. Ayi / No 97. Sindikudziwa / I don't know 98. Sindikufuna kuyankha / I don't want to answer

K7	**Ndi njira ziti zakulela zemene zimaloledwa ndi amayi omwe ndi osakwatiwa kugwiritsa ntchito?** *Which methods are acceptable for never-married women to use?* **[READ OPTIONS & CHOOSE ALL THAT APPLY]**	1. Jekisoni / Injectables (depoprovera) 2. Kalera wa pankono / Implant (implanon) 3. Mapilisi olera / Birth control pills 4. Lupu / Intrauterine device (loop) 5. Kondomu ya abanbo / Male condom
K8	**Ndi njira ziti zakulela zemene zimaloledwa ndi amayi omwe ndi okwatira kugwiritsa ntchito?** *Which methods are acceptable for married women to use?* **[READ OPTIONS & CHOOSE ALL THAT APPLY]**	1. Jekisoni / Injectables (depoprovera) 2. Kalera wa pankono / Implant (implanon) 3. Mapilisi olera / Birth control pills 4. Lupu / Intrauterine device (loop) 5. Kondomu ya abanbo / Male condom