



UNIVERSITY OF GHANA
COLLEGE OF HUMANITIES
REGIONAL INSTITUTE FOR POPULATION STUDIES

**RELIGIOSITY AND PERCEPTIONS ABOUT INFERTILITY IN ABLEKUMA
SOUTH, ACCRA**

BY

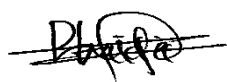
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THIS DISSERTATION IS SUBMITTED TO THE SCHOOL OF GRADUATE STUDIES,
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REQUIREMENT FOR THE AWARD OF A PHD IN POPULATION STUDIES DEGREE

AUGUST, 2024.

DECLARATION

I hereby declare that I, Naa Adjeley Mensah hereby declare that, except for references to other people's work, which has been duly acknowledged, this is the result of my own research conducted under the joint supervision of Prof. Stephen Owusu Kwankye, Prof. Adriana Andrea Ewurabena Biney and Very Rev. Dr. Abraham Boateng. I further declare that this work has neither in part nor in whole been presented for another degree.



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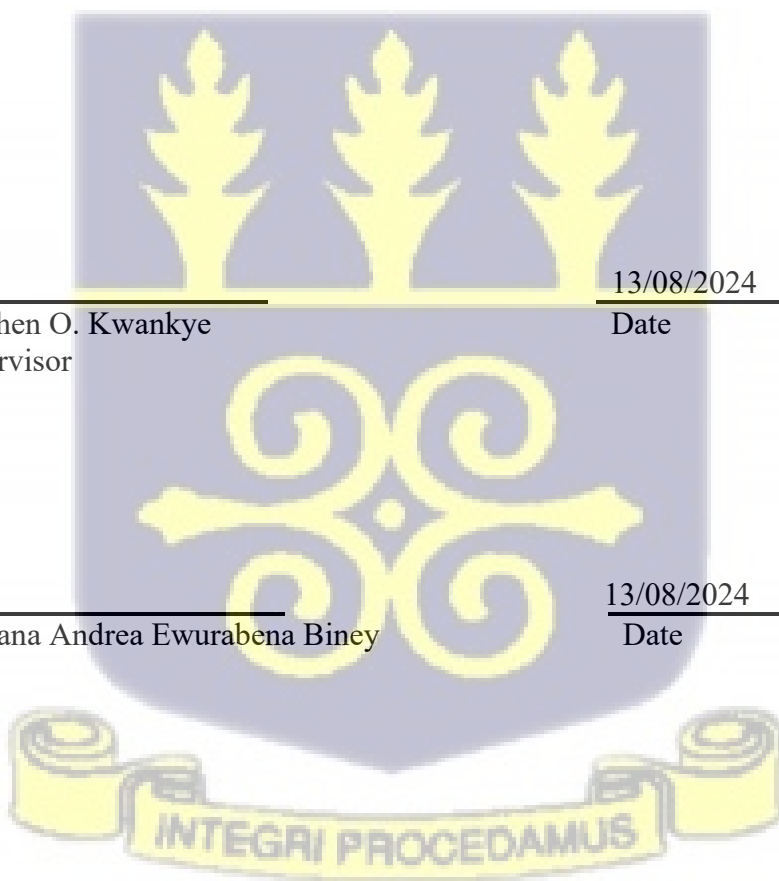
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DEDICATION

I dedicate this thesis to my loving husband, whose unwavering support and encouragement have been my solid foundation. To my wonderful children, who are my constant source of inspiration and joy. To my entire family, especially my in-laws, for their endless support and understanding throughout this journey. Their belief in me has been my guiding light. I thank them for standing by me from my undergraduate days to this significant milestone.



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*"Life isn't about waiting for the storm to pass; it's about learning to dance in the rain." –
Vivian Greene*

PhD life was difficult, like a terrible unending storm, but I am grateful to several anchors that held me throughout the journey.

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ABSTRACT

Infertility is a significant public health issue which is recognised as one of the six overlooked aspects of maternal health. It carries both physiological and mental health ramifications. Even in regions like sub-Saharan Africa, where birth rates are notably high, infertility remains prevalent and constitutes a major concern among couples or partners. Generally, the understanding of and attitudes towards infertility are inadequate, with causes often ascribed to supernatural or non-scientific phenomena. This misunderstanding contributes to stigmatisation of those believed to be infertile, influencing their pursuit of treatment. People facing infertility may simultaneously turn to medical, traditional, and/or faith-based interventions. Religion and religious beliefs serve as coping mechanisms for various challenging life situations. They offer hope during tough times, although "religion" itself is a complex term with over 17 definitions identified in scholarly literature. On the other hand, religiosity refers to the degree to which an individual follows their religious beliefs or convictions. These beliefs influence morals, behaviours, preferences regarding fertility, and approaches to addressing infertility. While religion plays a significant role in the narrative surrounding fertility, there is still limited understanding of how strict adherence to religious beliefs impacts views on infertility and its management.

The study has three objectives: to examine how respondents' religiosity aligns with their perceptions of infertility; to explore religious leaders' perceptions about infertility and its treatment; and determine how healthcare personnel navigate through their beliefs and those of their clients when treating infertility.

The study employed a convergent parallel mixed-method approach. For the quantitative aspect, 950 male and female respondents were sampled through a multistage sampling approach in the study community (Ablekuma South Metropolitan Area). The independent variable of interest was religiosity, measured using the Centrality of Religiosity Scale version 15, while the two

outcome variables were perceptions about treatment seeking and perceptions about primary solutions. Religiosity was categorized as highly religious, moderately religious, and less religious, while the outcome variables were binary in nature. Treatment seeking was categorized as either both partners seeking treatment or one partner seeking treatment, with the model predicting the outcomes for both partners. The second outcome variable, perception about infertility, was also a binary variable, categorized as medical or non-medical, with the model predicting medical as the primary solution. At the multivariate level, four binary logistic regression models were run after employing descriptive statistics and bivariate analysis using STATA version 18.

The qualitative aspect explored the perceptions about infertility among religious leaders and how healthcare workers navigated the religious context in their care of infertile clients. This involved in-depth interviews with 10 healthcare workers (obstetricians and gynecologists) and 17 religious leaders in the community. The data were analyzed separately, employing thematic analysis by bringing similar basic codes together to form organizing and overall global themes using Atlas. ti version 23.

Respondents' religiosity aligns with the perception that both partners should seek infertility treatment with those identifying as less or moderately religious showing a lower likelihood of supporting this approach. However, respondents' religiosity does not predict the perception that medical treatment is the primary solution. Variables such as education and blame for infertility predict both perceptions about treatment seeking and the primary solution, emphasising the need for education and community engagements. The second objective of the study focused on understanding the views of religious leaders regarding infertility and its treatment. From the analysis, three principal themes emerged: perceptions concerning infertility; attitudes towards assisted reproductive technology (ART); and proposed solutions. It was noted that religious leaders' understanding of infertility and ART was not

comprehensive, mirroring findings from the quantitative part of the research. Identified causes of infertility were categorised into physical and spiritual realms, with the latter including both human-induced and divine origins. Physical causes ranged from medical reasons, such as complications from abortions to non-medical factors like ignoring specific cultural rites. Despite the variety of cited reasons, explanations frequently circled back to spiritual interpretations. The viewpoints on ART among religious leaders varied significantly, falling into three categories: full acceptance, outright rejection, and a neutral or middle stance. They acknowledged their role in addressing infertility, suggesting that solutions should be delivered through both medical and spiritual approaches. The third objective of this study was to investigate how healthcare professionals manage the interplay between their own beliefs and those of their clients in treating infertility. This led to the identification of three main themes: solutions offered, barriers to solutions offered and faith integration. Predominantly, women were the ones seeking help at medical centers in varied psychological states including feelings of anxiety, depression, and hopelessness. Healthcare providers consistently offered solutions to infertility, but also acknowledged the hurdles in accessing these treatments. Identified barriers included the patients' acceptance of certain treatments, financial constraints, socio-cultural attitudes, the complexity of the adoption process, and religious considerations. While recognising the significant role of religion in infertility treatment, healthcare workers tended to focus more on scientific methods, given the ambiguous nature of religious aspects. However, they did advocate for their religious clients to supplement medical treatments with faith-based, non-intrusive practices such as prayer. Echoing the views of religious leaders, healthcare professionals generally agreed that a combined approach of religion and medicine offered the best solution to infertility.

The study concludes that a complex interplay of cultural, educational, and demographic factors influences individuals' beliefs and decisions regarding infertility treatment. This observation is

supported by some scholarly perspectives while contradicting others. Conversations with religious leaders and healthcare professionals further emphasize the crucial role of religion in addressing infertility. Both religious leaders and healthcare workers recognize the significant role that religiosity plays in the care of infertility. However, healthcare workers caution that certain rituals may be harmful, and religiosity can potentially cause rejection of some forms of medical intervention and delays in seeking treatment. Religious leaders believe that they offer solutions to infertile clients either through spiritual or psychological support. Their stance on Assisted Reproductive Technologies (ART) lies between acceptance, total rejection and neutral. This research extends the study on infertility by deepening our understanding of the many factors that influence the pursuit of infertility treatment. It emphasizes the need to consider various cultural, social, and educational aspects when addressing infertility issues in different communities.



List of Abbreviation

ART	Assisted Reproductive Technology
CAM	Complementary and Alternative Medicine
ENT	Ear, Nose and Throat
GHS	Ghana Health Service
IVF	Invitro Fertilization
MOH	Ministry of Health
OBGYN	Obstetrician and Gynaecologist
WHO	World Health Organization



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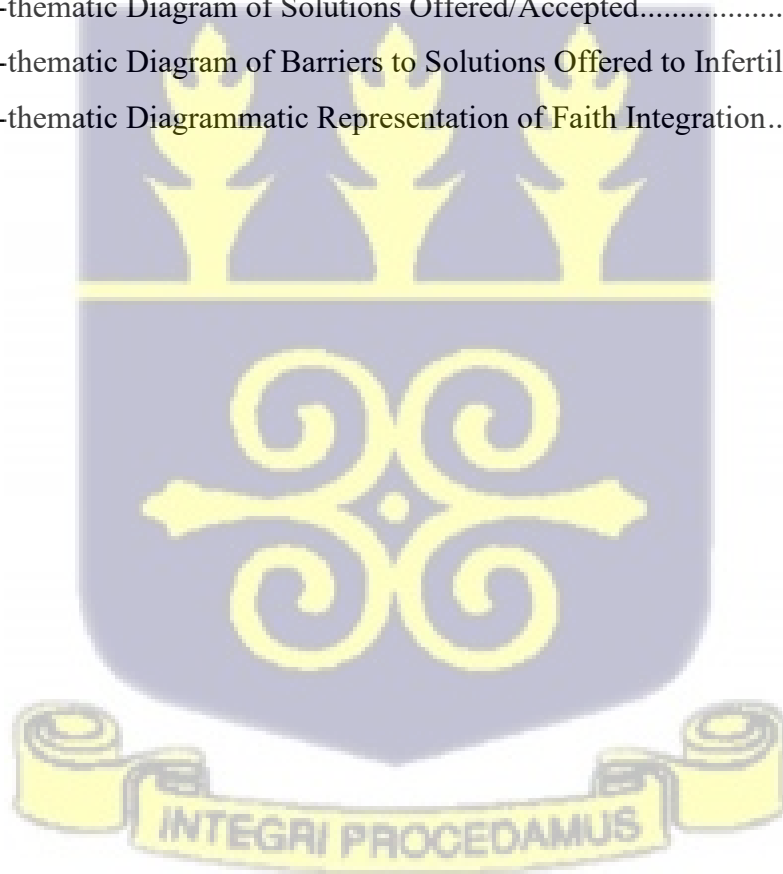
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CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

Infertility is a global reproductive health issue that affects people from diverse backgrounds. The incidence of infertility varies across different regions. However, it is estimated that 10 percent and 30 percent of couples globally and in sub-Saharan Africa (SSA), respectively, are infertile (Naab, Brown and Heidrich, 2013; Oti-Boadi and Oppong Asante, 2017; Esan et al., 2020; Hiadzi and Boafo, 2020). The statistics indicate that despite the high fertility rate for SSA, infertility is also high in the region (Hiadzi and Boafo, 2020). This implies that infertility is a reproductive health issue that requires strategies from policy makers to mitigate it.

According to the World Health Organization (WHO), “Infertility is a disease of the male or female reproductive system defined by the failure to achieve a pregnancy after 12 months or more of regular unprotected sexual intercourse” (WHO, 2020b, p. 1). Infertility can be either primary or secondary. A person is said to have secondary infertility if at least one previous pregnancy has been achieved, while primary infertility is defined as when a pregnancy has never been achieved (Nachinab, Donkor and Naab, 2019; WHO, 2020b). There are various definitions of infertility that may not resonate with the medical definition stated above. These definitions are based on one’s knowledge, social and cultural affiliations, and the importance placed on childbearing (Hiadzi and Boafo, 2020).

The causes of infertility vary between the male and female reproductive systems and are broadly placed under three main categories: the unknown, known treatable, and known untreatable (Esan et al., 2020). Some studies suggest that infertility may be attributed to supernatural causes (Donkor and Sandall, 2009; Aba et al., 2021). The experience of infertile couples is unique to the cultural context they live in. To exemplify, sub-Saharan African couples who are unable to conceive have higher rates of depression, suicidal thoughts, personal

attacks, marginalisation, lack of sexual desire, and reduced social acceptance (Ofosu-Budu and Hänninen, 2021).

There are gender differences in the experience of infertility in SSA, mainly because of the gender construction and the pro-natal nature of the region. Despite reductions in fertility rates across the globe, preference for children and large family sizes are still cherished in SSA (Nyarko and Amu, 2015; Nachinab, Donkor and Naab, 2018). Children are a stabilising agent for unions, a continuation of the family line, a way to secure bonds established between extended families, and a path to prestige in society for both men and women, but more especially women (Nyarko and Amu, 2015; Ntiamoah et al., 2018; Polis et al., 2020; Aba et al., 2021).

Motherhood has been interwoven into the socialisation process of a girl-child, and to many this provides a sense of achievement or fulfilment in adulthood, making women bear the brunt of the blame when a couple is unable to conceive. Women, especially in SSA, without any issue or issue of the preferred sex are seen as incomplete, of little value, or even cursed. They are sometimes pushed out of society and face several negative social, psychological and physical consequences (Naab, Brown and Heidrich, 2013; Alhassan, Ziblim and Muntaka, 2014; Hess, Ross and Gililland, 2018; Esan et al., 2020). However, the burden of not being able to conceive or have a live birth lies not only with the woman, but also with the man, family, society, and community in which they live.

There are different types of challenges or abuse faced by infertile people. These emanate from multiple directions and levels within the union and outside the union. For example, some studies suggest that some infertile women face conflicts in their union (Nyarko and Amu, 2015) or encounter intimate partner violence (Esan et al., 2020). These multifaceted and

multidimensional challenges lead to a sense of social segregation, and ultimately, the development of coping strategies to survive.

A significant number of people in the general population across the globe have a poor perception of infertility. Studies conducted in the African context revealed that respondents have poor knowledge of infertility causes and treatment. Most respondents perceive infertility to be a female disease (Donkor, 2008; Atijosan, Adeyeye and Ogungbayi, 2019; Bornstein et al., 2020). As a result, the problem is frequently considered to be caused by factors other than medical ones. Some attribute infertility to divine powers, witchcraft, abortion and promiscuity (Donkor, 2008; Atijosan, Adeyeye and Ogungbayi, 2019; Bornstein et al., 2020).

Moving beyond the African context, Adashi et al. (2000) undertook a multinational investigation on how infertility was perceived by the public in Western countries (including Belgium, France, Germany, Italy, Sweden and the United Kingdom, the United States, and Australia). According to the report, most people are unaware of the definition and prevalence of infertility. The results from the study showed that 38 percent of participants thought infertility was a sickness. This suggests that even in Western countries, there is a lack of understanding regarding the problem of infertility (Adashi et al., 2000).

Erroneous community perception about infertility leads to the labelling of people who are perceived to be infertile. In Malawi, people who are perceived to be infertile are called “Chumba” (for females) and “Gocho” (for males) (Bornstein et al., 2020). Each ethnic group in Ghana has its own name with a similar meaning. Thus, childless women were referred to as “Obonini” or “Osaadwee” by the Akans, “Kono” by the Ewes, and “Kene” by the Gas/Adangbes (Donkor, 2008). The stigma associated with these community level perceptions are manifested in existing systems of gender and power. Both men’s masculinity and females’ identity are questioned based on the perception of infertility (Bornstein et al., 2020).

Many people have used religion and religious convictions as a panacea for coping with a variety of significant life events (Latifnejad Roudsari, Allan and Smith, 2014). Religion, to many, provides some sort of hope, as couples who are unable to have children relentlessly seek help to address their infertility issues. For instance, results from a qualitative study demonstrated how religious and spiritual frames of reference changed infertile women's perceptions of infertility from an intolerable life crisis to a manageable process that can be dealt with to achieve spiritual growth and development (Roudsari and Allan, 2011). However, religion has been difficult to define and is often contested. Scholars may never agree on an essentialist definition of religion because there are at least 17 different definitions of it (Ammerman, 2020; Deagon, 2020; Knibbe and Kupari, 2020; Paul Victor and Treschuk, 2020).

Religion, according to Deagon (2020), is “a set of systematic beliefs in relation to a transcendent being, thing, or principle. For free exercise purposes, practising a religion involves engaging in formal or informal behaviour that aligns with those beliefs privately or publicly, in private or in public interactions, and in the community with others. Although the religion may be exercised privately, there should be some kind of community which internally regulates the set of beliefs and the related conduct” (p. 93). The concept of religion can be a two-edged sword. Some hold the opinion that the Creator expects people to multiply and has given them His blessings. However, others are of the view that people without the ability to conceive or multiply may be cursed by the same Creator or rewarded for their bad deeds (Ofosu-Budu and Hänninen, 2021c). Some turn to religion for purification, cleansing, forgiveness, and the gift of the fruit of the womb (Edirne, et al., 2010).

Religious leaders and worshippers acknowledge that the fruit of the womb is a gift from the Supreme Being (Hess, Ross and Gililand, 2018). Faith is associated with fertility rates at both individual and community levels (Dilmaghani, 2019; Götmark and Andersson, 2020). For example, Muslim and Roman Catholic leaders opposed certain aspects of family planning

during the 1994 International Conference on Population and Development in Cairo, Egypt, with their open opposition to contraceptive use and abortion (Götmark and Andersson, 2020). Their opposition to contraception was based on moral grounds.

Religion can also influence the acceptance of technologies that may assist couples to solve their infertility issues. These technologies are perceived as a means of disrupting and interfering with the natural or God-given childbearing process. Some allude to the decline of the significance of religion in personal and social life as being partly responsible for changes in family and fertility behaviour in the western world (Dilmaghani, 2019). The church is a pro-natalist organisation (Ntiamoah et al., 2018) with differences in doctrines reflecting in fertility differentials among religious groups. For instance, Protestants have been observed as having lower fertility as compared to Catholics, perhaps owing to the latter's stance on the use of family planning teachings (Dilmaghani, 2019).

Additionally, religion influences solutions to infertility, assisted reproductive technology (ART), and adoption. In Christianity, the “all is one in Christ” biblical verse helps shape congregants' thoughts toward adoption (Nwaoga, 2013). However, Islamic principles that emphasise that parents should not see themselves as the child's biological parents, but rather as guardians of a different child can create a sense of partial acceptability to adoption (Nachinab, Donkor and Naab, 2018). Capturing the influence of religion or religiosity on an outcome is a mammoth task because it has numerous scopes.

Religiosity may mean different things to different religious groups (Ntiamoah et al., 2018). For Christians, examples of religiosity include fasting, prayer, attending religious services, serving at church, reading the Bible, and observing commandments, especially the greatest ones: “loving God” and “loving your neighbour as yourself.” In contrast, for Muslims, important aspects of religiosity include practising ablution, fasting during Ramadan, making a pilgrimage

to Mecca at least once in a lifetime, and giving alms to the poor. Traditional religion, however, is a broad and ambiguous term that can be interpreted in modern contexts. Unlike Christianity and Islam, it does not revolve around a single doctrine, nor does it have a specific founder, scripture, or established liturgy or ritual. Generally, it includes all African beliefs and practices that are considered religious but are not associated with Christianity or Islam (Kanu, 2014).

While religion and religiosity in essence have shaped fertility and child preference in many societies, there is scant data and literature on how it is associated with infertility or how couples and the society perceive its influence on infertility, especially in SSA. Therefore, this study explored how religiosity influences perceptions about infertility.

1.2 Statement of the Problem

Nearly 80 million adults who are of reproductive age are thought to be affected by infertility worldwide, and infertility affects about 15 percent of all marriages (Asante-Afari, Doku and Darteh, 2022). Globally, there are different rates of infertility. Studies have shown that the majority of those affected reside in developing nations, where 5-30 percent of couples are infertile. Infertility prevalence rates in sub-Saharan Africa range from nine percent in the Gambia to 21.2 percent in northwest Ethiopia and from 20 percent to 30 percent in Nigeria (Tabong and Adongo, 2013b; Ntiamoah et al., 2018; Asante-Afari, Doku and Darteh, 2022).

The prevalence rate also differs by gender. In Ghana, it is estimated that 15 percent of women of reproductive age face infertility challenges (Oti-Boadi and Oppong Asante, 2017). Other studies have documented a prevalence rate of 11.8 percent for women and 15.8 percent for men in Ghana (Tabong and Adongo, 2013b; Ntiamoah et al., 2018; Asante-Afari, Doku and Darteh, 2022). Findings regarding how different sexes contribute to infertility in couples vary. Thus, the underlying cause of infertility could be grouped into male factors (40%), female factors

(40%), or a combination of both factors (20%) (Tabong and Adongo, 2013b). This suggests that research should focus on both males and females to address infertility issues.

Infertility is an unforeseen event that creates a chronic crisis in the person's life (Latifnejad Roudsari, Allan and Smith, 2014). Infertility creates challenges emanating from a multidirectional hierarchy, both within and outside the union. The magnitude of the issue of infertility could be understood by the importance placed on childbearing, motherhood, and manhood. The act of having children and raising them are significant milestones in people's lives and are closely related to the ultimate objectives of completion, happiness, and family integration (Brinton et al., 2017). This feeling of completeness is more pronounced in Sub-Saharan Africa where many societies are pro-natal, and the population is usually a young one with many young people moving into the reproductive ages. Thus, infertile couples experience the agony of unmet fertility goals and societal pressure that tends to challenge their self-worth and confidence, which is a major turning point in one's life (Roberts et al., 2020).

Couples who struggle with infertility may experience stigmatisation from family members and society leading to depression and feelings of inadequacy and low self-worth (Naab, Brown and Heidrich, 2013; Hiadzi and Woodward, 2019; Roberts et al., 2020; Armah et al., 2021). Family and friends may be a form of support during this difficult and stressful time. Despite this, research on broad societal perceptions of infertility is rare.

Couples also interact with the relevant healthcare providers who view the process of seeking treatment for infertility through their medical lens, and these perspectives are crucial to be explored. It is, therefore, important to examine infertility from different perspectives in society, namely the community, religious and the healthcare providers' perspective. Studies have failed to examine the multidimensional perspectives in understanding the challenges of infertility, something this study will highlight.

Another angle of infertility is its complex presentation as both a social and medical problem; but studies usually focus on only the medical aspect. This aspect is important because in pronatalist, strongly patriarchal societies, not having a son may be regarded as a form of social infertility (Pashigian, 2002); and in countries where children are anticipated to follow marriage in rapid succession, failure to conceive within six months may be regarded as severely problematic. This may present a distressing issue, even though the person may be fertile (medically) leading to a chronic stressor in a person who lives at different levels of social interaction, from the family to society (Grunberg, Miner and Zelkowitz, 2022). The reaction to this chronic stress is largely influenced by gender, the larger sociocultural environment, and the social context in which infertility takes place (Hiadzi and Woodward, 2019). Infertile patients' stress levels are linked to their sense of self, or how they define themselves in relation to social roles (Grunberg, Miner and Zelkowitz, 2022).

Building on the concept of infertility as a social component, one must consider how infertility interacts with other societal elements of life, such as religion. However, very few studies have investigated how these two concepts interact. Religious beliefs are a key element in influencing a person's social and personal behaviour, which makes religion a distinctive feature in regulating behaviour through the creation of social codes (Barro and Bado, 2021). Therefore, religion is an essential aspect of one's social life and thus requiring research focus. Unfortunately, there is minimal literature available on how religion shapes infertility in diverse ways, considering that infertility is a social issue and religion influences social behaviour.

Research that has been carried out over the years has examined infertility alone (Naab, Brown and Heidrich, 2013; Tabong and Adongo, 2013; Osei, 2016; Gerrits et al., 2017; Hiadzi and Woodward, 2019; Nachinab, Donkor and Naab, 2019; Hiadzi and Boafo, 2020; Polis et al., 2020; Roberts et al., 2020), with a focus on treatment-seeking behaviour, psychological stress, mental wellbeing, social relations, and self-identity, among others. There is very little literature

on the link between religion and infertility (Roudsari, Allan and Smith, 2007; Roudsari and Allan, 2011; Oti-Boadi and Oppong Asante, 2017; Hiadzi and Woodward, 2019; Hiadzi and Bofo, 2020; Ofosu-Budu and Hanninen, 2020; Grunberg, Miner and Zelkowitz, 2022). This paucity of literature addressing the issues of infertility and religion fails to consider the fact that both religion and infertility affects one's social being, through social interaction and constructions to achieve reproductive goals.

Furthermore, the infertility literature has not paid much attention to the complexity of health-seeking behaviour of infertile couples, considering the concurrent nature of seeking medical help. These studies also lack an exploration of health providers' thoughts on religion and infertility. Religion provides comfort and relief during a time of stress through social support and an increase in social capital (Roudsari and Allan, 2011), more so for Africans and Ghanaians where a high value is placed on religion (Oti-Boadi and Oppong Asante, 2017). Several empirical studies that examined how women with infertility issues cope with their situation revealed that infertility-related stress and depressive symptoms are significantly reduced when religious coping mechanisms are used (Oti-Boadi and Oppong Asante, 2017; Ntiamoah et al., 2018; Roberts et al., 2020; Grunberg, Miner and Zelkowitz, 2022).

This is probably because of the effect of religion on fertility; an intention so desired by infertile couples. Evidence suggests that such persons look for assistance from traditional, alternative, herbal, and religious sources (Hiadzi and Bofo, 2020). They attempt to exhaust all avenues in their pursuit of a child (Ofosu-Budu and Hänninen, 2021), with some believing or perceiving that solutions to their infertility lie not in their religion, but in other religions or religious bodies. A study conducted in Ghana to examine the treatment-seeking pattern of infertile Ghanaians revealed that most of the respondents sought orthodox or herbal medicine alongside religious help (Hiadzi and Bofo, 2020). This study aims to understand how the healthcare provider navigates his or her own religious beliefs with that of the patient.

The literature is silent on how religious leaders understand and conceptualise infertility. As this conceptualisation or understanding helps shape their discourse and approach toward issues surrounding infertility, it is also crucial because religion is a double-edged sword that can help or further frustrate the person dealing with infertility (Ntiamoah et al., 2018). Religion plays a role in union formation, with some religious teachings frowning on polygamy, and enforcing the continual existence of the union, things that are easily shaken by the absence or delay in childbearing (Roudsari and Allan, 2011). Moreover, religious leaders offer psychological help through counselling and social support to followers in distress including infertile persons. While religious leaders play these important roles and provide such support to persons experiencing infertility, there is paucity of data interrogating the understanding of religious leaders on issues of infertility.

Infertility as a medical issue has led to several studies focusing on the medical aspect because most infertility research uses samples of people who are already pursuing treatment from health facilities in Ghana (Donkor and Sandall, 2009b; Naab, Brown and Heidrich, 2013b; G. Nachinab, Donkor and Naab, 2018; Asante-Afari, 2019; Hiadzi and Boafo, 2020; Anaman-Torgbor et al., 2021) and elsewhere (Edirne, Gunher Arica, et al., 2010; Bokaie et al., 2012; Alhassan, Ziblim and Muntaka, 2014; Read et al., 2014; Anokye et al., 2017; Taghipour et al., 2020; Höbek Akarsu and Kızılkaya Beji, 2021). However, these respondents live in a society where they face numerous challenges as a result of this medical issue; and, according to research, even though they fit the medical definition of infertility, nearly half of the women do not seek treatment (White et al., 2006). There may be obstacles that prevent individuals from seeking treatment or seeking other forms of treatment including home remedies. Examining this issue at the community level combines both the medical and social aspects of the issue for a holistic approach.

Finally, most studies have looked at infertility from either a qualitative perspective or a quantitative perspective, with few providing both the numeric extent and the in-depth understanding of the situation (Roberts et al., 2020). There is limited literature on the link between religion and infertility. Infertility and religion are such delicate and personal subjects; they have many facets and are sensitive to societal differences, requiring a combination of methods to unearth deeper understanding.

This study aims to fill the research gap on how religion is associated with community views of infertility at various levels owing to the dearth of studies examining the relationship between infertility and religion, as well as theoretical and methodological gaps. It is anticipated that the current study's research focus, theory, and methodological approach will help to fill in some of the gaps in our understanding of the contextual factors influencing infertility and religion.

1.3 Research Questions

In light of the above discussion, the study seeks to answer the following questions:

- i. How do respondents' religiosity align with their perceptions of infertility?
- ii. What are religious leaders' perceptions of infertility and its treatment?
- iii. How do healthcare personnel navigate through their religious beliefs and those of their patients when treating infertility?

1.4 Rationale

This study is important for many reasons. The Sustainable Development Goal (SDG) 3 seeks to ensure healthy lives and well-being for all at all ages, and health, as defined by the WHO, is “a state of complete physical, mental and social well-being and not merely the absence of an infirmity” (WHO, 2020a). Infertility affects a person's social and mental well-being, with or without physical infirmity. This is a hindrance to achieving health, which is a basic right for

all. Addressing issues such as infertility will help in promoting health, as it requires collaboration across all sectors of health, considering it remains a highly sensitive topic.

Improving reproductive health through the provision of comprehensive reproductive health care is of public health importance and a global health concern. Implicit in the definition of reproductive health is that people can have a satisfying and safe sex life and that they can reproduce and have the freedom to decide if, when, and how often to do so (WHO, 2023). Reproductive healthcare entails the delivery of a fundamental package of efficient services that addresses health development, prevention, and treatment; and even though it receives little notice, this provision covers the management of infertility. Research of this nature will be relevant in shedding more light on the gaps in the provision of healthcare for infertile persons, thus a step further in achieving comprehensive reproductive healthcare.

Furthermore, this study's focus on religion and how religious leaders shape this discourse will help in policy formulation concerning infertility management in Ghana, especially where ART services are not financially and physically accessible to many. Religion has proved to be an important pillar in achieving total health because studies have revealed strong associations between spirituality and religious indices such as prayer, church attendance, self-rated religiousness, and health outcomes (Roudsari, 2008). Numerous positive health outcomes, including lowered blood pressure, stress management, reduced suicidal thoughts, and decreased depression, are significantly influenced by religious factors (Edirne et al., 2010; Roudsari, Allan and Smith, 2014; Romeiro et al., 2017; Jurić Vukelić, Kušević and Vuksan-Ćusa, 2021).

Owing in large part to the widespread supernatural and spiritual beliefs among many Africans, religious leaders are regarded as readily available and reliable help agents. People typically seek assistance not only when they are distressed, but also because they are prone to think of

others as potential sources of comfort and support (Adejumo and Bukola, 2017). Religious leaders' understanding of ART will similarly aid in how they communicate issues to their members and provide guidance on getting medical assistance.

Similarly, religion is an aspect of complementary and alternative medicine (CAM). CAM is described by the Cochrane Collaboration as "a broad domain of healing resources that encompasses all health systems, modalities, and practices and their accompanying theories and beliefs other than those intrinsic to the politically dominant health systems of a particular society or culture in a given historical period" (Bardaweel et al., 2013, p. 1). The World Health Organisation (WHO) estimates that complementary and alternative medicine (CAM) is used by more than three-quarters of the world's population (Edirne, Arica, et al., 2010). This study will contribute to the discourse around the use of CAM as a medical option in relation to coping with medical issues, which has attracted interest on a global scale.

Further to the contribution the study makes to the literature on CAM, is the incorporation of the voices of healthcare providers in the dialogue. It may be crucial to inform gynaecologists and obstetricians of the potential benefits (or problems) of religion and spirituality for infertile couples in resolving their marital problems. This will help in both policy formulation and practice. Policy formulation will help incorporate the religious aspects of infertility care in healthcare institutions. Practically, healthcare providers will be better informed to offer sufficient support and appropriate interventions that will contribute to the emotional, and wholeness of infertile women and men. Likewise, healthcare professionals' understanding will provide them with religious and spiritual coping mechanisms that can help them modify their constructions of motherhood and fertility.

Owing to several factors, including how religion is conceptualised, spirituality, and the social and medical aspects of infertility, the connection between religion and infertility appears to be

complex. However, Ghana has paid little attention to this aspect of reproductive healthcare. As a result, this study will fill a research gap in this field of infertility research, making it not only timely, but also significant given the contributions it is positioned to make.

1.5 Objectives

The general objective of this study is to examine how religiosity influences perceptions about infertility to contribute to knowledge and inform policy and practice. Specifically, the study seeks to:

- i. Examine how respondents' religiosity aligns with their perceptions of infertility.
- ii. Explore religious leaders' perceptions about infertility and its treatment.
- iii. Determine how healthcare personnel navigate through their beliefs and those of their patients when treating infertility.

1.6 Organisation of the Study

The study is organised into eight chapters. Chapter One presents the background of the study, a statement of the problem, rationale, study objectives, and research questions. Chapter Two reviews the relevant literature on the subject matter, stating the identified gaps, theoretical underpinnings, and conceptual framework while Chapter Three provides information on the methodological approaches that are employed in this study. Chapter Four presents results of the analysis using descriptive statistics from both the quantitative survey and the qualitative in-depth interviews. Chapter Five focuses on presenting results from the bivariate and multivariate analysis of the quantitative data; and Chapters Six and Seven present the results from the qualitative analysis from the in-depth interviews with religious leaders and healthcare professionals, respectively. The focus of the final chapter is to summarise the key findings from

the study, makes conclusions and presents relevant recommendations for both policy and future research.



CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

Infertility is a complex medical and emotional challenge that affects countless individuals and couples worldwide. Defined as the inability to conceive a child naturally after a year of regular, unprotected intercourse (Vander Borgh and Wyns, 2018), infertility can have profound physical, emotional, and social repercussions. The experience of infertility goes beyond its medical definition, often plunging couples into a journey marked by hope, disappointment, and resilience (Chung and Rosenwaks, 2023).

For individuals and couples who long for parenthood, infertility can bring about a range of emotions, including frustration, sadness, guilt, and even a sense of inadequacy (Laganà and Guglielmino, 2023). The quest for a child can become an all-encompassing endeavour, leading to both personal and relational strain. As medical interventions become part of the equation, couples may find themselves grappling with invasive procedures, financial burdens, and the uncertain outcomes associated with fertility treatments (Chung and Rosenwaks, 2023; Jarnagin, Thomas and Herscher, 2024).

Religious convictions play a pivotal role in shaping how individuals and couples interpret and cope with infertility. As people grapple with the challenges and uncertainties of fertility struggles, their religious beliefs can play a pivotal role in shaping their perceptions of the condition and providing them with coping mechanisms. Religious beliefs provide a lens through which individuals view their infertility journey. Different faiths offer diverse explanations for the trials and tribulations one may face, including the inability to conceive.

The intersection of faith and fertility can influence perceptions of the condition, dictate coping mechanisms, and even guide decisions regarding medical interventions. This review therefore

assesses infertility in the context of religion. Ensuing sections discuss the alignment of religious beliefs with infertility perceptions, the role of religion in assisting couples with infertility, and the role of healthcare personnel in infertility treatment in the context of religion. Understanding the interplay between religious beliefs and the experience of infertility is crucial not only for providing comprehensive care, but also for fostering respectful dialogue between healthcare providers, religious leaders, and those affected by infertility.

2.2 Religious Beliefs and Perceptions of Infertility

Religion is broadly defined as a system of beliefs, practices, and values that are centred around a transcendent or divine power (Bowie, 2006). It is multifaceted and encompasses diverse doctrines, traditions and rituals that span thousands of years among cultures. Religion also plays a key role in providing a framework for understanding the purpose of abstract concepts like the moral and ethical guidelines for human behaviour, and the mysteries of existence (Main, 2021). For this reason, religion tends to influence how persons and communities perceive and respond to infertility (Höbek Akarsu and Kızılkaya Beji, 2021), especially since 84 percent of the world identified with a religious group in 2010 (Hackett and Grim, 2012). While the specifics of religious practices and beliefs may vary across faith traditions, several commonalities emerge regarding how religion influences perceptions about infertility.

For instance, there is the view that procreation is a divine mandate in various beliefs. In Christianity, which forms the major religious group in the world, the biblical command to ‘Be fruitful, and multiply’ in Genesis 1: 28 (King James Bible, 2013) underscores the importance of bearing children as part of God’s plan. This command is deeply ingrained and many denominations emphasise the importance of having children and expanding families, which makes infertility seem to be a source of spiritual struggle. This is similar in Judaism and Islamic beliefs (Al-Bar and Chamsi-Pasha, 2015).

However, the faiths, as indicated in their respective scriptures, also offer messages of hope through stories like that of Sarah and Abraham, who experienced infertility before conceiving Isaac (King James Bible, 2013; The Qur'an, 2021; The Tanakh, 1999). Although there are such messages of resilience, experiences of infertility could lead to despair for couples considering the mandate given to Christians. Among Roman Catholics, who form one of the largest proportions in Christianity, studies show that the connections between spirituality and fertility tend to lead to negative communications about infertility (Cox, 2013; Rubio, 2015). Couples would, therefore, feel disappointment, worthlessness, sadness, and emotional distress (Nouman and Benyamini, 2019; Jarnagin, Thomas and Herscher, 2024).

Another perception of infertility stemming from religious beliefs is the view of infertility as a curse from God. In the Bible, 1 Samuel 1:5 speaks of Hannah who had no child because God had “shut up her womb”, and for Rachel who prayed to God to open her womb and after having a child, said that, “God hath taken away my reproach” in Genesis 30:22 (King James Bible, 2013). This did not only apply to women, but to men as well. God could punish men who had sinned by hindering their wives from having children as found in Hosea 9:14, where there are threats of barren or miscarrying wombs as a curse to sinful husbands (King James Bible, 2013; Oren-Magidor, 2015).

In addition, fertility can be viewed as a fulfilment of man in his/her duty to God for being His creation. In Islam, which is another leading religious faith worldwide, the Qur'an 16:72 notes procreation as a fulfilment of one's duty to God (The Qur'an., 2021). In such instances, infertility is seen to be a hindrance in one's pursuit of fulfilling their duties to God. Having a family is thus highly valued; and in situations of infertility, the Islamic Faith teaches that even as medical interventions are sought, the couple should rely on Allah's will as Allah is the one who grants children (Sachedina, 1990). Some religious beliefs could, therefore, lead to couples perceiving infertility as a test or challenge from a higher power to strengthen their faith. This

is exemplified in the story of Zakariya in Qur'an 19:7-8 who was 'blessed' with a son by God after his wife's barrenness (The Qur'an, 2021). In Christianity, the story of Abraham and Sarah also exemplifies infertility as a test of one's faith in God. Such passages tend to lay the foundation of infertility being seen as a curse and fertility being a favour from God.

The story also exemplifies the theme of divine intervention and divine blessing in infertility. Religious couples may view fertility as a divine intervention, with their God or divine being worshipped, as the giver of children. Among Christians, Psalms 127:3 notes that "Children are a heritage of the Lord: and the fruit of the womb is his reward" (King James Bible, 2013). In Hinduism, fertility is linked to "Dharma", where being able to have a child is an indication of divine intervention and spiritual growth (Sallam and Sallam, 2016). Couples, therefore, visit fertility deities to pray and perform rituals to seek children (Mishra and Dubey, 2014). As such, infertility may be seen as an opportunity for spiritual growth. The Hindu Faith, however, also emphasises karma and reincarnation, which suggests that present circumstances may be due to past actions. Thus, although fertility is viewed as a good thing, infertile couples get the solace that there may be future opportunities for parenthood (Covington, 2015). Those who accept it do so with the perception that infertility is a part of a divine authority's will or plan for one's life.

The practices of a religion tend to include prayers to a higher power, with faith that miracles can happen. This translates into the perception that believing in prayer, faith healing, or religious rituals can cure infertility (Sallam and Sallam, 2016; Hiadzi, Boafo and Tetteh, 2021). Healing centres for infertile couples, especially women, have been on the rise, and the couples facing this problem go to priests who assist them, or they go to prayer programmes with the hope of having their infertility healed (Romeiro et al., 2017; Adejoh et al., 2020). Couples may go to churches, as found in the case of Christians, or prayer centres or shrines, and stay for

weeks or months, expecting infertility healing (Mosalanegad et al., 2014; Romeiro et al., 2017; Gavashelishvili, 2018).

Closely linked to the perception of infertility as something that can be healed through prayer, is the perception that infertility can be eliminated through miraculous interventions from a deity (Oren-Magidor, 2015). In the various religious groups, there are stories and sermons of miracles performed in different instances. These stories and sermons generate hope in the couples and this hope further fuels their pursuit. For instance, in Jewish and Christian sermons, miracles like the parting of the sea by Moses, and the falling walls of Jericho are proof of the awesome power of God (King James Bible, 2013). This leads to the belief that miracles can happen for a couple. In Spain, a Catholic Marian Shrine has been dedicated to the “Virgin of Alcala de los Gazules” and has become a popular centre for her record of helping women and couples worldwide to have a child (Whitehead, 2018). This rekindles the faith of couples who would want to have children.

Amidst the perceptions of infertility arising from religious beliefs is the noteworthy fact that in cultures where religion becomes intertwined with traditions, infertility perceptions can vary based on the interpretation of the religious teaching in that culture. For instance, in societies where the perception of fertility as a mandate is high, society may impose stricter norms and expectations for couples compared to their counterparts who may adopt a more lenient stance towards infertility. In Judaism, the command to be fruitful indicated in the Tanakh makes children a central component of fulfilling the covenant with God (The Tanakh, 1999; Schenker, 2013). Stricter expectations could lead to feelings of incompleteness for couples within the context. In extreme cases, there is discrimination or ostracisation despite religious teachings that emphasise compassion and support for all persons (Mouyal, 2020; Abu-Sharkia, Taubman-Ben-Ari and Mofareh, 2023).

Societies with distinct gender roles and expectations can also impact how infertility is perceived. In cultures where a woman's primary role is seen as motherhood, infertility may lead to blame or shame directed at the woman (Naab and Kwashie, 2018; Tiu et al., 2018; Yao, Chan and Chan, 2018; Okoro, 2020). Religious teachings may advocate for compassion and understanding, but these teachings can be challenged when societal pressures prioritise certain roles over others. Dissonance between cultural expectations and religious ideals can strain individuals' mental health (Oti-Boadi and Oppong Asante, 2017). Promoting a balanced understanding of gender roles and the diversity of individual identities, informed by religious principles, can alleviate this conflict.

Inasmuch as religious beliefs have been influencing perceptions about infertility, religious teachings tend to emphasise positive perceptions. For instance, many religious teachings emphasise the value of compassion and healing. Modern medical advancements in fertility treatments align with these principles, as they offer hope and the potential for fulfilment of the desire for parenthood (Laganà and Guglielmino, no date; Romeiro et al., 2017). Both religious teachings and modern medical ethics stress the importance of informed decision-making and ethical considerations (Green, 2013). Harmonies can emerge when individuals are empowered to make choices that align with their faith and values.

Religious communities often emphasise the importance of support and communal care. In the face of infertility, these values can be reinforced through providing emotional and practical assistance to those navigating fertility challenges (Grinstein-Cohen, Katz and Sarid, 2017; Nouman and Benyamini, 2019). Religious teachings often encourage the pursuit of knowledge and understanding. This can harmonise with modern efforts to educate individuals about fertility, enabling them to make informed decisions and seek appropriate medical assistance.

The relationship between religious teachings and modern infertility understanding can be complex, marked by potential conflicts and harmonies. While conflicts between religious teachings and modern understanding of infertility exist, there is also a growing effort to find harmonies that allow individuals to navigate these challenges, while remaining faithful to their religious convictions. In this evolving landscape, open dialogue, compassionate support, and ethical considerations play pivotal roles in addressing the needs and concerns of those affected by infertility within religious contexts. By acknowledging the diversity of beliefs and approaches and fostering respectful discussions, healthcare providers, religious leaders, and individuals can work together to bridge the gaps and offer holistic support to those on their journey through fertility challenges. The ensuing section looks at the role of religion in assisting couples with infertility.

2.3 Religion's Role in Assisting Couples with Infertility

Infertility can shake the very foundations of one's identity, relationships, and hopes for the future. In the face of such a challenging journey, individuals and couples often turn to their faith as a source of comfort, guidance, and resilience. Religion, characterised by its diverse belief systems, rituals, and moral frameworks, offers a unique lens through which individuals and communities interpret and respond to the trials of infertility. For many, religious teachings provide a sense of purpose, ethical direction, and a spiritual context within which to frame their experiences. The religious community, in turn, often plays a pivotal role in offering emotional support, prayerful solace, and practical assistance during this difficult journey. Consequently, this section examines the ways in which religious communities provide avenues for coping with the emotional toll of infertility, including the stigmatisation and social pressure that sometimes accompanies it.

In times of distress, religious practices can serve as a powerful source of emotional and psychological support. These practices offer a sense of solace, connection, and purpose,

helping individuals and couples navigate the challenges of infertility with renewed strength. One of the leading aspects of religion that assists couples facing infertility is prayer and meditation (Mosalanjad et al., 2014; Hiadzi, Boafo and Tetteh, 2021). Prayers are a deeply personal means of communication with the divine, and praying for guidance, strength, or a resolution to fertility challenges can be deeply soothing and help individuals process their emotions (Rouchou, 2015; Taghipour et al., 2020; Waldrow, 2022).

Couples can, therefore, engage in quiet contemplation or converse with a higher power for fertility, guidance, or strength by crafting personal prayers or supplications to articulate their emotions, fears, and hopes in their own words, fostering a sense of intimacy with their faith (Kim, 2011; Radkowska-Walkowicz, 2014; Batool Hasanpoor-Azghady et al., 2019). Using prayer beads, rosaries and even fasting as a meditative tool, allows for repeated recitation of prayers, offering a rhythm that can calm the mind and focus thoughts on spiritual intentions that enable an infertile couple to find patience and hope, irrespective of their religious beliefs (Moss and Baden, 2015; Whitehead, 2018).

Religious symbols and artefacts can likewise serve as tangible reminders of faith and hope. Couples might find comfort in wearing or carrying these symbols, creating a physical connection to their beliefs. Wearing religious amulets or charms associated with fertility can serve as constant reminders of faith, protection, and the desires for parenthood (Jones and Olsan, 2015). Visual representations of fertility figures or sacred stories, such as images of childbirth or nurturing figures, offer visual comfort and inspiration. Added to this, couples facing infertility could perform religious rituals and ceremonies specific to their faith that focus on healing, hope, and acceptance.

For example, ceremonies that are specific to fertility, such as blessings for conception or prayers for childbirth, provide a focused space for individuals to express their desires and

receive blessings from religious leaders or elders (Tabong and Adongo, 2013a; Boddu and Narasimhan, 2023). They could equally visit sacred sites or embark on pilgrimages dedicated to fertility deities or figures that allow individuals to engage in a transformative journey, seeking divine intervention and finding solace in the process (Irimiás and Michalkó, 2013; Gavashelishvili, 2018).

Another avenue through which religion can assist couples facing infertility is through the provision of religious scriptures and sacred texts. Texts like the Bible, Qur'an, Tanakh, etc. often contain stories of individuals who faced challenges and adversity (King James Bible, 2013; The Qur'an, 2021; The Tanakh, 1999). Reflecting on these stories can provide a sense of connection and inspiration. Texts may also offer passages that provide comfort and wisdom during difficult times. Such texts also encourage gratitude for the blessings one does have. Embracing an attitude of gratitude can help couples reframe their perspectives and find solace in the present moment, even in the midst of challenges.

Added to this, religious communities provide a sense of belonging and shared values. Participating in religious gatherings, support groups, or community events offers couples facing infertility a space to share their experiences, receive empathetic understanding, and build meaningful connections (Gavashelishvili, 2018). This provides an invaluable source of emotional support, understanding, and solidarity. Religious communities may also establish support groups specifically for individuals and couples dealing with infertility. These groups offer a safe space to share experiences, exchange coping strategies, and find comfort in mutual understanding. Communal gatherings, whether centred around religious holidays or specific fertility-related events, bring people together for mutual encouragement and emotional connection (Whitehead, 2018).

An integral part of religion for infertile couples deals with religious leaders who offer spiritual guidance and counselling tailored to the emotional and psychological aspects of infertility (Gavashelishvili, 2018; Sallam and Sallam, 2016). They offer insight into religious teachings that promote resilience and offer practical advice for coping (Hiadzi et al., 2021). Religious leaders, such as priests, imams, rabbis, or pastors, provide spiritual counselling that address emotional struggles while offering religious perspective, compassion, and advice (Moss and Baden, 2015; Taghipour et al., 2020). In many religious communities, seeking intercessory prayers from clergy members, religious leaders, or fellow believers is common. The act of sharing one's struggles with others and requesting their prayers can create a network of support and empathy (Oren-Magidor, 2015).

The psychological and emotional support provided by these religious practices can be transformative for couples facing infertility. They offer a holistic approach that addresses both the emotional turmoil and the spiritual dimensions of the journey. By integrating these practices into their lives, individuals and couples can find a sense of purpose, connection, and resilience that helps them navigate the complexities of infertility with a greater sense of hope and strength.

2.4 Religious Leaders' Perceptions of Assisted Reproductive Technology (ART)

In the realm of assisted reproductive technology (ART), the intersection of faith and science is a complex and often contentious terrain (Paulson et al., 2016). ART, also known as fertility treatment, is a “technology used primarily for infertility treatments” (Murugan and Manimekalai, 2016, p. 61). It encompasses procedures such as in-vitro fertilisation (IVF), surrogacy, and various reproductive interventions and has revolutionised the possibilities for couples facing infertility (Meldrum, 2016). These technologies offer newfound hope and the potential for parenthood to countless individuals who would otherwise remain childless. However, the moral and ethical implications surrounding ART have spurred ongoing debates, making it imperative to examine the perceptions and stances of religious leaders.

Religious leaders, often revered as spiritual guides and moral authorities within their communities, wield significant influence in shaping the perspectives of their followers. Their interpretations of religious doctrines and ethical principles can profoundly impact the decisions and choices made by individuals and couples grappling with infertility. In certain contexts, interventions like in-vitro fertilisation (IVF) might be seen as a disruption of divine plans for conception (Hiadzi, Boafo and Tetteh, 2021; Nicolas, 2021). However, others like the Jewish law permits and even encourages fertility treatments like the IVF, demonstrating a pragmatic approach to addressing infertility (Asplund, 2020).

Understanding how religious leaders perceive and respond to ART is crucial in comprehending the broader societal and moral dimensions of this medical advancement. Religious perspectives on ART are multifaceted and often reflect the unique theological, moral, and cultural beliefs of each faith tradition. While there are general trends within each tradition, individual believers and religious leaders may interpret these perspectives differently. The complexities of modern reproductive technology challenge religious communities to engage in ongoing ethical discussions that balance advancements in science with deeply held spiritual values.

Among Christians, the Catholic Church emphasises the sanctity of human life from conception and is generally critical of ART techniques that result in the destruction of embryos or the separation of procreation from marital relations (Negrut and Pop, 2022). IVF is often viewed as problematic, owing to its potential to result in excess embryos, which may be discarded or frozen (Dierks, 2023). Among Protestants, however, perspectives on ART differ, yet many emphasise how important it is for medical advancements to be used responsibly. Among Anglicans, Protestants, Sunni Muslims, and Coptic Christians, it has been found that IVF can be permitted under specific guidelines (Sallam and Sallam, 2016).

In Islam, adoption is not accepted, and the couple is encouraged to cure their infertility (Al-Bar and Chamsi-Pasha, 2015). ART can be permitted when it involves using the gametes from only the married couple (Chamsi-Pasha and Albar, 2015). The majority of Orthodox Jewish scholars refuse third party involvement in ART and permit forms of ART that align with Jewish law and principles geared towards respect for life (Schenker, 2013; Sallam and Sallam, 2016; Serour and Serour, 2017). Alternatively, conservative and reform branches of Judaism tend to be more permissive on ART, and recognise that parental intent and the child's wellbeing are important (Schenker, 2013).

Among the Hindus, ART perspectives are diverse as a result of the various beliefs and practices within the religion. Some Hindus are of the view that ART fulfils the dharma (duty) of procreation, whereas others believe that ART tampers with the natural order of procreation (Deonandan, 2020). Perspectives of Buddhists on ART are influenced by “ahimsa”, which is the principle of non-harming and the understanding of suffering (Sivaraman and Noor, 2016). While there is generally no single stance on ART, some Buddhists are concerned about the potential harm that ART could bring to the child (Ying, Wu and Loke, 2015). It is, therefore, clear that the stance of various religious groups on ART depends on the type of ART being pursued by the couple. Furthermore, religious leaders could be pivotal in guiding their communities through such issues.

Religious leaders could interpret and communicate ART perspectives, but this requires a consideration of the socio-cultural context of the community, as well as their willingness to uphold sacred teachings, address challenges, and foster understanding within their various communities. Through this, religious leaders can find a balance between doctrinal adherence and showing compassion to individuals facing fertility challenges, by helping individuals understand the practices that align with the faith, as well as why some methods may not align with the principles of the faith (Jimoh et al., 2023). As technology advances, religious leaders

play a role in creating an environment where concerns about ART can be addressed with the aim of empowering individuals to make decisions based on the understanding of religious teachings on ART. This can be achieved with the assistance of healthcare personnel who will thoroughly explain these advancements (Tomkins et al., 2015). By this approach, greater emphasis can be placed on the ethical intentions of the methods.

2.5 Healthcare Personnel Navigating Religious Beliefs in Infertility Treatment

In situations where religion intersects with faith, healthcare personnel are challenged with balancing their medical expertise with respect for religious beliefs or convictions. They may require cultural competence, sensitivity, and effective communication in dealing with such situations. This section of the review, therefore, considers the challenges healthcare personnel usually face, the ethical considerations they may have, and the strategies for healthcare providers to effectively communicate and collaborate with religiously diverse patients.

One of the key challenges that healthcare personnel tend to face when working in multifaith and multicultural societies is the issue of patients' beliefs. These beliefs strongly influence patients to question or even refuse certain medical procedures (Serour and Serour, 2017; Klitzman, 2018). For instance, in Ghana, IVF centres exist, and ART has been in the country for over three decades (Inhorn and Patrizio, 2014; Anaman-Torgbor et al., 2021). Even though this counts as a success story in sub-Saharan Africa (Ombelet and Onofre, 2019), issues like religious beliefs, among other challenges may hinder couples from accessing ART, and may even stop persons who know of it from advising others to pursue ART alternatives (Hiadzi et al., 2023). Besides this, refusal of treatment as a result of religious beliefs could lead to liability and legal concerns, making the determination of when to respect the choice of a patient and the time to intervene complex, as found in an exploratory qualitative study in Quebec (Bouthillier and Opatrny, 2019). Healthcare professionals in such situations may, for this reason, find themselves in a dilemma, given that patients would not want to go against their beliefs.

There may be several other challenges hindering healthcare professionals from effectively navigating religious beliefs. For instance, when there are diverse religious beliefs, healthcare professionals must be knowledgeable about a wide range of faith traditions, and this is difficult in a multifaith society (David Napier et al., 2014; Weinstock, 2014). Understanding the religious contexts is a required cultural competence, and healthcare personnel should avoid assumptions or stereotypes in order to properly navigate these beliefs (Blanchet Garneau et al., 2018). Although the attempt to respect the autonomy of patients and their rights to decisions can conflict with the duty and beliefs of the healthcare professionals, it is important to note that the wellbeing of the patient comes first, and professionals must strike the right balance between honouring one's autonomy and ensuring that the best interests of patients are fully considered (Purtilo and Dogherty, 2011).

Without adequate time to discuss religious beliefs and their potential effects on medical decisions, professionals may not be able to facilitate open and respectful conversations about religious beliefs and medical decisions; and there may be the challenge of religious beliefs influencing patients and their family members' opinions and decisions about certain medical procedures (Brown et al., 2020; Simpson-Tirone, Jansen and Swinton, 2022). It becomes crucial to be aware of these challenges so as to reduce insensitivity or misinterpretation of the values of patients. To navigate these challenges, healthcare professionals must be culturally competent, humble and open-minded. Being fully conscious of these, healthcare professionals can approach each situation with respect, sensitivity and collaboration with the patients and their families (Pesut et al., 2017; Sarin and Lunsford, 2017; Ørtenblad, Meillier and Jönsson, 2018).

Challenges tend to go with ethical considerations, which should be addressed for healthcare personnel to properly navigate religious beliefs among infertile couples and themselves. Achieving this requires some best practices and strategies to help healthcare professionals

navigate religious beliefs. Firstly, effective communication is vital. Healthcare professionals must communicate their decisions and concerns with infertile patients to encourage understanding and effective collaborations (Willer, 2014; Mosconi et al., 2021). Patients could be encouraged to share their religious beliefs and values through open-ended questions (Willer, 2014). For instance, healthcare providers could ask patients if there are any religious practices they should know of before and after sharing treatment options.

After asking these questions, they should be willing to listen attentively to the preferences and concerns of patients to show that they respect these beliefs (Gameiro et al., 2019). There should be no need to make assumptions just based on the patients' appearance, as this could lead to misunderstanding. Healthcare professionals need only ask and find out more through neutral and respectful language. If these beliefs are 'erroneous', judgments and personal opinions of healthcare providers must be discarded, and attempts should be made to listen and educate the patients on the best practices and traditions. Understanding these communication strategies for different faiths can help the provider to approach patients with respect and sensitivity.

Added to this, educating oneself on the various religious beliefs in one's context could go a long way to finding solutions that can be accepted by patients (Swihart, Yarrarapu and Martin, 2018). Some practices, such as dietary restrictions, rituals and even fasting practices, could aid healthcare providers in bringing out tailored plans for patients (Attum et al., 2023). Individualised care plans could help patients in being more committed to the treatment if it is in line with their schedules and dietary plans. Providers could include these preferences in medical records to ensure that other providers are aware of and respectful of these beliefs.

Another communication tactic is to create a welcoming and inclusive environment for all religious backgrounds to make patients feel comfortable (Schuklenk and Ricardo, 2016; Malone and Dadswell, 2018). Whenever there is a language barrier, healthcare providers could

find culturally sensitive interpreters to ensure that communication is accurate. Treatment procedures should then be done in a clear and simple language, so that patients can be fully involved in the decision-making process. Beside the conversations, educational materials that address common issues from a religious perspective could be offered to patients to help them make informed decisions.

Collaborations also aid in navigating religious beliefs. Healthcare providers must be willing to collaborate with ethicists, religious scholars or chaplains when faced with complex considerations, as their insights may prove invaluable (Gerrits, et al., 2017). In situations where patients are not comfortable, providers could collaborate with their religious leaders to better understand the practices to provide more tailored care (Jafarzadeh-Kenarsari et al., 2015). This collaboration should, however, be handled with ethics to ensure the confidentiality of patients, their autonomy, and informed consent. Adopting such strategies could help healthcare providers build trust, foster effective communication, and provide patient-centred care that respects diversity of religious beliefs of patients. Such an approach improves the satisfaction of patients and contributes to better outcomes for them.

2.6 Conclusion

The review shows that individuals and couples facing infertility, especially in religious contexts, tend to align their religious beliefs with their perceptions of infertility. Religious teachings and values significantly influence how individuals view the experience of infertility, with procreation often being considered a sacred duty. This happens irrespective of the religious belief, and since over 70 percent of the world identifies with a religious faith, infertility and fertility perceptions would be highly influenced by these beliefs. On the role of religion in assisting couples with infertility, evidence from the review indicates that religion serves as a key source of solace, emotional support, and guidance for couples facing infertility. Religion offers a framework through which the challenges of infertility can be faced, and

religious leaders and communities could play a key role in providing both emotional and practical assistance.

The review also looked at ART, and the multifaceted stance of religious leaders towards it. The review found that religious authorities may endorse or accept certain forms of fertility treatment, and others may hold reservations or prohibitions as a result of ethical and theological considerations. Since it is crucial for healthcare personnel to navigate these issues, some challenges faced by healthcare personnel when navigating their own religious beliefs and those of their patients while providing infertility treatment were reviewed. The review found that healthcare professionals, in the context of multifaith societies, may have to delicately balance their personal convictions and the medical care they deliver.

These findings emphasise the importance of culturally sensitive and religiously informed care for couples experiencing infertility. Healthcare providers should be attuned to the religious beliefs and values of their patients, respecting their choices while providing medically sound options for treatment. Religious leaders can also play a pivotal role in alleviating the emotional burden of infertility within their communities. They can offer spiritual guidance and promote compassionate and inclusive attitudes toward those facing infertility challenges.

From the review, however, certain gaps are identified, especially in developing countries like Ghana. Although religion plays a key role in the population, only a few studies explored fertility treatments within the context of the current study. This stems from ART knowledge being limited in the Ghanaian context, which calls for more studies on ART in Ghana (Hiadzi, Woodward and Akrong, 2023). Ghana introduced ART nearly thirty years ago, and the nation now boasts of numerous ART facilities. Nevertheless, as ART services are predominantly provided by private medical practitioners, they tend to come with a substantial price tag. Consequently, only a limited portion of the Ghanaian population, primarily those from the

middle class and higher income brackets, can avail themselves of ART. Furthermore, the absence of a national regulatory framework for overseeing the practices of these private providers of fertility services through ART has led to varying levels of service quality and consistency.

This study, therefore, attempts to fill the gaps identified using a mixed method approach to explore the dynamic interplay between religious beliefs, perceptions of infertility, and fertility treatments. Additionally, it further investigates religious leaders' role in promoting or inhibiting access to ART. Finally, the study aims to add to the discourse on infertility with a comprehensive insight from community members, healthcare providers and religious leaders recognising and respecting the role of faith in shaping individual and communal responses to infertility.

2.7 Underpinning Philosophy and Theories for the Study

The study leans towards a pragmatist position, a dominant philosophical foundation for mixed methods research, which is rooted in American pragmatism and influenced by thinkers like Dewey, Peirce, and Rorty (Shan, 2022; Johnson & Onwuegbuzie, 2004). Pragmatics asserts that knowledge is both constructed and based on a reality independent of the mind, recognizing the complexity of both physical and social worlds. Pragmatism allows social scientists to avoid choosing between postpositivist and constructivist positions, enabling them to use both quantitative and qualitative methods as needed to address research problems effectively (Shan, 2022; Johnson & Onwuegbuzie, 2004; Creswell & Creswell, 2017; Creswell & Clark, 2017).

There is a dearth of knowledge about religion and infertility. The theories used in some of the infertility studies look at different aspects such as coping, health belief systems, spirituality, or help-seeking behaviour. Even though general help-seeking theories have been used in

explaining health conditions including infertility, they fail to capture the distinct element of how social and individual obligations influence people to seek help in cases of infertility.

This study will use two theories; an integrated model of help-seeking behaviour developed to specifically explain help-seeking (White, McQuillan and Greil, 2006) and a theory of lived religion to help understand the dynamics of religion and infertility. Given that these theories were developed to explain dynamics in a Global North context, applying them in a Global South context will permit a contextual interrogation of these theories.

2.7.1 Theory of Lived Religion

As some scholars have argued, it is difficult to reliably define religion across cultures and historical eras. Additionally, efforts to define religion frequently concentrate on belief, scripture, and ideas of a universal sacred text (McCutcheon, 1995; Smith, 1998; Asad, 2003). This difficulty translates into the theoretical and methodological spheres and their application in research as they relate to the sociology of religion. In the mid-1990s, the emphasis on “lived religion” arose alongside challenges to secularisation and rational choice theories. It emerged as scholars from various disciplines pulled toward an approach that promises to go beyond the narrow, primarily Western constraints that defined religion as an institution (belonging) and a worldview (belief). The word “lived religion” was coined at a conference of historians and sociologists in 1994 (Hall, 1997).

There are several scholars who helped develop the concept of lived religion. One such scholar is McGuire, who challenged sociologists of religion “to rethink fundamental conceptualisations of what we study and how we study it” in his book “Lived Religion: Faith and Practice in Everyday Life” (McGuire, 2008, p. 4). Sociologist Nancy Ammerman and historian Robert Orsi (Knibbe and Kupari, 2020) are two academics who have grown to firmly identify with the lived religion approach. Even though there are different approaches to understanding lived

religion according to different theorists, in the end, they lead to a discussion of what religion is, and how to expand the understanding of religion.

The lived religion approach focuses on how religion is practised, rather than asking such broad questions or attempting to theorise about how religion will function in contemporary society. Discursive approaches to religion frequently focus on the question of what "counts" as religion and who makes this determination; whereas the study of lived religion places less emphasis on this issue to design research strategies that primarily use ethnographic and historiographic methods to demonstrate how what is commonly understood to be "religion" is shaped through countless daily practices, habits, and patterns of social life.

McGuire (2008) makes the case that people's practices of religion frequently diverge greatly from the religious doctrines upheld by organisations, and she suggests refocusing sociological research on individuals. Thus, "distinguishing the experience of religious persons from the prescribed religion of institutionally defined beliefs and practices" is the purpose of the term "lived religion" (McGuire, 2008). The notion of lived religion, according to Orsi (2010), also has phenomenological connotations. The lived religion approach, according to his interpretation, regards religion as embedded in the 'life-world' of existentialist philosophy and phenomenological anthropology. Ammerman (2014, p. 190) defines lived religion as a religion that is intertwined with people's daily existence. Furthermore, emphasising every day means accentuating the experiences of people who are not religious experts or specialists, as well as social locations and circumstances that are not institutionally religious (Ammerman, 2014).

Sociologists writing about lived religion, on the other hand, have been constrained by their tendency to define their topic in opposition to the study of belief and doctrine, organisations and memberships, or elites and leaders (Ammerman, 2016). This constraint has led to the development of "Practice Religion" in the field of lived religion to explain the concept of lived

religion. Some sociologists, including Courtney Bender as cited in Knibb and Kupari (2020), have used Sociologist Pierre Bourdieu's (1990) practice theory to highlight the importance of capturing lived religion as it appears in mundane interactions between people in various social contexts. The sociologist, Courtney Bender recommends focusing on 'practising' religion (rather than specific practices) to challenge the deeply ingrained sociological assumption that religious activity occurs only in a designated 'religious' sphere (Knibbe and Kupari, 2020). This analytical shift allows us to uncover and explain processes "that make certain things (activities, ideas, institutions) recognisably religious", challenging the notion of a separate, self-contained religious field as the source of all things religious.

The theory helped in the conceptualization and choice of measure for religiosity, which is the main independent variable. The lived religion method typically begins with the individual, emphasising individual choice and agency in the construction of religious ideas and practices. The focus is on practices of social life/interactions that people perceive as religious and how those practices affect their perception and framing of infertility. The study acknowledges that religious practices can occur both in religious spaces (institutional structures) and in everyday life, thus capturing affiliation, religious pluralism and religious rituals in everyday practice. This is important because some religious practices in everyday life or daily interactions may not be reflective of what is done in the affiliated institutions.

Additionally, it acknowledges the agency and rights of individuals to choose and act freely in their interest. Some individuals affiliated with religious groups that do not support contraceptive use or assisted reproductive technologies may be doing otherwise in their private lives. Their perception of infertility may be more or less radical.

2.7.2 Integrated Model of Help-Seeking Behaviour

The integrated model of help-seeking behaviour is based on a combined understanding of help-seeking theories by Becker (1974), Anderson (1968), and Shawl (1999). The model seeks to

explain why disparities exist in health-seeking behaviour. These theories explain in detail the patterns of treatment-seeking as found in the population. Underlying these theories is how people identify a health experience as a threat and the process of managing this health experience. It acknowledges that there are different pathways to seeking help in times of ill-health.

Theories of help-seeking are predicated on the premise that the transition from symptoms to medical care is a difficult one. Symptoms, perception of a problem, consideration of alternative responses, and behavioural responses are the four simple steps that make up any breakdown, even though they are all arbitrary (White, McQuillan and Greil, 2006). The duration of this process is partly dependent on the urgency of the condition, whether it is acute or chronic, and the knowledge of the person experiencing it, among others. Once the problem is identified, there is "cognitive processing", which is essential to all help-seeking theories (Shaw, 1999). This cognitive process necessitates an active decision to seek treatment and, in many cases, a substantial amount of determination to identify an appropriate provider and persist until treatment is provided, unless symptoms are so severe (such as fainting in public) requiring that others deliver you to treatment providers (White, McQuillan and Greil, 2006; Asante-Afari, 2017).

It is crucial to keep in mind that many different behavioural responses could occur when considering how to get help for a medical problem. In fact, seeking professional treatment is preceded by some form of self-care for all conditions. Instead of, or in addition to seeking medical assistance, some people may turn to religion or alternative medicine (White, McQuillan and Greil, 2006). To understand variations in help-seeking, it is necessary to examine the factors that influence people's perceptions of a problem and decisions about the best course of action (which in this case is seeking medical help). The key explanatory concepts can be grouped into the categories of social, individual, and temporal cues, enabling, and

predisposing conditions, incorporating ideas from a variety of help-seeking theories (White, McQuillan and Greil, 2006).

With the above understanding of the variations in help seeking and explanatory concepts, the study's conceptual framework was constructed, guiding the choice of variables. It was also helpful in the formulation of the qualitative interview guides for both religious and healthcare providers. Help-seeking in terms of infertility starts with accepting or recognising infertility as a problem. In the instance of infertility, the severity of the impact may be judged by the strength and immediacy of fertility intentions, the presence or absence of children, and the prominence of a parent identity. Once the issue of infertility is recognised, potential solutions must be considered. These factors include the need for treatment, perceptions of the available options, and perceptions of the advantages and disadvantages of each option. The influence of social networks and previous experience in a health facility can never be overlooked.

So, it makes sense that those who want children, feel compelled to have them, have never had children before, and cannot imagine their lives without children (or without children of a particular gender) are most likely to seek medical attention right away. The exposure of a person in terms of residence, education (which might inform knowledge about fertility issues), and income will lead to the choice of attention being medical or alternative medicine.

2.8 Conceptual Framework

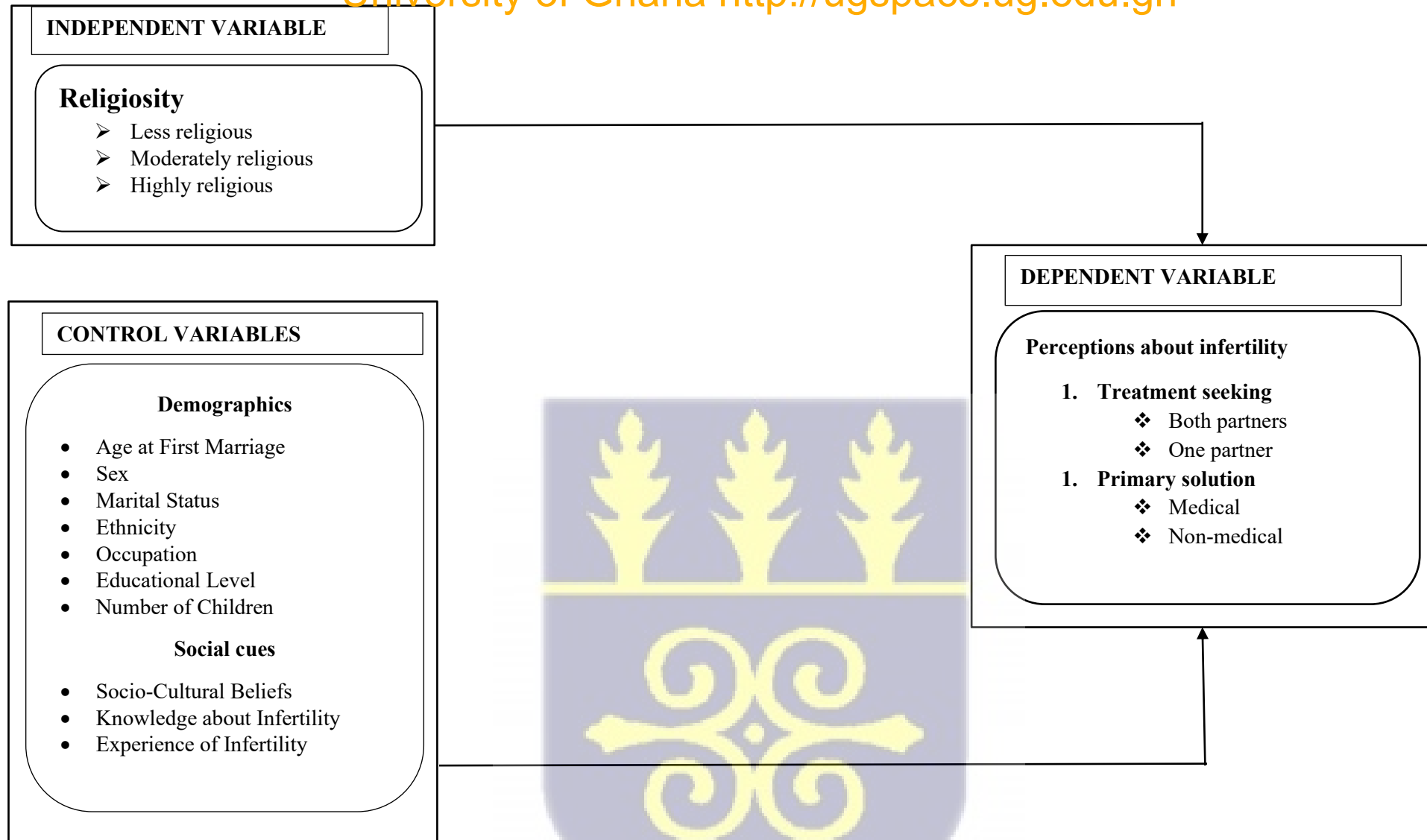
The conceptual framework adopted for this study was informed by research and theory. The framework illustrates the interconnections and relationships with respect to religion and infertility. The framework, as shown in Figure 2.1, depicts the relationship between perceptions of delayed fertility (dependent variable), individual level variables, and social cues, as control variables, and religiosity (independent variable).

In the framework shown in Figure 2.1, religiosity is the main explanatory (independent) variable that directly influences the perceptions about infertility and its management. The other independent variables that will be controlled for are all shown in the figure. In this thesis, religiosity is conceptualised using centrality of religiosity scale.

The framework, as shown in Figure 2.1, depicts the relationship between the dependent variable, perceptions of infertility (treatment seeking and primary solution), religiosity and control variables.



Table 2.1: Conceptual Framework Showing the Relationship between Religiosity, Control Variables and Perceptions about Infertility



Source: Adapted from White et al. (2005)



Religion informs people's knowledge about infertility and informs their treatment choices, which inform their perceptions about infertility. Higher religiosity has been linked in studies to higher fertility intentions and a lower acceptance of childlessness (Bulcroft and Teachman, 2004; Hayford and Morgan, 2008). According to research (Grasmick, Wilcox and Bird, 1990; Jensen, 1993), people with strong religious beliefs tend to be more traditional in their lifestyle choices, gender ideologies, and marriage and family patterns. This may encourage them to seek infertility treatment; and because some religions are against certain assistive reproductive technologies, it influences a religious person's choice of treatment for infertility (White, McQuillan and Greil, 2006).

According to help-seeking theorists, social cues play a role in how people perceive the absence of conception as a sign of infertility, make positive judgments about the necessity of, accessibility to, and effectiveness of medical treatment, and decide to seek treatment (Fledderjohann, 2012; Asante-Afari, 2017). Social cues include variables such as age, marital status, education, and the number of children. These affect our knowledge and our perception of infertility and how it should be managed.

Our perception of infertility is also mediated by the process of seeking assistance, which is impacted by personal attitudes and circumstances (Slauson-Blevins, 2011). In general, people are more likely to seek care when a condition has a severe impact on their daily lives. Help-seeking is more likely when life course cues, particularly age, marriage, and education completion, promote childbearing as a desire (White, McQuillan and Greil, 2006). Thus, older married women with completed education will be more likely to seek medical attention for fertility impairment when faced with the same objective symptoms.

The resources that make it possible to receive the desired help are referred to as "enabling conditions" in theories of help-seeking. Although financial resources like income and health insurance are most crucial, resources like social support (including religion) and education have

also been shown to increase the likelihood that a person will seek medical treatment (White, McQuillan and Greil, 2006; Slauson-Blevins, 2011; Asante-Afari, 2017).

Other socio-demographic factors like gender, ethnicity and place of residence are important in determining how infertility is dealt with. Some studies have indicated poor knowledge of what infertility is, which affected how they perceived and managed the condition (Harzif et al., 2019). There have been documented differences in some socio-demographic characteristics on knowledge of infertility. The use of modern contraceptives affects one's perception of infertility through knowledge about the causes of infertility. Research has shown that some people perceive that the use of contraceptives can cause a delay or decrease fertility (Birdsall, Kelley and Sinding, 2001).



CHAPTER THREE

DATA AND METHODOLOGY

3.1 Introduction

This chapter presents the methodology of the study, which is on religion and community perceptions about infertility. The chapter begins with the study design and its justification. This is followed by the justification of the study site and data collection processes for both the qualitative and quantitative phases.

3.2 Study Design

The study employed a cross-sectional study design with a convergent parallel mixed methods approach. By comparing the characteristics of the strata, cross-sectional research collects data at one point in time (Kesmodel, 2018); and the convergent parallel method means both quantitative and qualitative data were collected simultaneously and integrated into the interpretation or discussion of the results. The justification for this method is that the qualitative adds an in-depth understanding to the quantitative results giving a comprehensive study allowing for the exploration of inconsistencies and contrasting findings (Hafsa, 2019).

The convergent parallel method will enable the merging of both forms of data to provide a more comprehensive explanation of the phenomenon. It further allows for the discussion of areas of convergence or divergence between the qualitative and quantitative data. Using both methods helps compensate for the inherent weaknesses each method has. The simultaneity of data collection was suitable for this study because of the inherently sensitive nature of issues pertaining to infertility and thus, it is expected that while the administering of the quantitative questionnaire, qualitative in-depth interviews will be conducted with other respondents who belong to the same study population. This relationship between the sample of qualitative and quantitative method is known as a parallel relationship (Collins, Onwuegbuzie and Jiao, 2006; Onwuegbuzie and Collins, 2007). A parallel relationship specifies that the samples for the

qualitative and quantitative components of the research are different, but are drawn from the same population of interest. By examining varied yet interconnected samples through separate methodological approaches, a more comprehensive view of perceptions about infertility is obtained. Furthermore, parallel sampling represents an efficient use of resources, particularly when faced with limited availability, while simultaneously allowing for the exploration of the research question from multiple angles. This approach fosters a deeper and more detailed understanding of the issue surrounding perceptions of infertility.

The quantitative approach involved a survey of community members aged 25 years and older, who are currently in union, while the qualitative explored in detail, issues relating to religion and infertility with religious leaders, and healthcare workers.

3.3 Justification of the Study Area

The study collected primary data (both quantitative and qualitative) from selected communities in the Greater Accra Region of Ghana based on several reasons. First, the region is currently the most populous in the country with diverse socio-demographic backgrounds in terms of age, ethnicity, and religion. It also boasts of top-notch healthcare services, which are available to people in and outside the region and the country at large. Additionally, it has a total fertility rate (TFR) of 2.9, the lowest in Ghana (national TFR of 3.9), as was reported from the 2022 Ghana Demographic Health Survey (GDHS) (GSS, 2022).

The Greater Accra Region houses the capital city (Accra) of Ghana. Ghana has a total population of 30.8 million with the female population (15,610,149) outnumbering the male population by 427,690. The country has a sex ratio of 97 males to 100 females. The Greater Accra Region is the smallest of the 16 administrative regions in terms of area, occupying a total land surface of 3,245 square kilometres (sq. km) or 1.4 percent of the total land area of Ghana. In terms of population, however, it is the most populated region, with a population of 5,455,692 in 2021, accounting for 17.7 percent of Ghana's total population. The political administration

of the region, just like in all regions in Ghana, is through the local government system. Under this administration system, the region is divided into 29 Metropolitan, Municipal and District Assemblies (MMDAs). These are made up of two Metropolitan Assemblies, 23 Municipal and four District Assemblies. Each District, Municipal or Metropolitan Area is administered by a Chief Executive, appointed by the President of the Republic, but deriving authority from an Assembly, headed by a Presiding Member, elected from among the members themselves.

The major ethnic groups are the Akan (39.8%), Ga-Dangme (29.7%), and Ewe (18%). Christians constitute the largest religious group (83.0%), followed by Muslims (10.2%), people who profess no religion (4.6%), and adherents of Traditional Religion (1.4%) (AMA, 2023). By marital status, 50.0 percent of persons 15 years and older are in formal or informal cohabiting unions, while an additional 9.6 percent have once been in a marriage. A slightly higher proportion of females than males are in marital unions: 51.5 percent compared to 48.5 percent. Despite the minimum legal age of 18 years prescribed for marriage, there is an indication that some persons aged 12-17 years do marry. The proportion of persons aged 12-17 years who are married or in consensual unions is 1.7 percent, compared to a national average of 6.4 percent (AMA, 2023).

Theoretically, the selection of the Greater Accra Region, specifically the Ablekuma South Sub-Metropolitan District, is theoretically grounded in the Theory of Lived Religion and the Integrated Model of Help-Seeking Behaviour that underpin this study. According to the lived religion approach, religious practices are embedded in everyday social interactions and shaped by cultural contexts (McGuire, 2008; Ammerman, 2016). Urban environments like Greater Accra provide diverse religious landscapes where individuals navigate multiple faith traditions simultaneously, a phenomenon crucial for understanding religious pluralism's impact on infertility perceptions. Similarly, the Integrated Model of Help-Seeking Behaviour emphasises that healthcare decisions are influenced by social cues, enabling conditions, and predisposing factors (White, McQuillan & Greil, 2006). Ablekuma South provides the necessary healthcare

infrastructure diversity from orthodox medical facilities to traditional healing centres and religious institutions, required to examine the full spectrum of help-seeking behaviours outlined in the theoretical framework.

Empirically, previous research has documented that infertile women in urban Ghana, particularly in Greater Accra, commonly combine medical treatment with religious interventions, with studies showing that 78% seek help from both healthcare providers and religious institutions simultaneously (Hiadzi & Boafo, 2020; Oti-Boadi & Oppong Asante, 2017). The region's religious diversity (83% Christian, 10.2% Muslim, 1.4% traditional) is particularly relevant for infertility research because different faith traditions offer distinct explanations and solutions for childlessness, from spiritual warfare against "barrenness" to Islamic concepts of divine will to traditional beliefs about ancestral influences on fertility. This makes Greater Accra the optimal location to examine how religion shapes community perceptions about infertility in Ghana.

3.4 Quantitative Data

3.4.1 Selection of Study Sites

The study site was Accra Metropolitan Assembly (AMA), specifically the Ablekuma South Sub-Metropolitan District. This was purposively selected for many reasons. First, it is the largest sub-metropolitan area in the Accra Metropolitan Assembly (AMA) covering an area of 15.1 square kilometres. It also presents a wide range of religious affiliations, ethnic and household wealth quintile differences among the population. The Sub-Metro also boasts of the leading teaching hospital in Ghana, which receives referrals from all over Ghana, including private and government facilities. Korle-Bu Teaching Hospital is one of the five teaching hospitals in Ghana.

The Sub-Metro shares boundaries with Ablekuma Central, Ablekuma North Municipal Assembly, and Ashiedu Keteke Sub-Metropolitan District Council. According to the 2021 Population and Housing Census, the Sub-Metro has an estimated household population of 106,766 with 35,821 households. The district has a population density of 18,113.8 persons per square kilometre with an average household size of 3.0 persons (GSS, 2021).

3.4.2 Study Population

Residents in selected enumeration areas who are in unions and aged 25¹ years and older residing in the Ablekuma Sub-Metropolitan District were eligible for the study. These eligible participants were identified through the listing of households, where one respondent was selected in a household. Community members (both males and females) who were 25 years and older and who have ever married (either currently in a union or not) were included in the study. Community members who were 25 years and older and who have never been in a union were excluded from the study population. Therefore, residents who were below 25 years were excluded.

3.4.3 Sampling

3.4.3.1 Sample Size Determination

A sample estimation was used to determine the sample size, using the formula for cross-sectional studies (Charan and Biswas, 2013),

$$\text{Sample size} = \frac{Z^2 \times p(1-p)}{d^2}$$

Z= Z-score, which corresponds to the confidence interval (1.96 at 95%)

¹ The legal age for marriage in Ghana is 18 years. According to the 2022 GDHS report, the median age at first marriage is 21.8 for females between 25 years and 49 years. For males aged between 30 years and 49 years, it is 27.9 years. The set age limit of 25 is an average of both median age at first marriage and also gives some room for experience in marriage.

p = Expected proportion of the population with the characteristic of interest (expressed as a decimal)

d = Margin of error (desired precision level, expressed as decimal)

Using an assumption of 0.5%, p will be 0.5., Z=1.96, d = 0.05

The sample size was, therefore, determined as follows:

$$\text{Sample size} = \frac{1.96^2 \times 0.5(1-0.5)}{0.05^2}$$

The sample size is equal to 384.16, which approximates to 384. To get a powered sample for comparison across male and females, the sample size was doubled, making 768 respondents. Accounting for a 24 percent non-response rate the sample size was adjusted to 952 (768*0.24).

3.4.3.2 Sampling Technique

A multi-stage probability sampling was adopted. The sampling frame for this study was from the 2021 Population and Housing Enumeration Areas (EAs) and enumerated households. At the first stage, there was a stratification of the 179 EAs in the study area. The stratification was based on the six different localities in the Ablekuma South Sub-Metro: Chorkor (41 EAs), Korle-Bu (6 EAs), Korle-Gonno (52 EAs), Mamprobi (42 EAs), New Mamprobi (24 EAs) and Old Dansoman (14 EAs).

The stratified systematic selection of the 50 EAs out of the 179 EA's in the study area was done, considering the size of each locality to ensure that the chosen EAs are representative of the locality within the Sub-Metro. With the proportionate allocation, 10 EAs were randomly selected from Chorkor, two from Korle-Bu, 15 from Korle-Gonno, 12 from Mamprobi, seven from New Mamprobi, and four from Old Dansoman as shown in Table 3.1.

Table 3.1: Distribution of Enumeration Areas and Households by Locality

Ablekuma South	EAs	Percent Share	Proportionate Allocation	Adjusted Allocation of EA	No. of Households selected
Chorkor	41	23	11.5	10	200
Korle Bu	6	3	1.7	2	40
Korle Gonno	52	29	14.5	15	300
Mamprobi	42	23	11.7	12	240
New Mamprobi	24	13	6.7	7	140
Old Dansoman	14	8	3.9	4	80
Total	179	100	50.0	50	1,000

Following the proportionate selection of 50 EAs, household listing was done in each EA to enable a random selection of 20 households in each EA. This random selection of households resulted in a total of 1,000 households for the study.

3.4.3.3 Data Collection Instrument

A structured questionnaire in English was developed based on literature and the objectives of the study. The questions were mostly closed ended. There were eight sub-sections in the questionnaire. The first section covered the socio-demographic characteristics of respondents. The details included age, highest educational attainment, marital status, employment status, occupation, religious affiliation, ethnicity, type of union, bride wealth status of the union, health insurance and validity of insurance.

The second section examined the marital history of respondents, including age at first marriage, duration of marriage, number of marriages, and perceptions about the purpose of marriage (both general and primary purposes such as procreation, companionship, and financial security). The third section focused on pregnancy history, covering pregnancy experiences (including miscarriages and abortions), number of pregnancies, age at first pregnancy, pregnancy outcomes, childbirth history, and antenatal care-seeking behaviour.

The fourth section addressed delayed fertility experiences, including partners' biological children, respondents' biological children from other relationships, the definition of delayed

fertility, family history of fertility delays, information-seeking sources about infertility, decision-making regarding fertility treatment, contraceptive use, fertility desires, personal experiences with delayed childbirth, and professional advice received. The fifth section assessed attitudes of respondents regarding infertility, examining perceptions about infertility duration thresholds, views on infertility as a disease, attitudes toward medical treatment, treatment-seeking preferences (medical, traditional, faith-based), and beliefs about recurrent fertility problems.

The sixth section explored perceptions about marital outcomes related to infertility, including views on divorce as grounds for infertility, polygamy acceptance, adoption attitudes, societal blame patterns, and social acceptability of assisted reproductive technologies such as IVF and fertility drugs. The seventh section captured respondents' perceptions about infertility causes and solutions, using structured statements about witchcraft, health education, gender blame, traditional treatments, and preferred solutions (spiritual, medical, traditional/herbal approaches), as well as opinions about childless unions.

The eighth section investigated religion and infertility relationships, covering religious attendance patterns, participation frequency, religious rituals and practices, prayer habits, religious coping strategies, cross-denominational participation, online religious engagement, religious commitment using the Centrality of Religiosity Scale (CRS-20), awareness and acceptance of Assisted Reproductive Technologies within religious contexts, and perceptions about religion's role in addressing infertility.

3.4.3.4 Data Collection Procedure

Primary data collection began in all localities from 31st July to 4th October, 2023. The data collection process began with a community entry process by contacting a local gatekeeper in each of the selected communities. With the aid of the gatekeeper, access to the community was

gained and a proper introduction to the aims and objectives of the study was carried out. This was an important step to help the enumerators (who were easily identified by the community members as outsiders carrying out interviews) to gain full cooperation from community members. The Assembly members for the various localities (Mamprobi, Chorkor, Korle-Gonno) were approached to seek their approval. The Assembly member for Mamprobi was also in charge of the Korle-Bu locality and therefore approval for both places came from him. In all cases, an introductory letter from the department (Regional Institute for Population Studies) in addition to the ethical clearance letter were given to them after a self-introduction was done. In Chorkor, a public announcement was made using the community's Public Address (PA) System to inform community members of the approval from community leadership.

Before the data collection began, recruitment and training of enumerators was done. Eleven enumerators were recruited and trained for the data collection. All enumerators, except one, were fluent in three languages: Twi, Ga and English. The exceptional enumerator in question was fluent in Twi and English, but not in the Ga language. They had three days training, which emphasised the ethics of the study (with focus on voluntary participation, informed consent, risks, confidentiality and privacy of interview, and freedom to withdraw from study). They were taken through the questionnaire to make them familiar with it and to gain in-depth knowledge about the subject matters; and later taken through a pre-test session using the questionnaire after translating the questionnaire into Twi and Ga to ensure familiarity and clarity of the questions with the aim of obtaining accurate responses from study participants.

The questionnaires were pre-tested at Dansoman (Karikari Brobbey area), which is in the Ablekuma West Constituency. This area was chosen because of the similarity and proximity to the study area. The enumerators were then paired for the exercise, except for Korle-Bu, which had only one enumerator because of the small number of respondents from there.

A koboCollect data collection software was used for the pre-test and actual data collection. The interviews were conducted through a face-to-face interview technique in the language that was most comfortable for the respondent (Twi, Ga or English).

3.4.4 Measurement of Variables

3.4.4.1 Outcome Variables

There are two outcome variables for this study, both trying to explain perceptions about infertility. The first outcome variable is perception about treatment seeking for infertility; and the second is perception about primary solution for infertility. These are based on existing scholarly works that looked at perception of infertility (Ali et al., 2011; Iliyasu et al., 2013; Rouchou, 2015; Okafor, Joe-Ikechebelu and Ikechebelu, 2017; Atijosan, Adeyeye and Ogungbayi, 2019; Harzif, Santawi and Wijaya, 2019; Oluwole et al., 2021).

After a series of data reduction tests to create a composite infertility perception variable from 22 items, which yielded low Cronbach Alpha scores, an index comprising two variables was constructed that emerged with the highest Cronbach alpha score. Another important variable, which was an item on perception about the primary solution for infertility being medical or non-medical, was selected since it was important to explore. This led to the creation of two outcome variables to capture perceptions about: (a) treatment seeking; and (b) primary solution to infertility.

For the first outcome, which is treatment seeking, two questions were used, namely who should take the initiative in seeking solutions for a delayed childbirth in a union and who should seek medical treatment first? The Cronbach alpha for the two questions was 0.774, an indication of high reliability and internal consistency. Table 3.2 shows the item test correlation.

Responses to these questions could be 'husband,' 'wife,' or 'both'. Responses indicating individual responsibility (husband only or wife only) were scored as 0, while those indicating shared responsibility (both) were scored as 1. A maximum sum of 2 can be scored for this index

and a minimum of 0. New categories are thus created for the index where 0-1=one partner (poor treatment-seeking perception) and 2 = both partners (good treatment-seeking).

Table 3.2: Average Item Correlation for Perception about Treatment Seeking

Average inter-item correlation: 0.6308		
Number of items in the scale: 2		
Scale reliability coefficient: 0.7736		
Inter-item correlations (obs = 950 in all pairs)		
	Initiative in seeking treatment	Who should seek treatment first
Initiative in seeking treatment	1	
Who should seek treatment first	0.6308	1

In terms of the second outcome variable on perception about solution or treatment for infertile couples, the question was on the primary solution for infertility, with answers re-categorised into medical and non-medical.

3.4.4.2 Independent Variable

The main independent variable of interest is the religiosity based on the Religiosity Scale. The Centrality of Religiosity Scale (CRS) was adopted for this study (Huber and Huber, 2012). The CRS, which was formulated by Huber and Huber in 2003 represents a comprehensive model of religion with multiple dimensions (Huber and Huber, 2012). The scale consists of a 15-item measure divided into five sections (intellectual, ideological, public practice, private practice and experience) with each section having a total of three questions as shown in Table 3.3. The internal consistency of the scale yielded an alpha of 0.84.

The 15-item Centrality of Religiosity Scale (CRS) is measured on a five-point scale. Based on this, the maximum that can be scored for each measure is 5.0 and the minimum is 1.0. The total

maximum score at the end of the 15-item religiosity scale is 75.0 and the minimum score is 15.0. The variable was treated as a categorical variable, less religious, moderately religious and highly religious.

Table 3.3: Summary Measures of Religiosity Scale

Dimension	Items for Both Basic and Interreligious Versions - (CRSI-15)
Intellect	1. How often do you think about religious issues?
	2. How interested are you in learning more about religious topics?
	3. How often do you keep yourself informed about religious questions through radio, television, internet, newspapers, or books?
Ideology	4. To what extent do you believe that God or something divine exists?
	5. To what extent do you believe in an afterlife—e.g. immortality of the soul, resurrection of the dead or reincarnation?
	6. In your opinion, how probable is it that a higher power really exists?
Public practice	7. How often do you take part in religious services?
	8. How important is it for you to take part in religious services?
	9. How important is it for you to be connected to a religious community?
Private practice	10. How often do you pray?
	11. How important is personal prayer for you?
	12. How often do you pray spontaneously when inspired by daily situations?
Experience	13. How often do you experience situations in which you have the feeling that God or something divine intervenes in your life
	14. How often do you experience situations in which you have the feeling that God or something divine wants to communicate or to reveal something to you?
	15. How often do you experience situations in which you have the feeling that God or something divine is present?

3.4.5 Data Management

All survey questions were downloaded into an excel form and sorted by checking for completeness. Incomplete questions were discarded, while completed ones were cleaned before transporting into STATA Version 18. Only the researcher had access to the questionnaires.

Data cleaning involved several processes, such as checking for complete responses, particularly for the main independent and dependent variables, with incomplete questionnaires being discarded. As part of the cleaning process, Inconsistencies were identified and corrected (e.g., age at first marriage or age at first birth being older than current age), cross-checking related variables for consistency (such as number of children versus number of pregnancies/abortions). Also duplicate entries were addressed, verified that skip patterns were correctly followed, and recategorized continuous variables such as age and occupation into meaningful categorical groups for analysis. The process of data cleaning and transport lasted for about two weeks. Recoding of variables was done iteratively based on statistical reasons.

3.4.6 Coding of Variables

The control variables used in the analysis and corresponding codes are described in Table 3.4. Recoding of response categories for the socio-demographic and psycho-social variables was done prior to their inclusion in the models for analysis. Variables that were recoded were premised on statistical reasons with consideration on the counts in each category. In some instances, the response categories were condensed or collapsed into new response categories, as a result of the few counts reported. Other response categories were merged and recoded.

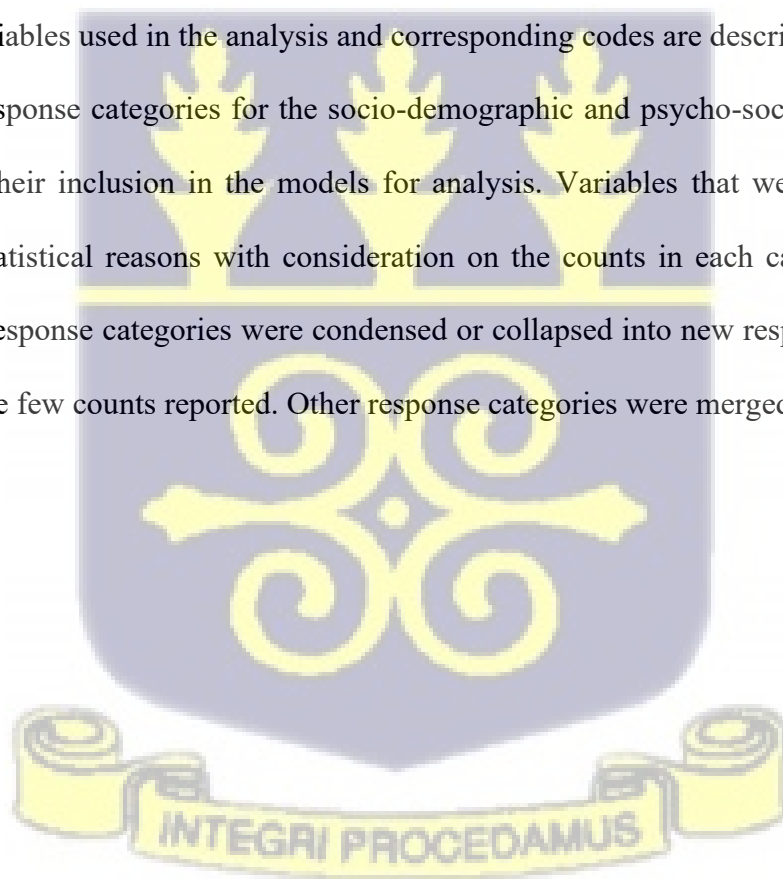
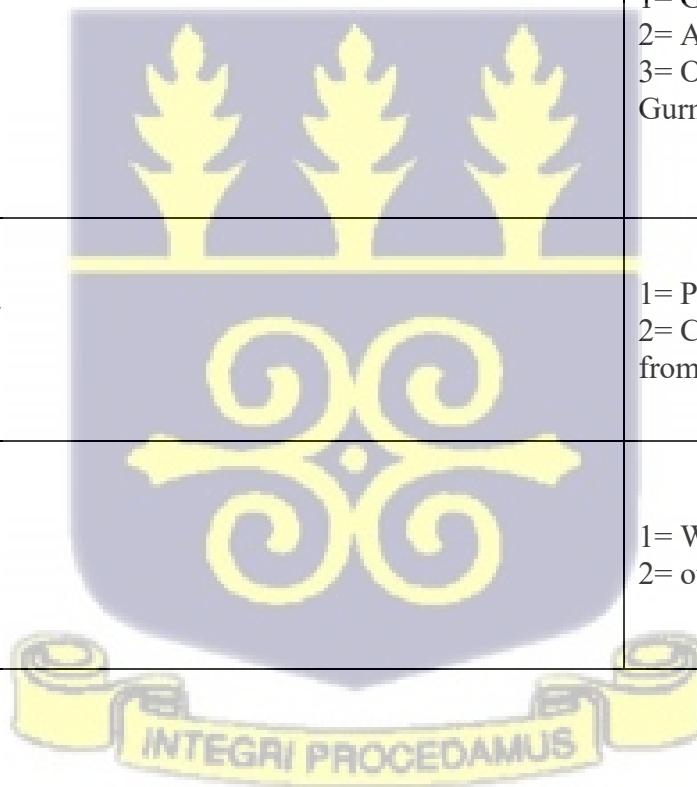


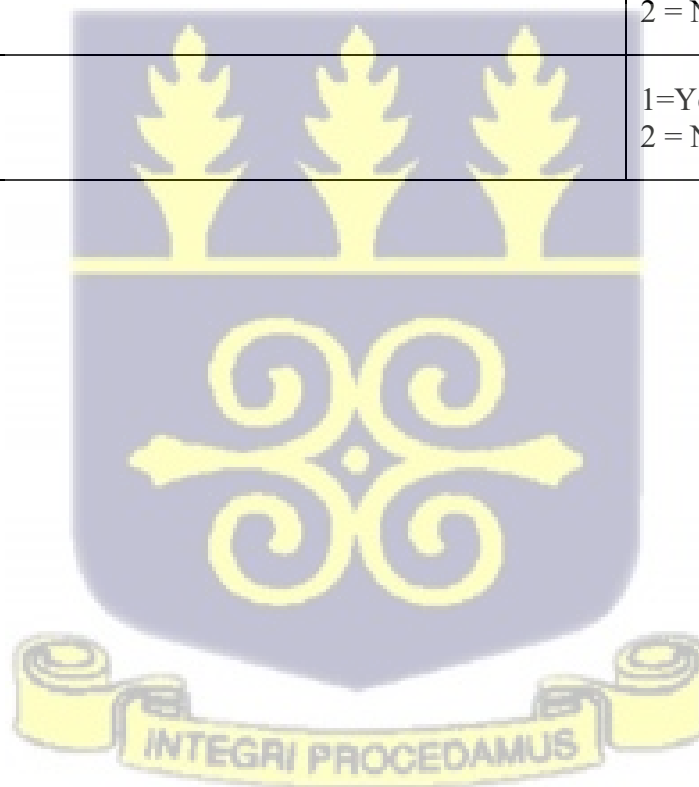
Table 3.4: Variables and How They were Measured and Recoded

Variables	Measurement	Recoded
Age	Continuous Variable	1=25 – 34 years 2= 35 – 44 years 3= 45+
Age at first marriage	Continuous Variable	1=15 – 22 years 2= 25 – 30 years 3= 31+
Number of children	Continuous Variable	1=None 2= 1 to 3 3= 4+
Sex of respondent	1= Male 2= Female	0 = Male 1= Female
Employment status	1=Yes 2=No	1=Yes 0=No
Locality	1= Chorkor 2= Mamprobi 3= Old Dansoman 4= Korle-Gonno 5= Korle-Bu	1= Korle (Korle-bu and Korle-Gonno) 2= Chorkor 3= Mamprobi (Old Dansoman and Mamprobi)
Occupation	1=Sales/Services 2=Professional/Technical 3=Skilled Manual 4=Elementary/Unskilled Labour 6=Unemployed	1=Not working 2=Sales/Services 3=Professional/Technical 4=Skilled/Unskilled Manual 5=Elementary/Unskilled Labour
Educational status	1= No Education 2= Pre-School 3= Primary 4= Middle/JHS 5= Secondary/SHS 6 = Vocational 7= Higher/Tertiary 8= Other (Specify)	1= None (No education and pre-school) 2= Basic (Primary and JHS) 3= Secondary (Secondary and Vocational) 4= Tertiary (Higher)

Variables	Measurement	Recoded
Marital status	1= Currently Married 2= Cohabiting 3= Divorced 4= Separated 5= Widowed	1= In Union (currently married and cohabiting) 2 = Not in Union (Divorced/separated/widowed)
Status of bride wealth	1=Fully Paid 2=Partially Paid 3- Not Paid	1=Paid (fully paid) 0= Not Paid (not paid and partially paid)
Ethnic group	1= Akan 2= Ga/Dangme 3= Ewe 4= Guan 5=Mole-Dagbani 6=Grusi 7=Gurma 8=Mande 9=Other	1= Ga/Dangme 2= Akan 3= Other (Ewe, Guan, Mole-Dagbani, Grusi, Gurma, Mande, other ethnic group)
Primary purpose of marriage	1= Procreation 2= Companionship 3= Financial Security 4= Cultural Demands 5= Other (Specify) 6=I Don't Know	1= Procreation 2= Companionship/Other (this includes responses from 2 to 6)
Blame for infertility	1= Husband 2=Wife 3= Both 4= Neither 5= Don't know	1= Wife 2= others (husband, both, neither, Don't know)



Variables	Measurement	Recoded
Witchcraft is a major cause of infertility	1=Yes 2= No	1=Yes 2= No
Ever experience delay in fertility	1=Yes 2= No 3= Don't know	1=Yes 2 = No (No and Don't know)
Heard of ART	1=Yes 2= No	1=Yes 2 = No (No and Don't know)
Religion support ART	1=Yes 2= No 3= Don't know	1=Yes 2 = No (No and Don't know)
Religion help infertility	1=Yes 2= No 3= Don't know	1=Yes 2 = No (No and Don't know)



3.4.7 Quantitative Data Analysis

Analysis of data was performed at the univariate, bivariate, and multivariate levels. Univariate analysis was mainly descriptive statistics and expressed in frequencies, percentages and mean distribution. Bivariate analysis with cross-tabulations and chi-square tests were used to examine the association between the socio-demographic variables, other independent variables and the outcome variable.

At the bivariate level, cross-tabulations with Chi-square tests (at a 95% significant level) were employed to test the significant association between each independent variable, intermediate and the dependent variable. The objective is to test the degree to which all the variables of interest influence or impact the dependent variable.

The Binary Logistic Regression was used because both dependent variables capturing perception of infertility had binary outcomes. For the first outcome; which is treatment seeking, one partner was coded as 0 and both partners as 1. While for the second outcome variable, primary solution for infertility, medical was coded as 1 and non-medical was coded as 0. The objective was to test the degree to which all the variables of interest influence the dependent variable.

Four regression models were run in this study at the multivariate level. The models were between the independent variables and the two outcome variables (treatment seeking and primary solution). These models tested the relationship between each independent variable and the dependent variable, whilst controlling for the other independent and intermediary variables in the model at a 95% confidence interval. The outcome is the net impact of each independent variable on delayed fertility.

The regression equation is as follows:

$$\ln \left[\frac{P}{1-P} \right] = b_0 + b_1X_1 + b_2X_2 + \dots + b_nX_n$$

From the Binary Logistic Regression equation presented, p is the probability that a respondent will have good perception (both partners seeking treatment, medical solution and continuation of a childless union) and $1-p$ is the probability that the respondent will have poor perception (one partner seeking treatment and non-medical solution). The coefficients are represented by “ b ” and “ x ” for each independent variable.

3.5 Qualitative Phase

The qualitative aspect of this study employed In-Depth Interviews (IDI). IDIs were conducted with healthcare workers (obstetricians and gynaecologists) in Korle-Bu Teaching Hospital and religious leaders in the community.

3.5.1 Study Sites

3.5.1.1 Selection of Study Sites for Healthcare Providers

Korle-Bu Teaching Hospital was selected in the Ablekuma South Sub-Metro for the study. It was purposively selected based on the fact that it is a major referral hospital in Ghana located in the study area. The Korle-Bu Teaching Hospital is the primary health care facility in Ghana. It is the largest tertiary hospital in Ghana and it is also a teaching hospital affiliated with the Medical School of the University of Ghana. The hospital was founded in 1923 and has expanded in phases over the years offering a wide range of obstetric and gynaecological services.

3.5.1.2 Selection of Study Sites for Religious Leaders

Religious leaders² were recruited from the various religions in the study area. Religious institutions were put in four strata, i.e., Orthodox Christian, Charismatic Christian, Islam,

² In this study, religious leader is anyone who has a leadership role in a religious organisation. These included pastors, church elders, Priests, Imam, Traditionalist/spiritualist, catholic Catholic nuns, evangelist etc. Even though in the study no church elders or evangelist were interviewed.

and Traditional. This was to ensure that the various religious groups were captured in the study.

3.5.2 Method of Data Collection

The in-depth interviews explored various aspects of delayed fertility and religion, including knowledge and perception about infertility. It was conducted using an interview guide with open-ended questions, which were designed based on the study objectives. Interviews were held at a time convenient for the respondent. Interviews were tape-recorded, and notes taken alongside. The in-depth interview was appropriate for infertility, which was quite sensitive. During the interview, privacy and confidentiality were ensured.

Inductive probing was used to expound on issues raised during the interview. Interviews lasted approximately between 20 minutes and 80 minutes. Detailed field notes were kept on non-verbal cues and observations.

3.5.3 Sample Size

The study interviewed two categories of people made up of religious leaders and healthcare workers. The sample size was largely based on data saturation. Data saturation is reached when the researcher no longer records new insights from the data (Saunders et al., 2018). The initial plan was to interview 15 medical doctors and 20 religious leaders but by the 10th and 17th interview, respectively, no new information was added so the interviews were stopped. A total of 17 religious leaders and 10 medical doctors were interviewed.

3.5.4 Study Participants

For healthcare workers, only doctors were interviewed. Medical doctors with at least a year's experience in the Obstetric/Gynaecology department of the Korle-Bu Teaching Hospital were eligible to be selected for the study. Other categories of health personnel like nurses and midwives were excluded. Doctors who were working in other units

(medicine, radiology, surgery, paediatrics, haematology, ophthalmology, dental, Ear, Nose and Throat (ENT), orthopaedics, dietetics, physiotherapy, radiotherapy, pharmacy, laboratory medicine, anaesthesia, plastic surgery and reconstruction, cardiothoracic centre, and emergency medicine) were excluded. Medical doctors (obstetricians/gynaecologists) with less than five years of experience in the Obstetric/Gynaecology Unit were likewise excluded from the study.

Religious leaders who have their congregants in the study area and lived in the study area were included in the study. Religious leaders who have their congregants in the study area, but did not reside in the study area were excluded from the study.

3.5.5 Participant Recruitment and Selection

In all categories of respondents (religious leaders and healthcare workers), an appointment was made after an initial interaction and the interview was held at the convenience of the respondents. The interview with the religious leaders were done in the community, while that of the healthcare workers was done in the hospital premises after that.

3.5.6 Research Instrument

Two semi-structured guides were designed based on the research questions prior to fieldwork for religious leaders and healthcare providers. Refinement was done as a result of piloting and translating the interview guide to Ga and Twi. Translating the guides during the training phase helped to get the most appropriate words that reflected English Language rendition in the interview.

The questions forming the interview guides were put into segments based on specific objectives. For all the guides, the first section focused on the demographic characteristics of respondents, namely; age, duration of marriage, duration of service, religion, and

number of children. The other sections focused on knowledge of infertility, knowledge on ART, diagnosis and treatment of infertility and how religion influences decisions around infertility treatment. The detailed study instrument is presented in Appendices 1 and 2.

3.3.8 Pretesting of the Interview Guide

The instrument was pre-tested to determine whether the questions were framed appropriately to elicit the expected responses. Pre-testing of interview guides was conducted on 2nd August, 2023. This was done to further understand and become familiar with the instrument before actual fieldwork; and enabled more insights to be gained into culturally sensitive issues and how best to navigate these issues to achieve maximum results. Questions that were poorly conceived and did not yield appropriate responses were flagged and rephrased. The procedures to be followed during actual data collection were adhered to.

3.5.7 Data Collection Procedure

Data collection began from 3rd August, 2023 to 4th October, 2023, at Ablekuma South, Accra. The data collection was divided into two phases owing to ethical approval issues. Phase one consisted of concurrent collection of both qualitative and quantitative data from community members of various localities/ communities in the Sub-Metro, and religious leaders. This phase of data collection received ethical approval from the Ethics Committee for Humanities at University of Ghana. It lasted from 3rd August to 27th August 2023. In addition to the ethical approval, an introductory letter from the Institute (Regional Institute for Population Studies) was presented to the various gatekeepers in the various localities.

After an initial scouting and interaction with private hospitals in the localities, it was found that most of them were manned by part-time doctors and permanent midwives (who were

not eligible for the study). This shifted the focus to Korle-Bu Teaching Hospital only for the aspect of healthcare workers.

For the religious leaders, church premises were visited to ask about the leader(s) with the introductory letter to seek consent. One religious leader introduced another religious leader (with the same religious affiliation) to be engaged and in a snowballing process, the other religious leaders were recruited for the interview. Most of the religious leaders who were approached were welcoming and willing to participate in the interview.

In the second phase of the data collection, ethical approval was given by the Ethics Committee of the Korle-Bu Teaching Hospital, on 28th September, 2023 and so the interviews were conducted from 29th September to 4th October, 2023. It was a bit easier for the researcher to obtain oral and verbal consent from the Obstetricians/Gynecologists because of her professional background as a nurse and prior engagements in the hospital. Ten doctors were chosen purposively for the interview based on years of experience, availability, and oral consent. The Obstetrician/Gynecology Department is made up of five teams: two doctors from each team were chosen to achieve the total sample size. The average time of the interviews was 39 minutes.

3.5.8 Data Management and Storage

All interviews were recorded with an audio-tape after obtaining respondents' consent. At the end of each day's interviews, recordings were stored on a laptop, with unique identifiers for client data protection purposes.

3.5.8.1 Qualitative Data Analyses

A checklist was designed and used to collect demographic information (age, marital status, locality, age at first marriage, duration of marriage and duration of practice) from all participants. This was entered into an Excel spreadsheet for analysis, and presented as

descriptive statistics on respondents displayed in the form of a table. Audio recordings of these interviews conducted in the local languages (Twi and Ga) were transcribed into English verbatim and carefully listened to as a way to ensure accuracy of the transcription. The information was stored on a password-protected computer external hard drive and a OneDrive cloud to ensure data safety.

An experienced research assistant expertly transcribed all of the interviews. Owing to the researcher's proficiency and command of the local languages used for the interview, transcription and translation of the interviews were considerably easier during the validation.

With the help of Atlas. ti, the data were processed using the theme approach for the qualitative data analysis. Recording and transcribing the interviews served as the first step in the analysis, which was followed by creating low inference descriptors. Subsequently, the transcripts were read to familiarise one's self with the content.

The following step involved the coding process, during which segments of the transcript were assigned specific codes. Deductive and inductive codes were used in combination. Deductive codes that were pre-selected and deduced from the specific study questions, were identified to start the coding procedure. The instructions' format and deductive structure made it simpler to create new codes subsequently. After that, inductive codes were created using empirical data as the basis. A focus was placed on areas of agreement and disagreement in the study participants' narratives.

The depth and breadth of themes across transcripts were described by comparing the developing themes to one another using the constant comparison approach. A coding frame defining the relationship between codes and frequency was produced.

In order to identify areas of agreement, disagreement, and absence, connections to pre-existing models and concepts were made by comparing and contrasting the findings with those of related studies with reference to Hsieh and Shannon (2005). To further illustrate the relationship between the fundamental themes, organising themes, and global themes, thematic networks were also built.

3.5.9 Reflexivity

The researcher is married with three children and familiar with the study context, having lived in two of the study localities for more than ten years. She is also aware of the cultural importance of childbearing and the discourse around the issue of infertility in Ghana as a whole. The researcher comes from a large family of 21 siblings. Before her mother gave birth to her six children, she suffered delayed fertility for 13 years, which resulted in the dissolution of her first union. This is an experience the researcher's mother also recounted to her children with some passion. To her, giving birth to a few children was not enough, she wanted to prove her womanhood by giving birth to as many as she could, resulting in six live births and several miscarriages.

The researcher recognises that both her gender, age and lived experience could influence the study and thus, the need to be continually reflexive throughout the research process in order to minimise these. The researcher kept a reflective journal during the research process, paying attention to her thoughts, subjective statements, and memos after each interview.

3.5.10 Data Quality/Methodological Rigour/Trustworthiness

Guba's four constructs (credibility, transferability, dependability, and confirmability) were used to assess trustworthiness to achieve methodological rigour in qualitative data (Shenton, 2004). Credibility refers to the authenticity of the data, which can be ensured by

giving findings to participants to validate results. Participants, if requested, were to be given their transcript to read, or they were to be read to them, for them to confirm the accuracy of the interview. Transferability refers to the ability of the research findings to fit into similar contexts outside the study situation. To ensure transferability, adequate information about the participants, the research context, and the settings were provided. This was achieved by sampling participants purposively from various backgrounds, as the different experiences of each participant would give a clearer understanding of the research questions.

Dependability pertains to the degree to which the study results would be consistent or replicable with the same subjects, or in a similar context. Dependability was strengthened by presenting an in-depth description of how the study progressed. An audit trail was kept on any decisions made on any issues during the interviews and throughout the entire data collection process.

3.6 Analytical Approach for Each Objective

3.6.1 Objective 1: Examine How Respondents' Religiosity Aligns with Their Perceptions of Infertility

This objective examines the relationship between religiosity and perceptions of infertility through a quantitative approach. This was achieved by examining the perceptions about infertility with two different outcomes: perception on treatment seeking and primary solution. Both outcomes are classified as a binary variable.

The analysis proceeds in two stages initially at the bivariate level, and subsequently at the multivariate level. In the bivariate stage, cross-tabulations with Chi-square tests (at a 95% significance level) were done to scrutinise the significant associations between each independent variable and the two outcome variables. Four separate binary logistic

regression analyses were run, owing to the binary nature of the outcome variables. This analytical strategy lays the groundwork for discussing the results, with the objective of determining the extent to which the considered variables influence perceptions of infertility. A sex-disaggregated model was not run for three reasons. First, the sex variable in the general model was not statistically significant. Also, the female-only questions (abortion, miscarriage, age at first birth) added to the female model were all not statistically significant and finally, there was no statistically significant difference between the female and male models.

3.6.2 Objective 2: Explore Religious Leaders' Perceptions about Infertility and Its Treatment

A qualitative approach was utilised to investigate the given objective. The perspectives of religious leaders in the study area were examined and analysed through the application of Atlas. ti. The outcomes and discussions were then organised into emerging themes.

3.6.3 Objective 3: Determine How Healthcare Personnel Navigate Through Their Religious Beliefs and That of Their Patients When Treating Infertility

A qualitative approach was employed to explore the specified objective. The experiences of Obstetricians/Gynaecologists were discussed concerning presentations by infertile clients, their mental states, engagement with religious rituals, and the interplay between science and religion. Atlas. ti was utilised for analysis, with codes merged into themes that collectively constituted a general theme.

3.7 Ethical Considerations

Ethical approval was given by two institutions, the University of Ghana, Legon and the Korle-Bu Teaching Hospital. This study is a thesis being carried out by a doctoral student

at the University of Ghana, Legon, thus, warranting an ethical clearance from the Institution. This was given on 19th June, 2023 by the Ethics for the Humanities (ECH) with approval number ECH 198/22-23 (Attached in appendix).

Furthermore, one aspect of the qualitative phase was carried out at the Korle-Bu Teaching Hospital, justifying ethical approval from the Korle-Bu Ethics Review Committee to complement the ethical approval from the University of Ghana. Full approval was granted on 28th September, 2023 with reference number KBTH-IRB 000152/2023 (also attached in the appendix).

The data collected were handled with full confidentiality while ensuring that transcripts and data have no personal identifiers. No personal identifiers like the name of the respondent were taken. Using both written and informed consent (consent forms attached in appendix), participants were asked to give consent to be interviewed. Participants were made aware that participation in this project was strictly voluntary and involved less than two hours of each participant's time. Research participants were made aware that they had the right not to participate or not to answer any questions. They were also informed that their decisions not to participate in the research would not influence the treatment they may have with the researcher or affect their relationship with the University of Ghana and the researcher either now, or in the future.

3.8 Study Limitations

During the study, some limitations that are worth mentioning were encountered. First, as a result of the non-random selection of the study locations, the findings of the study cannot be applied to the entire population.

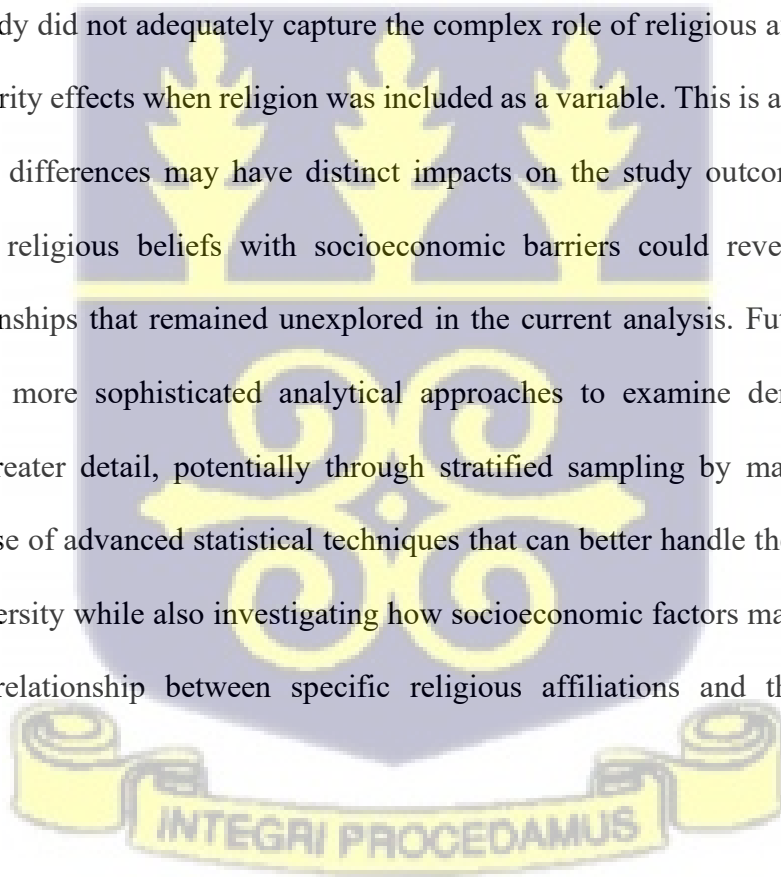
The experience of infertile couples as a former experience, may be obscured, or have a recall bias because infertility is an event that can either be in the past or present. Also,

infertility may be primary or secondary, the perception about these might be different, but the study did not ask questions in relation to a specific sub-type of infertility.

Infertility is quite a sensitive issue, and though measures such as confidentiality and having the interviews in a secluded place were taken, there may be some aspects that respondents might not be willing to share, limiting the scope of their experience.

Also, in a pro-natal cultural setting, like the research setting, that emphasizes fertility, indicates that that respondents may share views from both their personal and these dominant cultural views. Meaning the resultant views may be explained by the communal cultural perspective or a personal standpoint.

Finally, this study did not adequately capture the complex role of religious affiliation due to multicollinearity effects when religion was included as a variable. This is a limitation as denominational differences may have distinct impacts on the study outcomes, and the intersection of religious beliefs with socioeconomic barriers could reveal important nuanced relationships that remained unexplored in the current analysis. Future research should employ more sophisticated analytical approaches to examine denominational variations in greater detail, potentially through stratified sampling by major religious groups or the use of advanced statistical techniques that can better handle the complexity of religious diversity while also investigating how socioeconomic factors may mediate or moderate the relationship between specific religious affiliations and the measured outcomes.



CHAPTER FOUR

SOCIO-DEMOGRAPHIC AND ECONOMIC CHARACTERISTICS OF RESPONDENTS

4.1 Introduction

This chapter presents the socio-demographic characteristics of all respondents who participated in the qualitative and quantitative components of the study. The results from the data collection are also featured in this section.

4.2 Background Characteristics of Survey Respondents

A total of 976 respondents were surveyed in the quantitative phase of the study. Out of the 976 responses, 26, representing three percent, were excluded because of incomplete data, resulting in a final sample size of 950, out of which females formed 50.6 percent. Table 4.1 depicts the sample size distribution in each locality. Out of 950 respondents who were captured for analysis for this study, a higher proportion of them (38%) representing 361 were from Mamprobi. Respondents from Korle-Bu were the least, numbering 38 people. Korle-Gonno, Chorkor, and Old Dansoman were represented by 285, 190 and 76 people, respectively.

Table 4.1: Percentage Distribution of Study Participants by Locality

Locality	Frequency	Percentage
Chorkor	190	20.00
Mamprobi	361	38.00
Old Dansoman	76	8.00
Korle-Gonno	285	30.00
Korle-Bu	38	4.00
Total	950	100.00

4.2.1 Age Distribution of Respondents

Age is an important variable in this study. The mean age of respondents was 41 years, with a standard deviation of 9.1. Respondents' ages ranged from 25 years to 60 years. Almost equal number of male and female respondents are aged between 25 years and 34 years, while more female respondents are aged between 35 years and 44 years as compared to the males as shown in Figure 4.1.

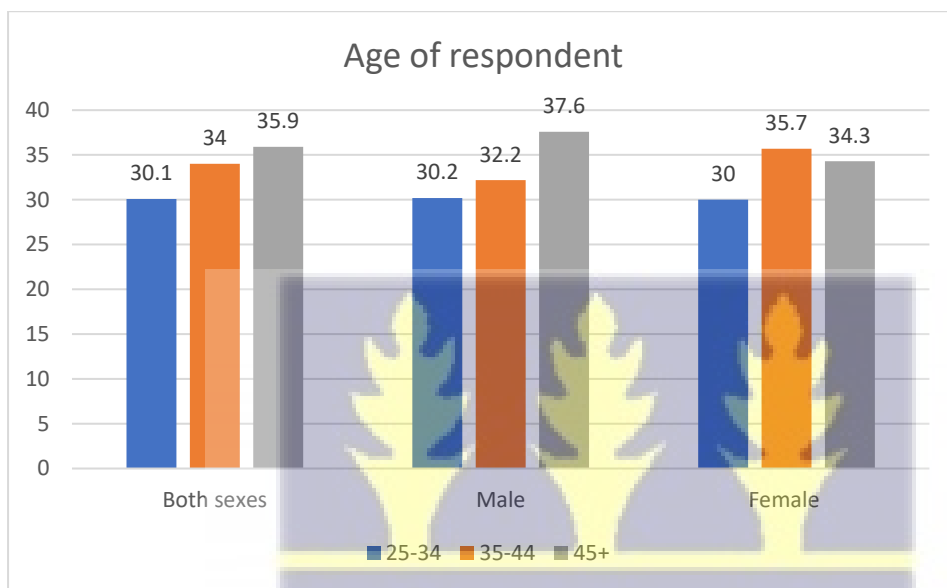


Figure 4.1: Percentage Distribution of Study Participants by Sex and Age

4.2.2 Age at First Marriage of Respondents

The age at which individuals first marry often aligns with when they begin attempting to have children, particularly in pro-natalist cultures such as Ghana. Additionally, the age at marriage, influenced by socio-cultural and biological factors, plays a significant role in shaping an individual's perceptions of infertility. Table 4.2 shows the age at first marriage of respondents, an important variable that influences fertility. The males have a higher mean age of 28.7 years compared to females with a mean age at first marriage of 23.7 years. The mean age of the general study population is 26.1 years. The median age at

marriage for females aged between 25 to 49 years in the DHS 2022 for the Greater Accra Region is notably lower than the findings of this study, whereas for males aged between 35 to 59 years, it is slightly higher (30.7 years) in the DHS compared to this study. The variance observed may be attributed to the broader coverage of the DHS, which encompasses a wider geographical area compared to the single district focus of this study, as well as differences in the reference age categories used in the computation. Nevertheless, the consistent trend of females exhibiting a lower median age at first marriage compared to males is evident both in this study and in the 2022 DHS.

Table 4.2: Distribution of Respondents by Sex and Age at First Marriage

Age at first marriage	Obs	Mean	Std err	Std. dev	95% C.I
Male	466	28.7	0.25	5.5	[28.17-29.17]
Female	484	23.7	0.23	5.01	[23.20-24.10]
Both sexes	950	26.1	0.19	5.82	[25.74-26.48]
Difference		5.02	0.34		[4.35 - 5.69]

Number of observations (Obs) Standard error (Std err) Standard deviation (Std. dev) Confidence Interval (C.I)

4.2.3 Age at First Birth of Respondents

While perceptions regarding infertility are shaped by numerous factors, the age at first birth, particularly for women who may have biological motivations to give birth within a specific timeframe, plays a crucial role. Additionally, religious beliefs, cultural context, educational background, and access to reproductive healthcare can impact the age at first birth, thereby influencing overall perceptions about infertility. Female respondents who have ever been pregnant were asked the age at which they had their first birth. Among the 418 female respondents who have ever been pregnant, the majority had their initial childbirth experience between the ages of 15 and 24 years (see Figure 4.2), a trend that is

within the national census data where the median age at first birth is reported as 23.6 years (GSS, 2022). The minimum age at first birth was 15 years and the maximum was 39 years.

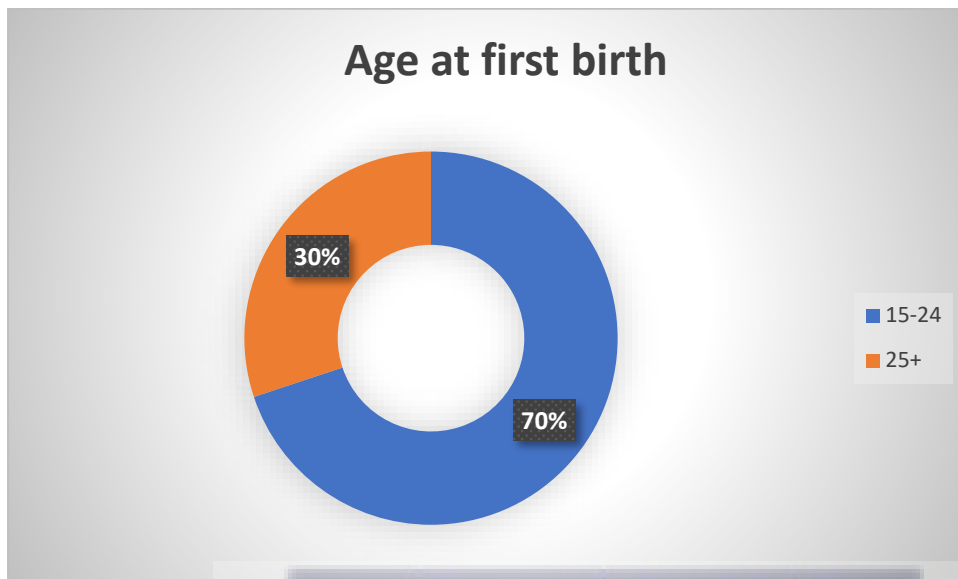
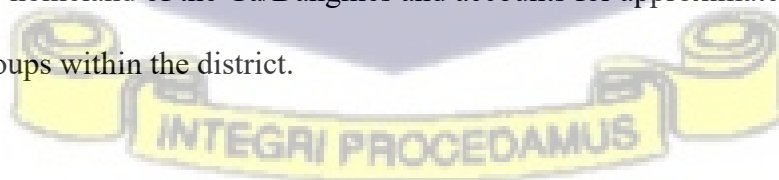


Figure 4.2: Percentage Distribution of Female Study Participants by Age at First Birth

4.2.4 Ethnicity of Respondents

Ethnicity intertwines with a diverse array of cultural, religious, socioeconomic, and historical elements, collectively shaping perceptions about infertility. By comprehending the intricate interplay among these factors, a deeper understanding of perceptions regarding infertility can be attained. Figure 4.3 shows a general trend across the general, male and female populations. The Ga/Dangmes comprised more than half of the respondents, followed by Akans and other ethnic groups. This distribution is expected, considering that the region is the homeland of the Ga/Dangmes and accounts for approximately 50 percent of the ethnic groups within the district.



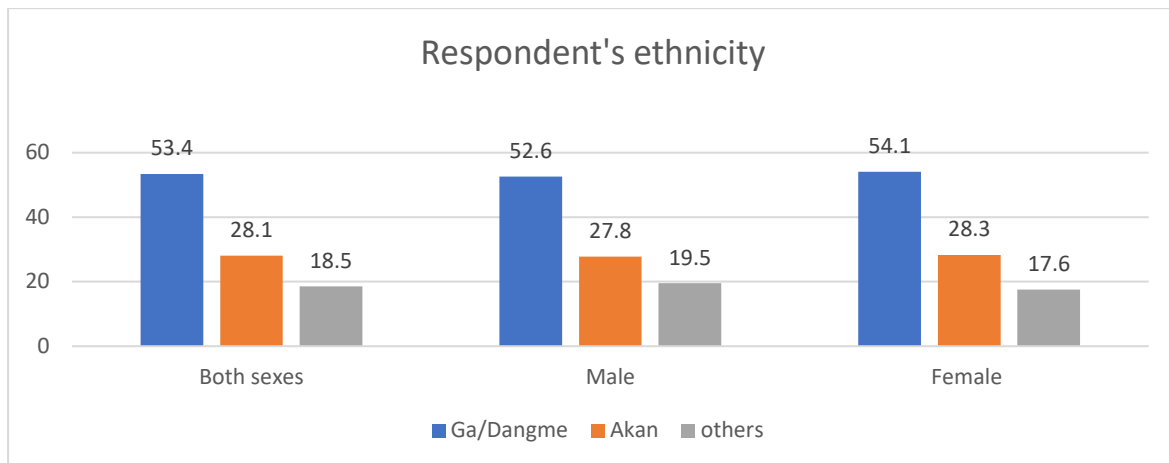


Figure 4.3: Percentage Distribution of Study Participants by Sex and Ethnicity

4.2.5 Religious Affiliation of Respondents

The religious affiliation of respondents in this study mirrors the demographic composition documented in the district's population and housing census, where approximately 90 percent of the population identifies with the Christian faith. This correspondence underscores the representation of religious beliefs within the study's participant pool, aligning closely with the broader religious landscape of the district. From Table 4.3, the majority of respondents affiliate with the Christian Religion, with Islamic Religion having the third highest percentage of respondents and Traditionalist/Spiritualists formed the lowest percentage of 1.7 percent male, female and all respondents.

Table 4.3 Percentage Distribution of Respondents by Sex and Religious Affiliation

Religious affiliation	Male (N=466)	Female (N =484)	Both sexes (N= 950)
Christian	76.6	88.8	82.8
Muslim	5.6	5.2	5.4
Traditional	1.7	1.7	1.7
No religion	16.1	4.4	10.1
Total	100	100	100

4.2.6 Marital Status of Respondents

Cultural norms regarding childbearing within marriage play a pivotal role in shaping perceptions about infertility. Married individuals often experience societal pressure or hold personal aspirations to conceive and establish a family. Consequently, married individuals facing challenges with conception may view infertility as a pressing issue, potentially conflicting with societal norms and personal ideals of parenthood within marriage. Marital status significantly influences individuals' perceptions of personal identity and life objectives, particularly regarding aspirations for parenthood and family life. Moreover, marital status can affect access to reproductive healthcare and fertility treatments, impacting an individuals' ability to seek assistance for infertility issues. Figure 4.4 shows the current marital status of the study respondents. The figure indicates that a greater proportion are currently in a union (married or cohabiting), compared to those who are not in a union (either divorced, separated or widowed).

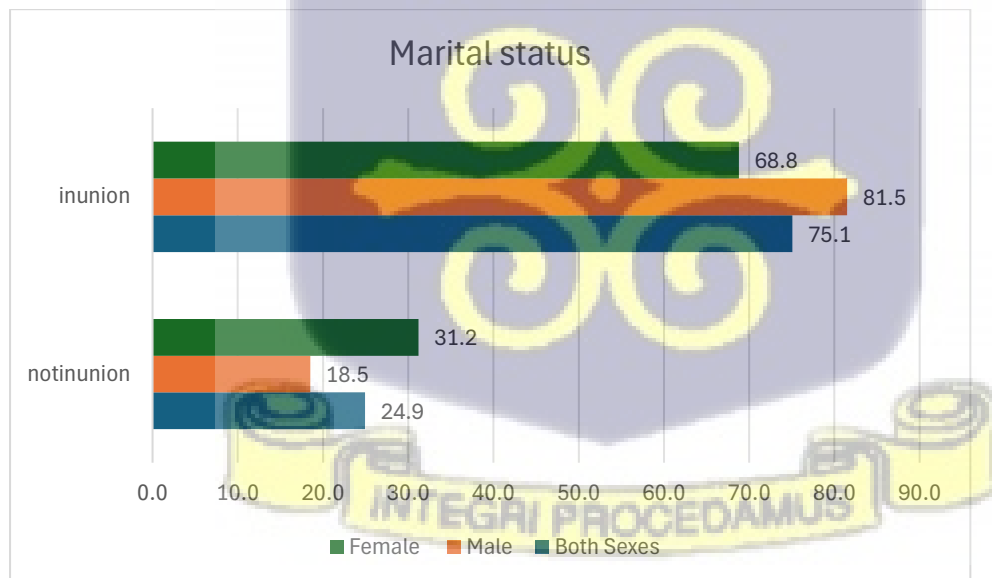


Figure 4.4: Percentage Distribution of Study Participants by Sex and Marital Status

4.2.7 Status of Bride Wealth Payment in Current Union

The payment of bride wealth is commonly viewed as an investment in the bride's fertility and her capability to bear children who will continue the family lineage. Consequently, when bride wealth is paid, particularly for the woman, there is often heightened pressure to conceive, impacting perceptions of infertility. Bride wealth influences childbearing. As shown in Figure 4.5, a little over half of the 713 respondents in unions had their bride wealth fully paid. Six out of 10 respondents had their bride wealth paid as depicted in figure 4.5.

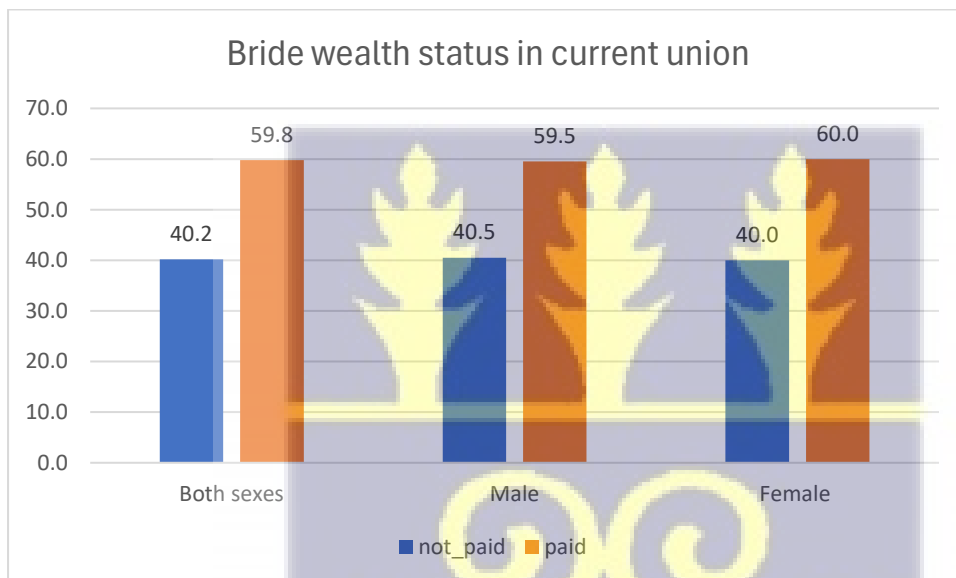


Figure 4.5: Percentage Distribution of Study Participants by Sex and Status of Bride Wealth Payment

4.2.8 Duration of Marriage

As the duration of marriage extends, expectations for initiating or enlarging a family may also rise. Couples often set a timeline for when they envision having children, and as years pass, there may be an increasing sense of anticipation or longing for parenthood. Throughout the journey of marriage, couples' perceptions and experiences may shift, influencing how they approach family planning and interact with each other and their surrounding community. Out of the 755 respondents that are married, the duration of union

ranges from one month to 43 years. The mean number of years is 10.6 years for male respondents and 13 years for female respondents as shown in Table 4.4.

Table 4.4 Distribution of Respondents by Sex and Duration of Marriage

Duration of marriage	Obs	Mean	Std. err	Std. dev	95% C. I
Male	398	10.6	0.4	8.6	[9.7-11.4]
Female	357	13	0.4	9.1	[12.0-13.9]
Combined	755	11.7	0.3	8.9	[11.1-12.4]
Difference		-2.4	0.6		[-3.7 - -1.1]

Number of observations (Obs) Standard error (Std err) Standard deviation (Std. dev) Confidence Interval (C.I)

4.2.9 Number of Children

The desire to have children and experience parenthood can be deeply ingrained in personal identity and life goals. Consequently, the inability to reach the desired family size owing to infertility can evoke emotions of disappointment, grief, and bereavement. Moreover, the desired or existing number of children within a family plays a pivotal role in shaping perceptions about infertility, molding personal aspirations, cultural norms, family dynamics, and reproductive objectives. The number of children the respondents had ranged from zero to nine with a standard deviation of 1.68 and a mean of 2.1. This mean mirrors the average number of children that a woman residing in the Greater Accra Region of Ghana would typically give birth to by the conclusion of her reproductive cycle, as documented in the 2021 Population and Housing Census for women aged 15 to 49 years, which is 2.2. Female respondents reported more children than ever born male respondents as shown in Table 4.5.

Table 4.5: Percentage Distribution of Respondents by Sex and Number of Children

Number of children	Obs	Mean	Std err	Std. dev	95% C.I
Male	466	1.8	0.1	1.3	[1.7-2.0]
Female	484	2.3	0.1	1.9	[2.2-2.5]
Combined	950	2.1	0.1	1.7	[2.0-2.2]
Difference		-0.5	0.1		[-0.7 - -0.3]

Number of observations (Obs) Standard error (Std err) Standard deviation (Std. dev) Confidence Interval (C.I)

4.2.10 Employment and Occupational Status

Employment and occupation can significantly influence perceptions about infertility by shaping financial resources, access to healthcare, work-life balance, social support networks, career aspirations, and cultural expectations surrounding parenthood. Over four-fifths of respondents (83.68%) reported being employed, a figure that correlates with the district-level data on employment, wherein more than half (57%) of the district's population is employed. Out of 795 employed respondents, the leading occupation was sales/services for both sexes (combined) and female respondents only, while skilled and unskilled respondents formed the highest proportion for males. Results on employment status and occupation are shown in Table 4.6.

Table 4.6: Percentage Distribution of Respondents by Sex and Occupation

Occupation	Both sexes (N=950)	Male (N=466)	Female (N=484)
Not working	16.7	12.0	21.3
Sales/Services	39.2	27.3	50.6
Professional/Technical	17.2	22.9	11.6
Skilled/unskilled manual	26.9	37.8	16.5
Total	100.0	100.0	100.0

4.2.11 Educational Status

Education can play a significant role in shaping perceptions about infertility by influencing awareness, attitudes, access to healthcare, and cultural beliefs related to reproductive health and family planning. Table 4.7 illustrates the educational status of the respondents in the study. The results show a greater proportion of respondents in the study had received some level of formal education. This finding is consistent with the macro-level data of the district, where more than four-fifths of the population are literate.

Table 4.7: Percentage Distribution of Respondent by Sex and Educational Level

Highest educational attainment	Both sexes (N=950)	Male (N=466)	Female (N=484)
None	7.3	3.7	10.8
Basic	45.8	40.4	51.2
Secondary	29.7	32.2	27.3
Tertiary	17.2	23.8	10.7
Total	100.0	100.0	100.0

4.2.12 Religiosity

Religiosity denotes the extent of adherence or devotion to religious beliefs and practices demonstrated by an individual. It aims to influence moral and ethical viewpoints regarding the causes of infertility and potential solutions to address infertility. Figure 4.6 illustrates the spread of respondents' religiosity based on the 15-item measurement, with scores ranging from 15 to 75. The line graph peaks at a religiosity level of 67, indicating the highest concentration of respondents (71 individuals) at this level. Furthermore, 23 respondents achieved the maximum possible score for religiosity, signifying a strong

overall level, whereas three respondents obtained the minimum score of 15. The results signify that the study population is very religious.

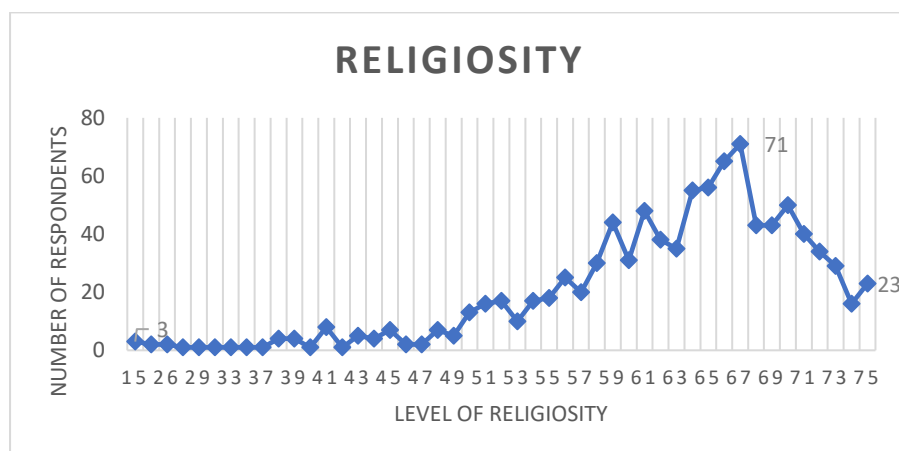


Figure 4.6: Frequency Distribution of Respondent's Religiosity

The adopted scale, the Centrality of Religiosity Scale, originally measures religiosity as a categorical variable, dividing respondents into not religious, religious, and highly religious. However, only nine respondents fell into the not religious category, necessitating a modified approach. Using the tertile principle, respondents were reclassified into three categories: less religious, moderately religious, and highly religious.

Table 4.8 presents the distribution of religiosity among the respondents: 37.1% are classified as less religious; 33.6% as moderately religious; and 29.3% as highly religious. When analysed by gender, 44.4% of males are less religious, 28.3% are moderately religious, and 27.3% are highly religious. In contrast, among females, 30.0% are less religious, 38.8% are moderately religious, and 31.2% are highly religious.

Table 4.8: Percentage Distribution of Respondents by Sex and Religiosity Level

Religiosity	Both sexes (N=950)	Male (N=466)	Female (N=484)
Less religious	37.1	44.4	30.0
Moderately religious	33.6	28.3	38.8
Highly religious	29.3	27.3	31.2
Total	100.0	100.0	100.0

4.3.13 Perceptions about Infertility

Table 4.9 outlines responses to questions regarding perceptions about infertility, starting with the outcome variables and other perception questions. For the first outcome variable, which addresses the primary solution for infertility, the majority of respondents, regardless of gender, consider medical treatment as the primary solution for infertility; and 17.4% of male respondents believe that a non-medical solution is the primary solution, compared to 18.2% of female respondents.

The second outcome variable focuses on who should seek treatment for infertility, which is a combination of two questions: who should seek treatment first and who should seek initiative for seeking treatment in cases of infertility? The descriptives reveal that more respondents believe that only one partner should seek treatment, with males slightly more likely than females to hold this view: 63.8% of male respondents think that only one partner should seek treatment, while 59.7% of female respondents share this view. In total, 61.8% of respondents favour this perspective.

The majority of respondents representing 70.4 percent reject the idea that health education is the exclusive preventive measure for infertility. A majority of participants (59.9%) do not consider infertility as a disease with 86.8% of respondents favouring traditional remedies, such as native concoctions, as the primary treatment approach, respectively.

Opinions diverge significantly on whether witchcraft plays a significant role in infertility, with 62.5% of respondents expressing disagreement. The majority of participants firmly dismiss the idea of blaming women for infertility, as evidenced by 88.1% disagreeing with this notion. Similarly, the majority reject attributing blame to men for infertility, with 94.5% of respondents disagreeing. Almost four-fifths (78.3%) of respondents believe that societal norms tend to place blame on females for infertility, indicating a prevalent

perception that societal attributions skew toward wives rather than husbands or both. Half of the respondents (50.0%) think both partners should initiate treatment seeking, but 30 percent think the wife should initiate treatment.

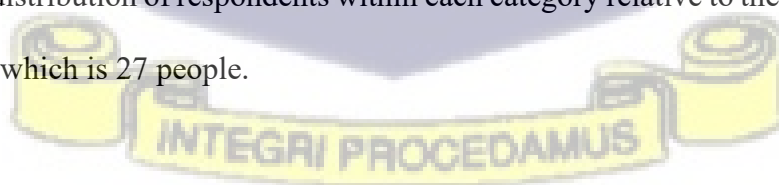
Table 4.9: Percentage Distribution of Respondent' Perceptions about Infertility by Sex

Perception	Male (N=466)	Female (N=484)	Total (N=950)
Health education is the only way to prevent infertility			
No	70.2	70.7	70.4
Yes	29.8	29.3	29.6
Native concoctions treat infertility			
Yes	87.1	86.2	86.6
No	2.9	13.8	13.4
Witchcraft major cause of infertility			
Yes	32.6	42.2	37.5
No	67.4	57.9	62.5
Infertility is a disease			
No	52.2	67.4	59.9
Yes	47.9	32.6	40.1
Men solely to be blamed			
Yes	6.2	4.8	5.5
No	93.8	95.2	94.5
Women solely to be blamed			
Yes	13.1	10.7	11.9
No	86.9	89.3	88.1
Blame for infertility			
Wife	73.6	82.9	78.3
Husband	9.03	7.02	8.0
Both	12.7	6.4	9.5
Neither	4.7	3.7	4.2

Perception	Male (N=466)	Female (N=484)	Total (N=950)
Initiative in seeking treatment			
Wife	19.7	39.3	29.7
Husband	27.9	11.4	19.5
Both	51.5	48.7	50.1
Another person	0.0	0.2	0.1
I don't know	0.9	0.4	0.6
Primary Solution			
Non-medical	18.2	17.4	17.8
Medical solution	81.8	82.6	82.2
Treatment seeking			
One partner	59.7	63.8	61.8
Both partners	40.3	36.2	38.2

4.3 Socio-Demographic Characteristics of Study Participants from the Qualitative Study

During the qualitative phase of the study, 17 religious leaders, and 10 healthcare givers (Obstetricians), were engaged in in-depth interviews. Descriptive statistics provide insights into the characteristics of the qualitative study participants, including their gender, marital status, locality, respondent type, and religious affiliation. The percentages help to understand the distribution of respondents within each category relative to the total number of respondents, which is 27 people.



4.3.1 Socio-Demographic Characteristics of Religious Leaders

Male religious leaders form 70.6 percent of respondents. Christians³ form a little over half (53%) of the respondents with Islam and traditional religion represented by four respondents (23.5%) each. The data presented in Table 4.10 suggests a varied distribution of religious leaders in relation to sex, locality and religion. The ages of the religious leaders in the study ranged from 26 years to 70 years. The duration of marriage and practice as a religious leader range from one to 40 years and one to 38 years, respectively. Their number of children ranged from none to seven children. In reference to locality, six leaders were from Mamprobi, constituting 35.3% of the total religious leaders, while the least is Korle-Bu locality with three leaders, accounting for 17.6%.

Table 4.10: Frequency Distribution of Socio-Demographic Characteristics of Religious Leaders

Characteristics	Frequencies	Percentages
Sex		
Male	12	70.6
Female	5	29.4
Religious affiliation		
Islam	4	23.5
charismatic	3	17.6
Traditional	4	23.5
Anglican	1	5.9
Presbyterian	1	5.9
Pentecost	1	5.9
Catholic	2	11.8
Methodist	1	5.9
Locality		
Mamprobi	6	35.3
Korle-Gonno	4	23.5
Korle-bu	3	17.6
Chorkor	4	23.5
	Range	
Age	26 years – 70 years	
Duration of marriage	1 - 40 years	
Years of practice	1 to 38 years	
Number of children	1 to 7	

³ Christian religious affiliation captured are presented in table 4.9. Respondents that belonged to independent Churches were classified as charismatic in nature. Traditional/ spiritualist are people who believe in the traditional religion, gods and communicate with the spirit world through libation and other mediums.

4.3.2 Socio-Demographic Characteristics of Healthcare Workers (OBGYN)

The socio-demographic characteristics of healthcare workers (OBGYN) have been displayed in Table 4.11. There were seven male and three female healthcare workers included in the study. All 10 respondents were married with a marital duration between one and 19 years. The number of years of practice as an Obstetrician/Gynaecologist ranged from one year to 20 years. All the respondents were affiliated with the Christian religion (Charismatic, Catholic, Pentecostal). The number of children they had had ranged from none to seven children.

Table 4.11: Frequency Distribution of Socio-Demographic Characteristics of OBGYN

Characteristics	Frequencies	Percentages
Sex		
Male	7	70.0
Female	3	30.0
Religious affiliation		
charismatic	4	40.0
Pentecost	3	30.0
Catholic	3	30.0
	Range	
Age	33-53 years	
Duration of marriage	1 - 19 years	
Years of service	1 to 20 years	
Number of children	1 to 3	

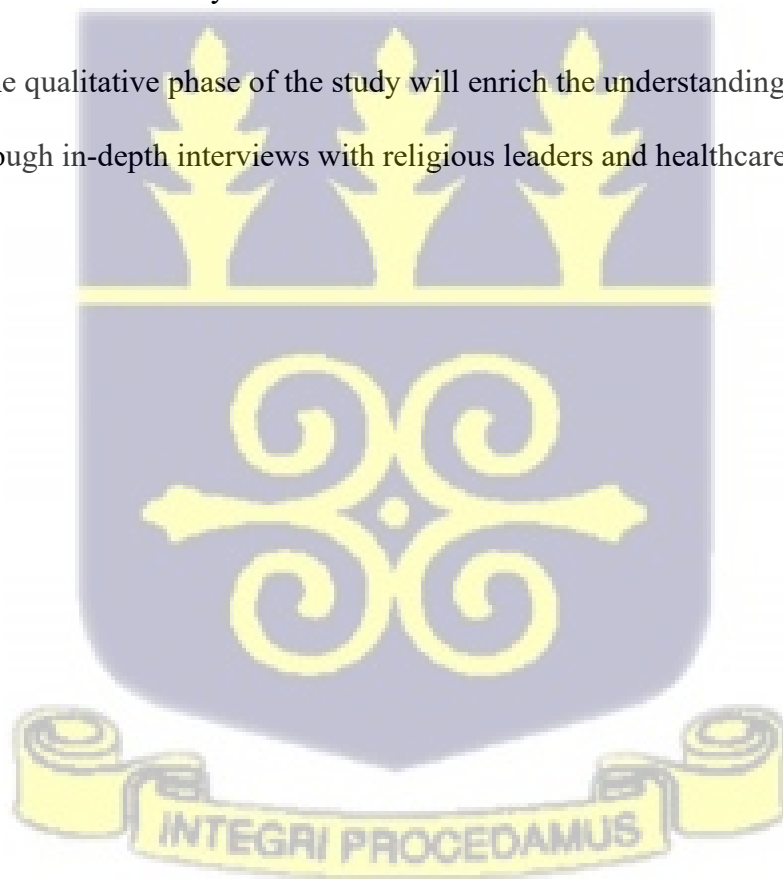
4.4 Conclusion

This chapter delved into examining the characteristics of respondents across both qualitative and quantitative phases of the study, illustrating the broad distribution of respondents across various socio-demographic traits. With a substantial sample size of 950 respondents in the quantitative phase, the study's findings reflect broader national and district-level trends in the demographics and perceptions about infertility. Key patterns such as the median age at marriage, age at first birth, religious affiliation, employment

status, and literacy rates mirror larger population trends, with the prevalence of Ga/Dangmes among respondents aligning with their significant presence in the district. These consistencies underscore the representative nature of the study's findings and validate its conclusions.

Furthermore, the study highlighted perceptions of infertility, revealing a general lack of understanding of the concept while also acknowledging the complexity of perceptions surrounding infertility. This emphasises the necessity for culturally sensitive approaches to address reproductive health issues. The diverse perspectives reflected in the responses underscore the importance of holistic and inclusive approaches in promoting reproductive well-being within the community.

Additionally, the qualitative phase of the study will enrich the understanding of infertility perceptions through in-depth interviews with religious leaders and healthcare providers.



CHAPTER FIVE

RELIGIOSITY, SOCIO-DEMOGRAPHIC AND ECONOMIC CORRELATES OF PERCEPTIONS OF INFERTILITY IN THE COMMUNITY

5.1 Introduction

This chapter aims to address the first objective, which is to investigate how religiosity affects perceptions about infertility. The initial analysis explores the relationships between the two outcome variables, which are the perceptions of infertility about: (1) treatment seeking; and (2) primary solutions to infertility, socio-demographic variables and religiosity. This analysis will reveal the associations between the different independent, control, and dependent variables, helping to measure the strength of these associations.

The chapter concludes with a discussion of the analysis, aiming to determine the extent of the influence that the variables under consideration have on each outcome about the perceptions of infertility. This discussion provides insights into the role of religiosity and other socio-demographic factors in shaping community perceptions of infertility.

5.2 The Relationships between Respondents' Religiosity, and Socio-demographic Characteristics and Perceptions about Treatment Seeking for Infertility

The results presented show the chi-square test of associations between the categorical variables and the outcome variable (treatment seeking). Table 5.1 provides information on the relationship between various socio-demographic, knowledge, and religiosity variables and the likelihood of treatment-seeking for infertility by one or both partners. The Chi-square statistic and corresponding p-values are reported for each variable. The socio-demographic variables include religiosity, sex, age, age at first marriage, number of children, highest educational level attained, occupation, ethnicity, locality, bride wealth status, and marital status.

The results indicate that 12 variables were associated with treatment seeking for infertility: religiosity, locality, educational status, status of bride wealth, occupation, number of children, age at first marriage, beliefs about religion helping infertility, blaming the wife for infertility, primary preference for treatment, considering infertility as a disease, and the purpose of marriage. However, the association between treatment seeking and sex of respondent, marital status, ethnicity, and age of respondent was not statistically significant.

Table 5.1: Relationship between Religiosity, Socio-demographic, Knowledge and Perception Variables and Treatment Seeking for Infertility

Religiosity, socio-demographic and knowledge variables	Treatment seeking for infertility				
	One partner (N=587)	Both partners (N=363)	Total	Chi square	P-value
Religiosity				14.63	0.001
Less religious	63.35	36.65	352		
Moderately religious	67.81	32.19	320		
Highly religious	52.88	47.12	278		
Locality				18.43	0.000
Korle	55.11	44.89	323		
Chorkor	56.32	43.68	190		
Mamprobi	69.11	30.89	437		
Sex				1.76	0.184
Male	59.66	40.30	466		
Female	63.84	36.16	484		
Age					
25-34	62.59	37.41	286	3.46	0.176
35-44	57.89	42.11	323		
45+	64.81	35.19	341		
Age at first marriage				27.21	0.00
15-22	74.64	25.36	276		
23-30	56.65	43.35	496		
31+	56.18	43.82	178		
Number of children				12.7	0.002
None	54.33	45.67	254		
1 - 3	62.48	37.52	549		
4+	72.11	27.89	147		
Educational status				42.56	0.000
None	76.81	23.19	69		
Basic	66.74	33.26	436		
secondary	62.77	37.23	282		
Tertiary	40.49	59.51	163		

Religiosity, socio-demographic and knowledge variables	Treatment seeking for infertility				
	One partner (N=587)	Both partners (N=363)	Total	Chi square	P-value
Marital status				1.74	0.187
Not in union	65.40	34.60	237		
In union	60.59	39.41	713		
Status of bride wealth				13.69	0.000
Paid	54.47	45.53	369		
Not paid	66.44	33.56	581		
Occupation				28.47	0.000
Not working	62.89	37.11	159		
Sales/service	65.59	34.41	372		
Professional/Technical	43.56	56.44	163		
Skilled/unskilled manual	67.19	32.81	256		
Ethnicity				0.27	0.874
Ga/Dangme	62.52	37.48	507		
Akan	60.67	39.33	267		
Others	61.36	38.64	176		
Religion help infertility				9.14	0.003
Yes	64.05	35.95	776		
No	51.72	48.28	174		
Blame for infertility				8.78	0.003
Wife	64.25	35.75	744		
Other	52.91	47.09	206		
Infertility is a disease				6.41	0.011
No	58.52	41.48	569		
Yes	66.67	33.33	381		
Purpose of marriage				12.49	0.000
Companionship/others	55.90	44.10	449		
Procreation	67.07	32.93	501		

Source: Field work, August 2023

Note: percentages in parentheses

5.2.1 Influence of Religiosity on Perception about Treatment Seeking for Infertility

The binary logistic regression model (shown in Table 5.2) explores the predictors of perceptions about who should seek treatment for infertility (that is, whether one partner or both partners should seek treatment) and the model is predicting for both partners. Table 5.3 presents two models (Model 1 and Model 2) with their corresponding odds ratios, standard errors, 95% confidence intervals, and p-values. Model 1 runs religiosity, which is the main independent variable, against perceptions that both partners should seek treatment

for infertility, while the second model includes all study variables against the same outcome.

Model 1 is statistically significant and predicts 1.2% of the variation in the predictors of perception about who should seek infertility treatment. Religiosity is significantly associated with the perception of treatment-seeking for infertility. However, both less religious and moderately religious individuals have 35 percent and 47 percent lower odds, respectively, of exhibiting the perception that both partners should seek infertility treatment.

Model 2 is also statistically significant and predicts 11.6 percent of variations in the predictors of perception about who should seek infertility treatment. The binary logistic regression models indicate that religiosity, locality, educational status, age at first marriage, number of children, bride wealth payment status, belief in religion helping infertility, blame for infertility, views on infertility as a disease, and purpose of marriage are statistically significant predictors of perception about infertility treatment-seeking.

Religiosity remains a significant factor in the second model, and the result that less and moderately religious respondents are less likely to recommend both partners seeking treatment is unchanged. This is probably due to the interaction with other socio-demographic variables in the model. This aligns with a study by Sudhinaraset et al. (2014), recognising religiosity as a crucial factor in the decision-making process for infertility solutions, and contrasting White et al. (2006), who found no such correlation. The current study corroborates the notion that religious convictions significantly dictate perceptions and approaches to medical intervention across various cultural contexts (Smith et al., 2009; Edirne et al., 2010; Bardaweel et al., 2013). Religion has been documented to instil prenatal beliefs and lower acceptance to childlessness (Greil et al., 2010), thus, making very

religious persons more likely to predict that both partners together should seek treatment. Dimka and Dein (2013) found that traditional and religious healing modalities were a major source of help, while Read et al. (2014) found that people often combine religious, lifestyle and alternative medicine during infertility, buttressing the importance of religion in infertility treatment. Measurements or measures used to capture religiosity might differ from one study to the other, and this could mainly account for the variance recorded in studies and to factors that are context specific.

These findings explain the practical operation of lived religion theory in infertility contexts. The observation that highly religious individuals demonstrate greater support for comprehensive treatment approaches (both partners seeking care) suggests that lived religious practice transcends formal doctrinal boundaries to embrace pragmatic problem-solving. Rather than restricting healthcare engagement, deeper religious involvement appears to foster more inclusive help-seeking behaviors. This challenges assumptions about religious conservatism as a barrier to medical care, revealing instead how lived religion adapts formal teachings to address immediate human needs. The variation across religious intensity levels demonstrates that religious practice, rather than mere belief, shapes healthcare decision-making in nuanced ways that formal doctrine alone cannot predict.

Explaining why locality predicts that both partners should seek treatment can be challenging. This stems from the fact that all the referenced localities are within the same district, hence all are urban and situated near the teaching hospital. Despite this, residents of Korle (Korle-Bu and Korle-Gonno) and Chorkor have a higher likelihood of believing that both partners should seek treatment compared to those in Mamprobi. One plausible explanation could be the underlying differences in educational and income characteristics of respondents from these locations.

Consistent with literature (Greil et al., 2010; Iba et al., 2021), education displayed a statistically significant association with treatment-seeking in all categories. Those without tertiary education significantly have lower odds of endorsing the idea that both partners should seek treatment, compared to their counterparts with tertiary education. This is an expected trend, because as education increases, people will be enlightened about the causes of infertility with the understanding that it could be from any of the parties involved. This supports the notion that education can enhance understanding and reduce misconceptions about infertility, promoting a more inclusive approach to treatment (Boivin et al., 2007). Aggrey et al. (2021) found that education significantly increased the involvement in health seeking, but higher education in men did not significantly affect men's involvement in infertility health seeking behaviour. This is at variance with another study by Anderson et al. (2009) where education increased reproductive health seeking in men. The variance could be methodological differences, or due to specific study area contexts.

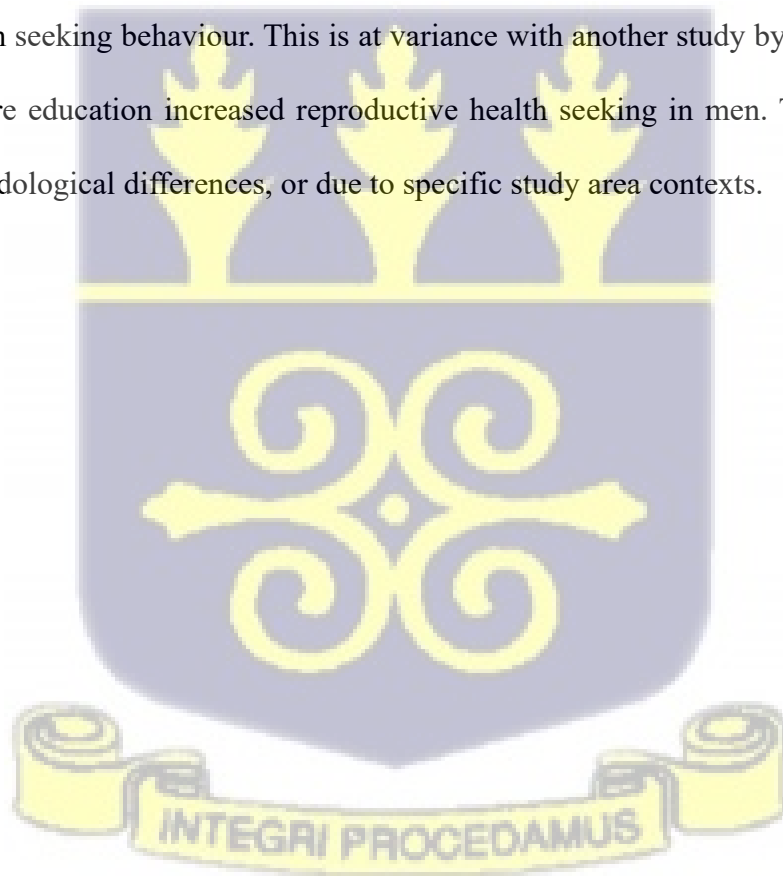


Table 5.2: Predictors of the Perception that both Partners should Undergo Treatment Seeking for Infertility

	Model 1			Model 2		
Characteristics	odds ratio (std. err)	[95% Conf. Interval]	P-value	odds ratio (std. err)	[95% Conf. Interval]	P-value
Religiosity						
Highly religious (RC)	1.00			1.00		
Less religious	0.65 (0.11)	[0.47 - 0.89]	0.008***	0.73 (0.14)	[0.50 - 1.06]	0.094*
Moderately religious	0.53 (0.09)	[0.38 - 0.74]	0.000***	0.61 (0.11)	[0.42 - 0.88]	0.009***
Locality						
Mamprobi (RC)				1.00		
Korle				1.94 (0.34)	[1.38 - 2.74]	0.000***
Chorkor				2.95 (0.66)	[1.90 - 4.56]	0.000***
Sex						
Male (RC)				1.00		
Female				1.33 (0.24)	[0.93 - 1.88]	0.114
Age						
45+ (RC)				1.00		
25 - 34				1.10(0.22)	[0.74 - 1.63]	0.636
35 - 44				1.12(0.20)	[0.79 - 1.59]	0.523
Age at first marriage						
15 - 22 (RC)				1.00		
25 - 30				2.17 (0.44)	[1.46 - 3.22]	0.000***
31+				2.22 (0.59)	[1.31 - 3.76]	0.003***
Number of children						
0 (RC)				1.00		
1 - 3				0.75 (0.13)	[0.53 - 1.04]	0.088*
4+				0.51 (0.13)	[0.30 - 0.84]	0.008***
Educational status						
Tertiary (RC)				1.00		
None				0.29 (0.11)	[0.13 - 0.61]	0.001***
Basic				0.49 (0.11)	[0.31 - 0.77]	0.002***
Secondary				0.55 (0.13)	[0.35 - 0.86]	0.009***

	Model 1			Model 2		
Characteristics	odds ratio (std. err)	[95% Conf. Interval]	P-value	odds ratio (std. err)	[95% Conf. Interval]	P-value
Marital status						
Not in union (RC)				1.00		
In union				0.82 (0.67)	[0.55 - 1.23]	0.341
Status of bride wealth						
Paid (RC)				1.00		
Not paid				0.65 (0.12)	[0.45 - 0.93]	0.019**
Occupation						
Not working (RC)				1.00		
Sales/service				0.91 (0.19)	[0.60 - 1.39]	0.667
Professional/Technical				1.22 (0.33)	[0.72 - 2.07]	0.465
Skilled/unskilled manual				0.81 (0.19)	[0.51 - 1.29]	0.369
Ethnicity						
Others (RC)				1.00		
Ga/Dangme				1.17 (0.23)	[0.79 - 1.72]	0.441
Akan				1.22 (0.27)	[0.79 - 1.89]	0.363
Religion help infertility						
No (RC)				1.00		
Yes				0.66 (0.13)	[0.46 - 0.96]	0.031**
Blame for infertility						
Other				1.00		
Wife				0.67 (0.13)	[0.46 - 0.97]	0.034**
Infertility is a disease						
No				1.00		
Yes				0.61 (0.09)	[0.45 - 0.82]	0.001***
Purpose of marriage						
Companionship/others				1.00		
Procreation				0.67 (0.10)	[0.50 - 0.90]	0.007***

Source: Field work, August, 2023 *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$ RC- Reference Category, standard error, CI- Confidence Interval (in parenthesis)
 Model 1: Pseudo R2 =0.0115; X2 =0.0007; N= 950. Model 2: Pseudo R2=0.1164, X2= 0.000; N= 950

Being in a union or not did not significantly predict that both partners should seek treatment, however bride wealth payment significantly predicts the odds. Contrary to this finding, marital status and the type of union have been documented to affect treatment seeking in some studies (Dhont et al., 2010; Aggrey et al., 2021). This could be attributed to the cultural context where payment of bride wealth equates to marriage and also the fact that both cohabiting and marriage respondents were captured as being in union. The characteristics of these groups in relation to fertility might be different though they are all in union. Being in a union where bride wealth is not paid is associated with a 35 percent lower likelihood of perceiving that both partners should seek treatment, in contrast to unions where bride wealth is paid. Bride wealth payment increases societal expectation on the couple to have children. Even though the pressure is mostly on the woman, men sometimes feel the pressure to take further steps to salvage the situation.

The association between the number of children and the likelihood of perceiving both partners to seek treatment for infertility is significant. Specifically, individuals with one or more children are less likely to perceive that both partners should seek treatment compared to those without any children (nulliparous individuals). This observation aligns with literature suggesting that the number of children one has can influence the propensity to seek help for infertility among both men and women, as highlighted in studies by Passet-Wittig and Greil (2021). However, research findings in this area present a mixed picture. Some studies, such as those by Janitz et al. (2019), Farland et al. (2016) and Greil et al. (2013), all conducted in the United States, have found a significant relationship between parity and the likelihood of seeking help. In contrast, other investigations, including those by Hotaling et al. (2012), Marino et al. (2011) and Datta et al. (2016), have not found a significant link between these factors. This inconsistency could be attributed to various contexts, as the process of seeking treatment is complex and the significance of variables can vary depending on the treatment-seeking stage.

Additionally, the method by which the first child was conceived is also worth considering; if the first child was born following infertility treatment, this could influence the likelihood of seeking help for subsequent pregnancies. Moreover, the age at which the first child is born, the union (previous or current) out of which that child was born should be considered, as it could affect the decision to seek help.

Respondents who believe society blames women for infertility have a 33 percent lower likelihood of endorsing the idea that both partners should seek treatment, compared to those who attribute blame elsewhere. This is not surprising as they may feel that the woman should seek treatment because society believes the problem is from her. It is surprising that respondents who consider infertility as a disease are associated with 39 percent lower odds of holding the belief that both partners should seek treatment, compared to those who perceive it differently. This could probably be explained that they believe the disease is with one partner, not both. Holding the view that marriage is primarily for procreation is associated with a 33 percent lower likelihood of endorsing the idea that both partners should seek treatment, compared to those who view marriage for other reasons such as companionship. A plausible explanation could be that society has shifted the onus of childbirth on a woman both in informal and formal interactions.

Notably, age, sex, occupation, and ethnicity do not demonstrate a statistically significant association with infertility treatment-seeking behaviour in contrast to existing literature (Culley, Hudson and Lohan, 2013; Aggrey et al., 2021). Although females have 33 percent higher odds of seeking treatment compared to males, this difference lacks statistical significance, which is at variance to studies by Katon et al. (2014) and Chandra et al. (2014). This could be supported by the feminised perception of infertility (Dhont et al., 2010; Culley,

Hudson and Lohan, 2013; Grace et al., 2019), thus more females would want a comprehensive health check.

5.3 The Relationships between Respondents' Religiosity and Socio-demographic Characteristics, and Perceptions about the Primary Solution for Infertility

The results present the chi-square test of associations between the categorical variables and the outcome variable, treatment seeking (see Table 5.3).

Table 5.3 provides information on the relationship between various socio-demographic, knowledge about infertility, and religiosity variables and the likelihood of medical or non-medical options as the primary solution for infertility. The Chi-square statistic and corresponding p-values are reported for each variable. The socio-demographic variables include religiosity, sex of respondent, highest educational level attained, occupation, ethnicity, locality, bride wealth status, and marital status.

The results indicate that the variables, the primary preference for treatment-seeking and the experience of delayed birth are strongly associated with the choice between non-medical and medical solutions for infertility. Other factors such as locality and beliefs about religion helping infertility (offering a solution), also show some association with the outcome variable. However, the association between the primary solution for infertility and the remaining variables was not statistically significant. There is no statistically significant association between religiosity and the primary solution chosen for infertility. The choice between non-medical and medical solutions is similar across different levels of religiosity.

Table 5.3: Relationship between Religiosity, Socio-demographic, Knowledge and Perception Variables and Primary Solution for Infertility

Religiosity, socio-demographic and knowledge variables	Primary solution for infertility				
	Non-Medical	Medical	Total	Chi square	P-value
	(N=169)	(N=781)			
Religiosity				0.008	0.996
Less religious	17.90	82.10	352		
Moderately religious	17.81	82.19	320		
Highly religious	17.63	82.37	278		
Locality				28.3175	0.000
Korle	11.76	88.24	323		
Chorkor	11.58	88.42	190		
Mamprobi	24.94	75.06	437		
Sex				0.1271	0.721
Male	18.24	81.76	466		
Female	17.36	82.64	484		
AGE				5.144	0.076
25-34	16.78	83.22	286		
35-44	14.86	85.14	323		
45+	21.41	78.59	341		
Age at first marriage				0.846	0.66
15-22	19.57	83.43	276		
23-30	17.14	82.86	496		
31+	16.85	83.15	178		
Age at first birth				1.638	0.201
15-24	19.52	80.48	292		
25+	14.29	85.71	126		
Number of children				0.3093	0.857
None	18.9	81.1	254		
1 - 3	17.49	82.51	549		
4+	17.01	82.99	147		
Educational status				6.5216	0.089
None	17.39	82.61	69		
Basic	18.81	81.19	436		
Secondary	20.21	79.79	282		
Tertiary	11.04	88.96	163		
Marital status				0.0518	0.820
Not in union	17.30	82.70	237		
In union	17.74	74.90	713		
Status of bride wealth				0.0125	0.911
Paid	17.62	82.38	369		
Not paid	17.90	82.10	581		

Religiosity, socio-demographic and knowledge variables	Primary solution for infertility				
	Non-Medical	Medical	Total	Chi square	P-value
	(N=169)	(N=781)			
Occupation				2.3452	0.504
Not working	17.61	82.39	159		
Sales/service	16.94	83.06	372		
Professional/Technical	15.34	84.66	163		
Skilled/unskilled manual	20.70	79.30	256		
Ethnicity				1.098	0.577
Ga/Dangme	16.96	83.04	507		
Akan	17.60	82.40	267		
Others	20.45	79.55	176		
Infertility is a disease				0.2312	0.631
No	18.28	81.72	569		
Yes	17.06	82.94	381		
Witchcraft major cause of infertility				1.8069	0.179
Yes	19.94	80.06	356		
No	16.5	83.5	594		
Heard of ART				1.0738	0.300
No	15.88	84.12	296		
Yes	18.65	81.35	654		
Religion help infertility				3.0434	0.081
Yes	18.81	81.19	776		
No	13.22	86.78	174		
Religion support ART				6.8522	0.009
No	19.47	80.53	750		
Yes	11.5	88.5	200		
Experience of delayed birth				4.7516	0.029
No	16.81	83.19	839		
Yes	25.23	74.77	111		
Health Insurance				0.722	0.395
No	19.48	80.52	215		
Yes	17.13	82.87	683		
Purpose of marriage				0.0221	0.882
Companionship/others	17.60	82.40			
Procreation	18.00	82.00			

Source: Field work, August, 2023

Note: percentages in parentheses

5.3.1 Influence of Religiosity on Perception about Primary Solution for Infertility

The binary logistic regression analysis presented in Table 5.4 delves into the factors influencing the selection of the primary solution for infertility, distinguishing between medical and non-medical options. The table comprises two models, Model 1 and Model 2, each predicting for medical as the primary solution, and presents distinct predictors with their corresponding odds ratios, standard errors, 95 percent confidence intervals, and p-values.

Model 1 is not statistically significant and does not predict any variation in the predictors regarding perceptions about the primary solution for infertility. Notably, religiosity does not exhibit a significant association with the perception of primary solution to treatment. Model 2, however, is statistically significant and predicts 7.5 percent of variations in the predictors of perceptions regarding the primary solution for infertility. The logistic regression model indicates that locality, age (35 to 44 years), educational status (basic and secondary), blame for infertility, witchcraft as a major cause of infertility, and the experience of delayed birth are substantial predictors of the primary solution chosen for infertility.

There is no clear statistical relationship found between levels of religiosity and the preferred primary solution for infertility. This could be due to several reasons, such as treatment preferences being shaped more by cultural factors, norms, and other social influences. Additionally, religiosity is not monolithic; variations can exist even within a single religious group. People may also separate their belief systems from their practices, with decisions influenced by access to information, personal experiences, and education. However, there is a notable connection between the belief in witchcraft as a significant cause of infertility and the likelihood of considering medical intervention as the primary solution. Specifically, individuals who consider witchcraft to be a major factor are less likely to view medical approaches as a viable solution to infertility, which aligns with the expectation that medical and witchcraft

beliefs operate on distinct levels. Congruent to this finding is that of Kuug et al. (2023), where respondents believed that the solution to infertility lies in its cause. If the cause is traditional (as in an ancestral lineage curse) then traditional remedies to appease the gods must be performed. A qualitative study in South Africa among infertile women revealed that women sought help from traditional healers and witch doctors to be cleansed from jealous women in their partner's life (past girl friends or mothers-in-law) who had bewitched them (Dyer et al., 2002).

It is well established that the risk of infertility increases with age (Liu et al., 2012). Studies from different countries have shown that the probability of medical help-seeking increases with women's age (Chandra et al., 2014; Datta et al., 2016; Greil et al., 2013; Janitz et al., 2019; Sudhinaraset et al., 2014). Respondents aged between 35 and 44 years displayed a significant association with the perception that medical treatment is a primary solution. They exhibited 47 percent higher odds of choosing medical intervention as a primary solution to infertility. This phenomenon may stem from a combination of biological and cultural influences that exert pressure on individuals to address their delayed fertility. Additionally, they may have explored various solutions prior to reaching this age, all without success.

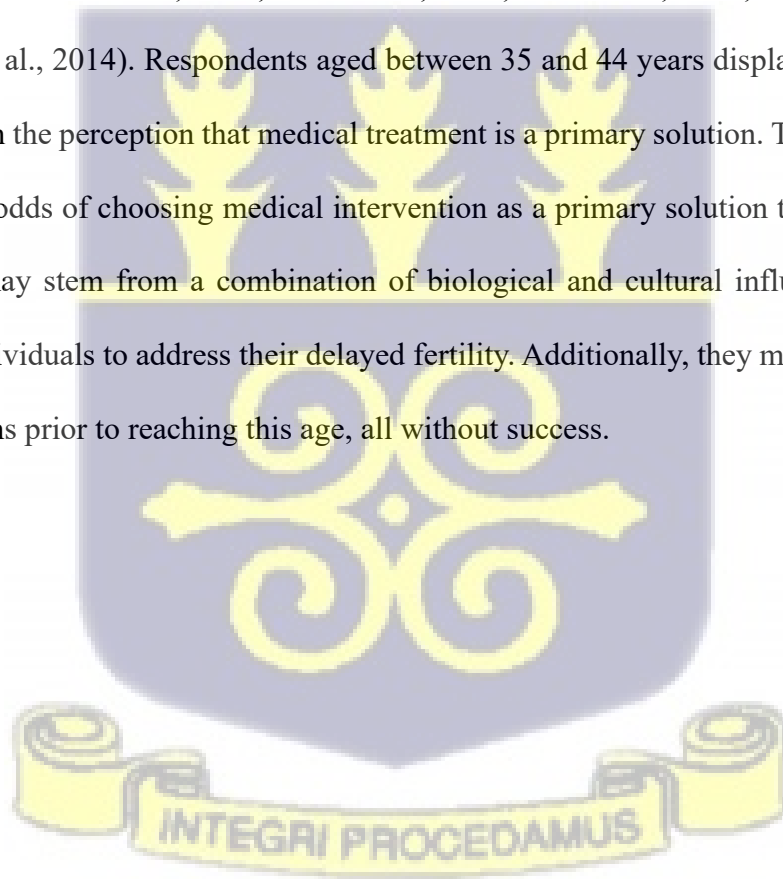


Table 5.4: Predictors of Perceptions that the Medical Option is the Primary Solution for Infertility

	Model 1			Model 2		
Characteristics	odds ratio (std. err)	[95% Conf. Interval]	P- value	odds ratio (std. err)	[95% Conf. Interval]	P-value
Religiosity						
Highly religious (RC)	1.00			1.00		
Less religious	0.98 (0.21)	[0.65 - 1.48]	0.929	0.87 (0.21)	[0.54 - 1.38]	0.548
Moderately religious	0.99 (0.21)	[0.65 - 1.50]	0.952	1.02 (0.24)	[0.65 - 1.61]	0.920
Locality						
Mamprobi (RC)				1.00		
Korle				2.49 (0.59)	[1.57 - 3.95]	0.000***
Chorkor				4.40 (1.34)	[2.41 - 8.03]	0.000***
Sex						
Male (RC)				1.00		
Female				1.32 (0.30)	[0.85 - 2.05]	0.211
Age						
45+ (RC)				1.00		
25 - 34				1.35(0.34)	[0.82 - 2.22]	0.236
35 - 44				1.47 (0.33)	[0.95 - 2.27]	0.082*
Age at first marriage						
15 - 22 (RC)				1.00		
25 - 30				1.33 (0.30)	[0.85 - 2.08]	0.216
31+				1.66 (0.53)	[0.89 - 3.10]	0.108
Number of children						
0 (RC)				1.00		
1 - 3				0.82 (0.23)	[0.47 - 1.43]	0.489
4+				0.86 (0.32)	[0.41 - 1.79]	0.685



	Model 1			Model 2		
Characteristics	odds ratio (std. err)	[95% Conf. Interval]	P- value	odds ratio (std. err)	[95% Conf. Interval]	P-value
Educational status						
Tertiary (RC)						
None				0.53 (0.25)	[0.21 - 1.36]	0.188
Basic				0.48 (0.16)	[0.25 - 0.91]	0.025**
Secondary				0.50 (0.16)	[0.27 - 0.94]	0.032**
Marital status						
Not in union (RC)				1.00		
In union				0.89 (0.22)	[0.55 - 1.44]	0.641
Status of bride wealth						
Paid (RC)				1.00		
Not paid				0.89 (0.20)	[0.57 - 1.39]	0.598
Occupation						
Not working (RC)				1.00		
Sales/Service				1.12 (0.29)	[0.66 - 1.88]	0.689
Professional/Technical				0.95 (0.33)	[0.48 - 1.88]	0.887
Skilled/Unskilled manual				0.94 (0.27)	[0.54 - 1.64]	0.832
Ethnicity						
Others (RC)				1.00		
Ga/Dangme				1.41 (0.34)	[0.89 - 2.26]	0.147
Akan				1.36 (0.36)	[0.80 - 2.28]	0.249
Heard of ART						
No (RC)				1.00		



	Model 1			Model 2		
Characteristics	odds ratio (std. err)	[95% Conf. Interval]	P- value	odds ratio (std. err)	[95% Conf. Interval]	P-value
Yes				0.79 (0.17)	[0.52 - 1.20]	0.273
Religion help infertility						
Yes (RC)				1.00		
No				1.34 (0.35)	[0.81 - 2.23]	0.258
Religion Support ART						
No (RC)				1.00		
Yes				1.37 (0.36)	[0.82 - 2.29]	0.224
Blame for infertility						
Other (RC)				1.00		
Wife				1.61 (0.38)	[1.01 - 2.56]	0.046**
Witchcraft major cause						
No (RC)				1.00		
Yes				0.72 (0.14)	[0.49 - 1.06]	0.096*
Infertility is a disease						
No				1.00		
Yes				1.11 (0.21)	[0.77 - 1.60]	0.566
Experience of delayed birth						
No				1.00		
Yes				0.45 (0.16)	[0.22 - 0.89]	0.024**

Source: Field work, August, 2023 *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$ RC- Reference Category, standard error; CI- Confidence Interval (in parenthesis) Model 1: Pseudo R² =0.0000; chi² =0.9960; N= 950. Model 2: Pseudo R²=0.0749, chi²= 0.0001; N= 950



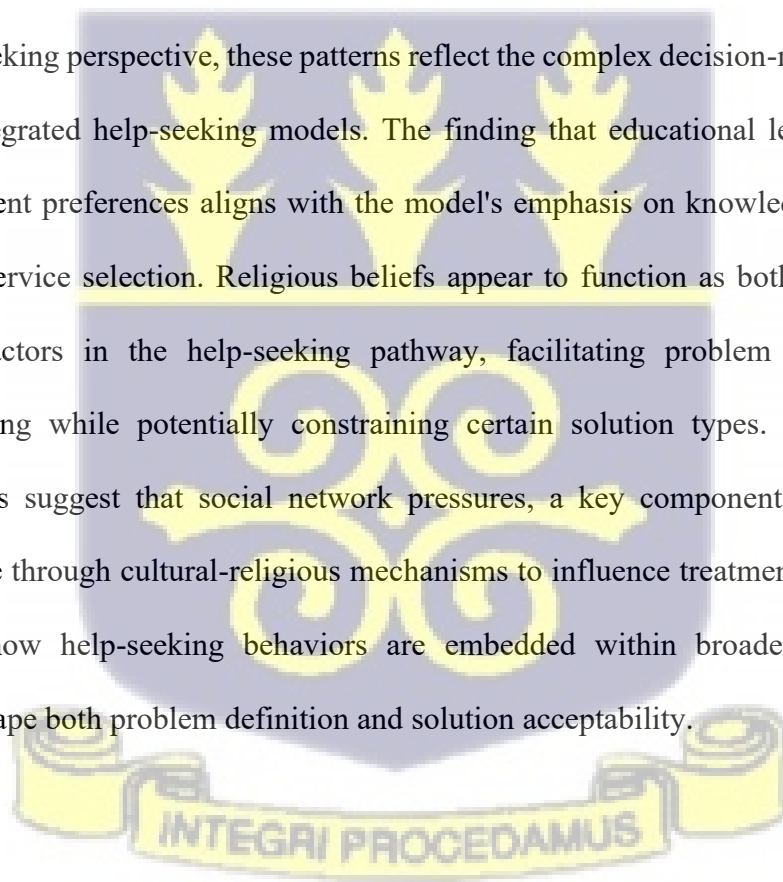
Education, consistent with findings from global studies, has been shown to be positively correlated with the likelihood of seeking medical treatment for both men and women (Anderson et al., 2009; Chandra, Copen and Stephen, 2014; Kelley et al., 2019). Notably, those with tertiary education are more inclined to consider medical options for addressing health issues than those with only basic or secondary education, who show significantly lower odds of doing so. This trend may be attributed to the role of education in enhancing understanding of health-related issues, such as infertility, and in fostering recognition of possible medical interventions. Education not only broadens one's knowledge and awareness, but may also reflect a higher socio-economic status, which in turn can influence various factors such as income, living conditions, accessibility to healthcare facilities, and availability of health insurance.

Individuals who have experienced delayed birth have 45 percent lower odds of choosing medical as a primary solution as compared to those who have not experienced it. The plausible reasons could be that perhaps their belief that the delay is due to factors outside the medical field including spiritual forces and therefore treatment must equally be sought from non-medical sources. Additionally, this might also suggest that individuals found success with solutions outside the medical realm, or perhaps they simply required some patience to see improvement. Additionally, those who have not undergone similar experiences may lean towards treatment options based on informed choices, rather than personal encounters. Individuals in Korle Bu and Chorkor exhibit higher odds of opting for a medical solution compared to those in Mamprobi. This could be due to the proximity of respondents living in Korle-Bu to the teaching hospital or their access to healthcare workers. For respondents in Chorkor, a higher desire for children compared to those in Mamprobi might lead to increased pressure to seek healthcare solutions. However, the exact reason remains unclear.

On the other hand, various factors such as sex, age, age at first marriage, number of children, occupation, marital status, status of bride wealth payment, ethnicity, religion helping infertility (offering a solution), and infertility as a disease, do not exhibit a statistically significant

association with the choice of the primary solution. Despite their apparent lack of significance, there are intriguing patterns in the findings. Among respondents who believe that their religion supports Assisted Reproductive Technology (ART), there is a 37 percent increase in the odds of perceiving medical intervention as the primary solution for infertility. Conversely, respondents who are aware of ART tend to have lower odds of attributing medical intervention as the primary treatment for infertility. This variation could be linked to the sources and depth of information they have received. Furthermore, those who perceive religion as not helpful in overcoming infertility have a 34 percent higher likelihood of agreeing that medical intervention is the primary solution for infertility as compared to those who do not. This is not surprising as they will focus their attention to solutions that might help them, supporting findings from Kuggs et al. (2023).

From a help-seeking perspective, these patterns reflect the complex decision-making processes outlined in integrated help-seeking models. The finding that educational level significantly predicts treatment preferences aligns with the model's emphasis on knowledge and resource evaluation in service selection. Religious beliefs appear to function as both facilitating and constraining factors in the help-seeking pathway, facilitating problem recognition and emotional coping while potentially constraining certain solution types. The bridewealth payment effects suggest that social network pressures, a key component of help-seeking models, operate through cultural-religious mechanisms to influence treatment decisions. This demonstrates how help-seeking behaviors are embedded within broader socio-religious systems that shape both problem definition and solution acceptability.



5.4 Theoretical Integration and Conclusion

The convergent findings across religiosity levels and demographic factors reveal how lived religion theory and help-seeking models operate synergistically in infertility contexts. Community members demonstrate practical religious adaptation, modifying treatment

expectations based on lived religious practice rather than formal doctrine alone. The finding that highly religious individuals support comprehensive treatment approaches suggests that deeper religious engagement facilitates inclusive help-seeking behaviours, challenging theoretical assumptions about religious conservatism as a healthcare barrier.

The help-seeking patterns identified reveal a complex multi-directional pathway rather than the linear progression often depicted in theoretical models. Educational level, bride wealth status, and religious beliefs interact to shape service selection in ways that reflect both cultural embedding and pragmatic problem-solving. This challenges theoretical models that position religious and medical help-seeking as competing alternatives, revealing instead their complementary operation in practice.

These findings contribute to lived religion theory by demonstrating its applicability to healthcare decision-making contexts, showing how religious practice shapes medical choices in culturally specific ways. The help-seeking model gains nuanced understanding through recognition of how religious networks function simultaneously as pathways to and alternatives to formal healthcare systems. This research extends both theoretical frameworks beyond their original applications, providing empirically-grounded insights into the cultural-religious dimensions of healthcare behavior in sub-Saharan African contexts.

5.5 Conclusion

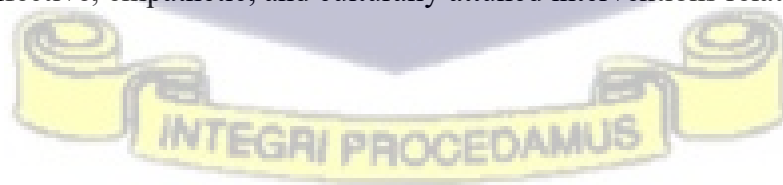
The objective of this chapter was to explore the determinants of perceptions about who should undergo infertility treatment and what constitutes its primary solution. This study distinguishes itself by addressing the often overlooked aspect of societal beliefs about who should seek infertility treatment, filling in a gap in the existing literature.

It emphasises how cultural, educational, and demographic factors intricately shape individuals' beliefs and decisions regarding the appropriate party to seek infertility treatment. The profound influence of religiosity on these decisions is noted, aligning with some scholarly views, while

challenging others. Education level stands out as a crucial factor, enhancing understanding of infertility and encouraging a more inclusive mindset towards treatment. The research also delves into the subtle impacts of marital status and cultural practices, like bride wealth, reflecting the weight of societal expectations and norms. Furthermore, it addresses the complex dynamics of societal attitudes toward infertility, particularly in terms of assigning blame, and how these attitudes affect couples' approaches to seeking treatment. This study adds depth to the understanding of the complex factors that drive the behaviour of seeking infertility treatment, underscoring the need to consider an array of cultural, social, and educational elements in tackling infertility challenges across diverse groups.

Regarding the primary solutions to infertility, the study found no direct correlation between religiosity and treatment choices. However, it uncovers intricate relationships between witchcraft beliefs, experiences of delayed childbirth, and education levels, showcasing the variety of factors influencing treatment decisions. The data indicate that personal history and level of education significantly affect individuals' strategies for addressing infertility, with those possessing higher educational backgrounds and belonging to specific age groups being more likely to opt for medical solutions.

In totality, the findings provide important insights into perceptions and the decision-making processes surrounding infertility treatment among community members, presenting a detailed view that could guide healthcare professionals, policy makers, and community leaders in crafting more effective, empathetic, and culturally attuned interventions related to infertility.



CHAPTER SIX

RELIGIOUS LEADERS AND PERCEPTION ABOUT INFERTILITY

6.1 Introduction

This section delves into the understanding and perceptions of religious leaders concerning infertility. The comprehensive interviews centered on their familiarity with infertility treatment and their position on artificial reproductive technologies. The initial part of this section presents the results from these in-depth interviews, categorised into three primary themes: (1) their knowledge about infertility; (2) their perspectives on artificial reproductive technology (ART); and (3) their suggested remedies for infertility. The subsequent sections provide a detailed analysis of these findings, drawing comparisons with existing literature in the Ghanaian, African, and global landscapes. Figure 6.1 presents a visual representation of the thematic structure for this chapter, each segment effectively conveying its respective results.



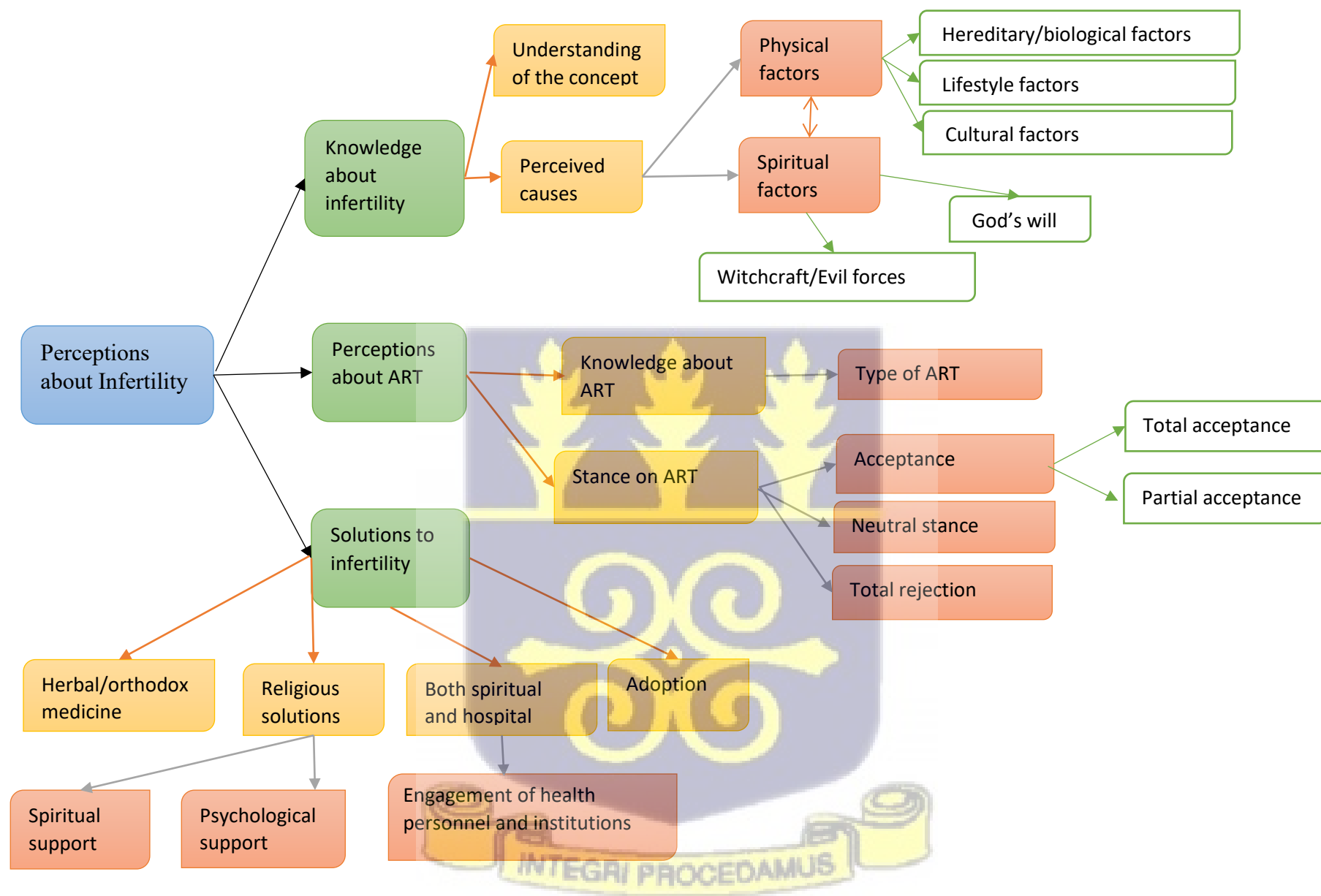


Figure 6.1: Thematic Network from the IDI with Religious Leaders

6.2 Knowledge about Infertility

To gauge their knowledge regarding infertility, religious leaders were asked about their understanding of infertility and the factors they believed contributed to it. Figure 6.2 illustrates the thematic outcomes that emerged from these discussions.

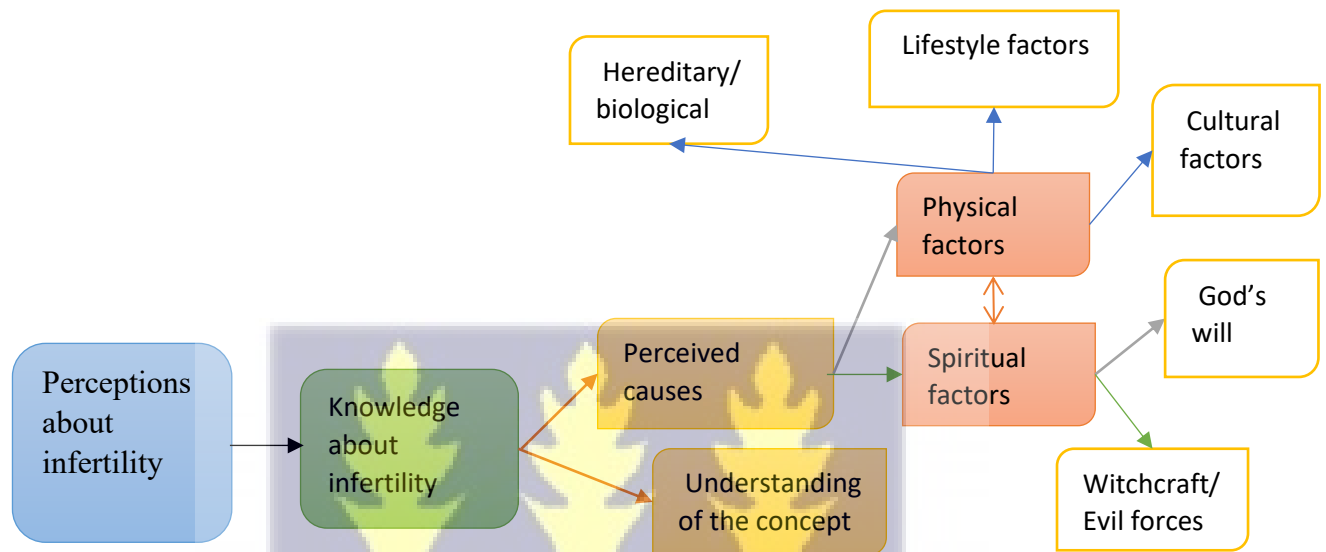


Figure 6.2: The Sub-themes Under Knowledge of Infertility

6.2.1 Understanding of Infertility

Religious leaders were asked about their comprehension of infertility and its underlying causes. Multiple attempts were made to articulate the concept of infertility, with most of the provided definitions remaining rather vague. The definition that came closest to the medical explanation lacked specific details or a defined timeframe. In general, infertility was broadly perceived as the inability to conceive and give birth, and it was acknowledged that this issue could affect both men and women. Some religious leaders also associated their understanding or definition of infertility with causes or factors such as low sperm count or biological issues.

“It is biologically when a woman cannot conceive or when the man cannot produce enough sperms to fertilize the woman’s egg. That’s how I will term infertility” (R17, Male Religious Leader).

“Someone has reached the childbearing age but cannot reproduce. They are of three different categories. One of them is a young lady who is not well matured, but aborts whenever she gets pregnant, sometimes with the excuse of her education. This can affect your womb. Mmmhmm. Another one is “Owede” (extreme pain experienced before and after menstrual period). That could also delay fertility, then the other is spiritual (R16, Male Religious Leader).

Two religious leaders exhibited a more precise and thorough approach in their articulation of what infertility entails.

“Okay. So, I said, it is when either a man or a woman is faced with a childbearing challenge. In addition, the man or the woman is constantly engaged in sexual intercourse with the intention to have a child, but there is no outcome of pregnancy. This couple is also not using any form of contraception to deliberately delay pregnancy” (R1, Male Religious Leader).

“Ooh so my understanding of infertility is either a man or woman who is making all the effort to have a child through so many ways but can’t have a child” (R13, Male Religious Leader).

The depth of understanding reflected in the quotations is noteworthy and serves as a valuable foundation for counseling sessions. It is particularly praiseworthy that some religious leaders recognise the significance of contraception and the efforts undertaken by individuals, aligning with the World Health Organization's definition of infertility concerning both men and women and the context of conception without contraception.

6.2.2 Perceived Causes of Infertility

Religious leaders identified several causes of infertility, which can be broadly categorised into physical and spiritual factors. In terms of physical causes, these can be further classified into

various sub-categories; lifestyle, hereditary/biological and cultural. The spiritual factors were either human or God. Although they believe in the psychological causes of infertility, there is also a connection to spiritual causes. This is likely due to the Ghanaian context, where both religion and culture are highly valued.

6.2.2.1 Physical Causes

Among the 17 religious leaders interviewed, 15 attributed infertility to physical causes, including lifestyle, biological factors, or cultural influences.

Lifestyle factors, such as repeated abortions, were frequently mentioned as a potential cause of infertility. Interestingly, the explanation for abortion as a cause of infertility varied. Some believed that having multiple abortions or not following proper medical procedures during the abortion process could lead to infertility. Others held the view that any form of abortion, regardless of the method used, could reduce the number of children a person is destined to have. Additional lifestyle factors contributing to infertility included smoking, excessive alcohol consumption, rigorous exercise, prolonged periods of sitting for men, and promiscuity. Stress was also linked to infertility, with respondents suggesting that it could disrupt the functioning of the reproductive system, including the menstrual cycle.

“Then they would abort it using herbs and concoctions. Sometimes not once, but multiple times. Some people are destined to have one or two children, so if you don’t exercise patience and jeopardize your chances by aborting all, then that is the end” (R8, Female Religious Leader).

“Some of the causes could come from the type of work one does, or maybe have an infection from a disease or sickness. An example of jobs which can cause fertility challenges is those jobs which are mostly around fire or use fire all the time. Like those who cook for commercial consumption among others. The intensity of the heat from the fire could affect his or her reproductive system. The heat is likely to compromise with the quality of eggs or semen

produced. So, a couple may be involved in sexual intercourse alright, all conditions required for pregnancy have been satisfied, yet pregnancy does not occur” (R1, Male Religious leader).

Some respondents believed that infertility could be hereditary, passed from parents to their children, and that it might be a family issue with potential spiritual implications. One religious leader attributed infertility to some couples being genetically incompatible.

“Research has made us aware that it is due to so many causes, it could be hereditary, and some families are not fruitful...”, (R2, Female Religious leader).

Biological factors were also considered as causes of infertility, including low quality of eggs, hormonal imbalances, the presence of fibroids, menstrual issues, and reduced sperm quality or sperm count.

“Sometimes the men could have low sperm count and cannot make a woman pregnant. So, in this case the fault is not with the woman, but the man. In some instances, this “Owede” (extreme pain during and after menstruation) could be a challenge that causes fibroid in the womb of women and can impede conception...” (R8, Female Religious leader).

Cultural factors were identified. These include co-habitation without proper marriage and delayed marriage or childbirth, often due to pursuing professional or educational goals.

“Maybe some traditional rites have to be performed for you, but it has not been done. This can cause fertility delay. You have to go to your traditional home for such rites to be performed and be prayed for, so that God will grant you a child” (R16, Male Religious leader).

6.2.2.2 Spiritual Causes

The spiritual dimension of infertility is significant and recurrent throughout this chapter. In all seventeen in-depth interviews, various spiritual dimensions and solutions were explored. Spiritual causes of infertility included the belief that one could be cursed by another person (witchcraft or evil forces) or by God, with reference to biblical examples. Some also saw

infertility as a test of faith sent by God. Infertility was often attributed to spiritual factors when medical practitioners were unable to identify a physical cause.

“So sometimes someone may have lost her womb spiritually without knowing. You would sometimes wonder that newly wedded couples after marriage are expected to have children, but the children will not come. It could be that a spell was cast on the wedding cake, so many a time when you are going to get married you should be steadfast in prayer” (R5, Female Religious Leader).

“Oh, witches can remove somebody’s womb spiritually, and can lead to infertility. It is one of the major spiritual battles we engage in that many people are not aware of. So, if someone denies the fact that there is witchcraft, it is simply because God has not opened the eyes of the individual to see” (R15, Male Religious Leader).

“I will always cite Sarah in the bible that if you have the faith pray, because Abraham and Sarah stayed many years without a child, but they were praying and having faith in God and God gave them a child. So, I believe that sometimes, as Christians, God tests our faith, whether you will challenge yourself or you will challenge Him” (R4, Female Religious Leader).

If man cannot wait on God for His plan to come into play, the devil tries to take advantage. Majority of the infertility cases are not of God but of the devil. Because God does not lie, and when He said that there will come a time when man will leave his parents’ home and cling to his wife and become one. Children are blessings of the womb, so God never denied man of a child, except for Saul’s daughter who made mockery of David. So as children of God there is nothing like that, no matter how long it takes, God will grant you a child (R11, Male Religious Leader).

The identified causes of infertility were categorised into physical and spiritual domains, yet it appears that physical explanations often came with an underlying spiritual rationale, as exemplified by the belief in aborting babies that were spiritually bestowed. Religious leaders

believed that witches or other supernatural forces exist but only those with a sense of spiritual insight understand and accept that witches do exist. This observation that witches/witchcraft exist or operate is consistent with the quantitative findings, where 40 percent of respondents view infertility as having a spiritual origin. Moreover, no one is infertile in the sight of God, and he will give you a child when the time is right. Additionally, there is a strong belief in the potential of religious intervention to assist with infertility issues. Notably, the explanations provided by religious leaders predominantly attributed infertility to female factors, reinforcing the gendered narrative within the discourse on infertility, where the societal tendency to blame women is evident among the majority of respondents.

6.3 Perception about Assistive Reproductive Technology (ART)

Religious leaders contributed to a discussion focused on Assisted Reproductive Technologies (ART). This conversation resulted in two primary themes: their understanding of ART and their stance on it. Figure 6.3 displays the key themes that surfaced from these discussions.

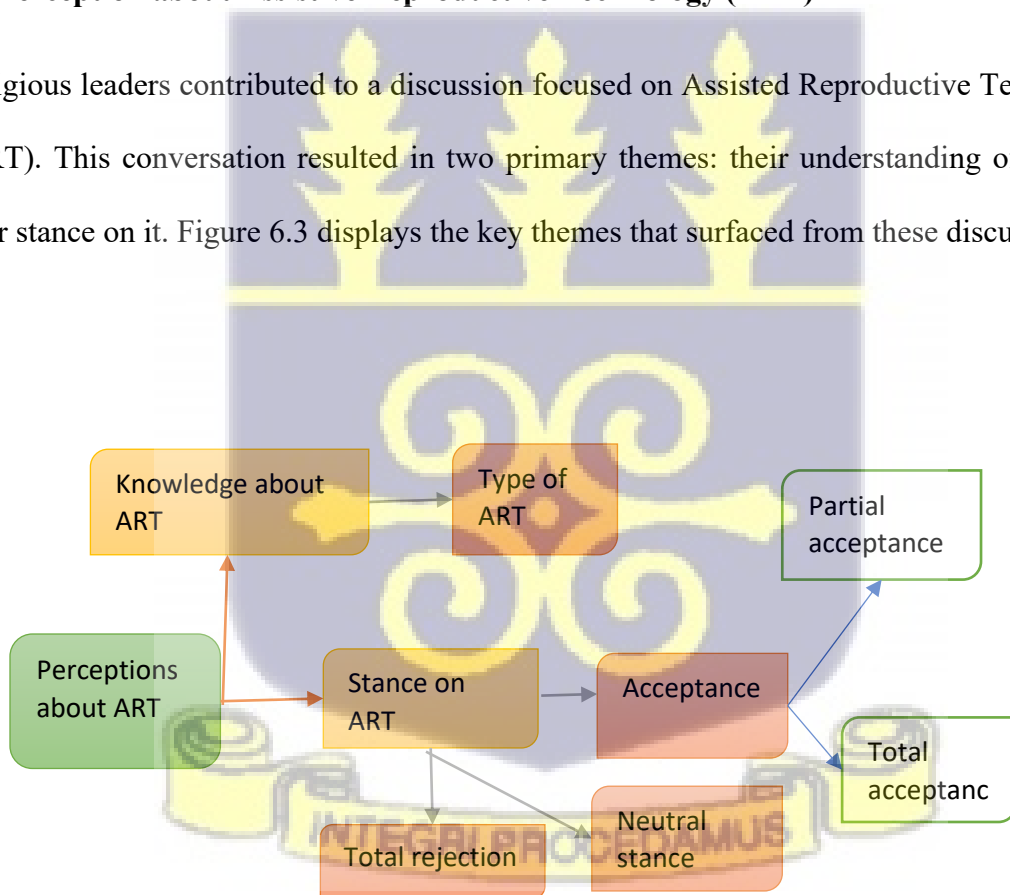


Figure 6.3: Thematic Network of Perception about Assistive Reproductive Technology

6.3.1 Knowledge of ART

Most of the religious leaders had limited familiarity with Assisted Reproductive Technology (ART). The most recognised form of ART is artificial insemination through In Vitro Fertilisation (IVF). Many respondents lacked a detailed understanding of ART, and when provided with a comprehensive explanation of its intricacies, they exhibited hesitancy in making a definitive decision to either accept or reject the method. Nonetheless, they expressed a positive reception to the idea that technology and medical science could play a remarkable role in addressing fertility issues.

“Oh well, I have not witnessed such a thing before, and I have not heard that someone used that method to have a child. So, all in all, we always wait on God, when He gives to you fine, if it doesn't come too, we continue to hope for it to come” (R15, Male Religious Leader).

“It is a good technology; we don't reject it. I have not come across any doctrine in my religion which will reject it. Because it is trying to provide solution to a problem... These technologies are not quite new; they have been in existence because we have learnt about all of them including cloning” (R1, Male Religious Leader).

6.3.2 Stance on ART

Religious leaders' attitudes toward ART can be categorised into three primary themes: (1) outright rejection, (2) acceptance and (3) a middle ground of hesitancy. While four religious leaders firmly rejected any form of ART, eight others embraced some aspects of ART (mostly opposed to donor sperm/eggs), with five leaders taking a neutral position, allowing individuals to decide for themselves.

The rejection of Assisted Reproductive Technology (ART) was rooted in various factors. Initially, certain religious authorities opposed any form of ART, arguing that it challenged the divine authority of God. They perceived it as an endeavour by humans to emulate God, asserting that humans lacked the capacity to create other humans. They maintained that the

natural process of reproduction, as ordained by God, should remain untouched, and any interference in this process was considered a sinful act.

“Well, the church has taken a stance on that and that is my position as well. Errm, you know children are gifts that God alone endows humanity or couples with, so it must not be interfered with. The process must not be interfered with. If you know what goes into us as human beings, think of it that, this small clot will grow into the embryo and eventually [a] human” (R10, Male Religious Leader).

Some religious leaders partially accepted ART because of objections revolving around the concept of insemination with sperms that did not belong to the spouse, equating it to adultery. This perspective led to the rejection of ART by religious leaders who upheld this viewpoint. However, it is worth noting that some religious leaders who did accept ART shifted the responsibility onto the individuals to make their own choices, suggesting that if God intended for ART to be part of their path, it would transpire.

In addition, an Islamic leader raised concerns about lineage, emphasising the importance of tracing a child's ancestry through the father's line. As a result of this consideration, he opposed sperm donation, but was amenable to the idea of egg donation.

“So yes, there are some methods among these that Islam will accept, and others that Islam won't accept. For instance, Islamic laws say that every child should be identified through the patrilineal lineage. So, if a woman just goes in for a donated sperm to have a child, Islam won't accept this because the father of that child is unknown”. (R13, Male Religious Leader).

On the contrary, there were those who embraced ART, citing that their religious doctrines did not prohibit it. However, they expressed reservations regarding the financial challenges and intricate legal matters associated with these technologies. In the eyes of many, adoption emerged as a preferable approach for addressing infertility issues. Adoption offered a comprehensive solution, addressing the infertility problem for the couple, providing a home

and care for the child, and potentially paving the way for the couple to have a child of their own. In the Ghanaian setting, there is always the informal type of adoption where children of other siblings or relatives can be given out to stay with especially the newly wedded or a couple. They usually treat the child like their own child. Formal adoption is something the Ghanaian society is yet to fully embrace.

“I have never been against it. I have been doing a lot of reading and there has not been a time that I have spoken against such practices. And so long as the individual facing the challenge has had the understanding of the method and wants to consider it, there is nothing to hold against him or her. And I have not come across a scripture that is against such methods; hence I have nothing against it”. (R14, Male Religious Leader).

“It is a good technology; we don’t reject it. I have not come across any doctrine in my religion which will reject it. Because it is trying to provide solution to a problem. I spoke about Christian Ethics earlier; it educates us on all these issues. These technologies are not quite new; they have been in existence because we have learnt about all of them including cloning” (R1, Male Religious Leader).

“But these kinds of technology have to do with money so if you can’t afford it, you can’t have treatment. So, I will entreat the government to reconsider the cost involved, so it could be accessible to all”. (R8, Female Religious Leader).

The final group, who remained impartial regarding their stance on ART, opted to leave the decision in the hands of the individual. They refrained from endorsing the technology, but also abstained from dissuading anyone from pursuing it. Their approach encouraged individuals to seek divine guidance and support from God before proceeding with ART. This perspective was particularly significant for certain religious leaders who believed that without God's intervention, IVF might be unsuccessful, and ART could lead to various complications.

“The only thing is to advise and tell the person, how the religion is, and how it supports certain things and does not support some as well. So that’s it” (R13, Male Religious Leader).

“Oh, we don’t have a stance on this, because the final decision lies with the individual. If as an individual you would want to employ that means to give birth, we cannot prevent you!” (R14, Male Religious Leader).

Additionally, some religious leaders within this group held the view that individuals resorting to such methods might be displaying impatience with God. They emphasised the importance of having faith and believing that God is the ultimate source and bestower of life. They contended that God has a predetermined timing for childbirth, and it might not be the right time for an individual to have a child.

“As I said, what you desire I can’t force you against it. Someone may not be able to wait on God, so he or she would go for this method. So, on your part; you have to support him or her with prayer so that the will of God comes to pass.” (R5, Female Religious Leader).

6.4 Solutions to Infertility

Religious leaders delineated three primary approaches to addressing infertility: medicinal solutions (including both herbal and conventional medicine), spiritual remedies, and adoption (as shown in Figure 6.3). Among these, adoption stood out as the most frequently mentioned and strongly recommended method by religious leaders. The religious leaders held the belief that these solutions could work in harmony, complementing each other to effectively resolve the issue of infertility. Moreover, they recognised their role in contributing to the resolution of infertility-related challenges. Figure 6.3 illustrates the sub-themes within the broader theme of "solution".

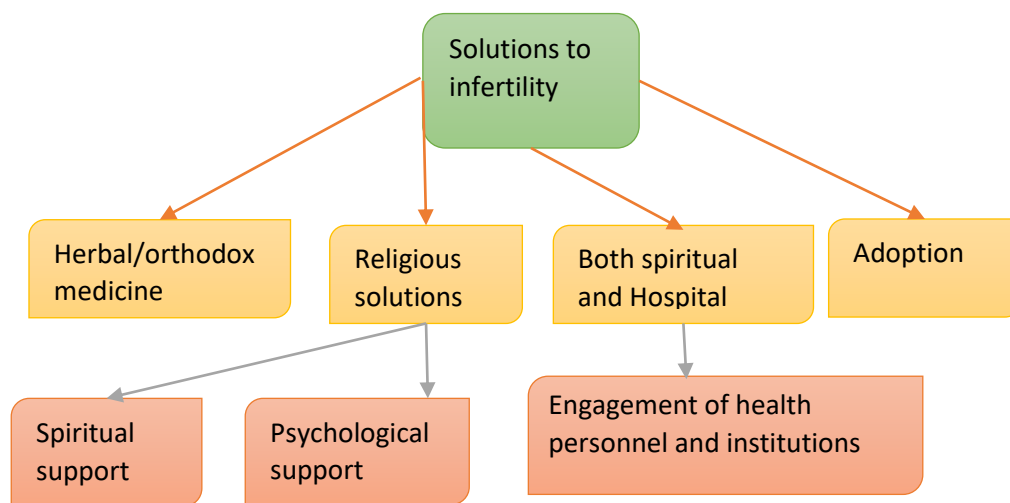


Figure 6.4: Thematic Network of Solution to Infertility

6.4.1 Religious Solutions

Religious leaders recognise that children are bestowed by God or Allah, acknowledging that the ultimate solution lies in divine providence. They firmly believe that God grants the gift of children according to His own timing, and, in their perspective, "there is none barren" in the eyes of God. Religion provides solutions through psychological/emotional support, spiritual support through practice of religious rituals and engagement of health personnel/institutions.

"The basic treatment for infertility is God, because He is the one who gives children. But God has also provided knowledge for us through food and medicine, which are able to correct some of these defects. And also psychologically, if the body is not relaxed, it cannot reproduce. So, one has to relax the brain and the body." (R2, Female Religious Leader).

"And the Qur'an does not state the treatment of such condition apart from reassurance, direction and maybe prayer if the case is beyond medical reach. Especially in the case of these spiritual beings, you only have to pray to God for Him to intervene. Apart from that, you do not have control over the situation as a person." (R3, Male Religious Leader).

“The book of Samuel, when you read 1st Samuel and the first chapter the story is there. Hannah was infertile and the only answer to infertility is..., of course we have several scientific solutions and technology okay, thanks to God, but all these solutions point to one direction and that is God. Whether we like it or not, sometimes you would go to the hospital and the doctor would do his best, but the solution is not found. So, then you get to the point where it is not human solution that would help then you turn to God. So, Hannah was barren, Sarah was barren and the bible says that even Sarah at her old age delivered a son. And the same applies to Elizabeth, the wife of Zechariah the man of God; she was barren for some time. When God wanted to give Mary a son, decided to go some days or months ahead to give Elizabeth a son, ahaa”. (R17, Male Religious Leader).

6.4.1.2 Spiritual Support

However, when it comes to the spiritual causes of infertility, there is a belief that the ultimate solution lies in divine intervention. Various religious practices, such as reading sacred texts, prayer, fasting, and performing acts of kindness, are considered essential rituals. Among both Muslims and Christians, acts like “zakat” (charitable giving) and being a virtuous individual are believed to play a significant role in solving infertility issues, as these actions are thought to open hearts and lead to answered prayers.

“It is not everybody who does that, so when a direction like this comes to me, I would have to pray over the money and show you whom to give the money to. So, one of such directions, the person was asked not to give the money to the first person he sees on the road, but the second. So, he did as he had been directed and had the blessing of God. Because Christ said that, the good you do to the least of them, you do unto me. So, you are at liberty to show kindness to people in need. It is in recent times that the world is full of evil; such that showing kindness to someone would rather attract bad luck.” (R15, Male Religious Leader).

However, it is worth noting that there are conflicting views regarding specific rituals. For instance, one religious leader suggested a practice of "birthing the body" or cleansing the

woman's belly with holy water, but this was considered inappropriate and malevolent by another religious leader.

“If the person is determined to have a child, [a] solution will be provided then. Because my husband will pray and ask for direction and guidance per the nature of the problem. For instance, someone may be required to have a spiritual bath as a solution, someone too would have her belly washed as a solution. Someone too may have an evil spirit following her, so that has to be gotten rid of.” (R7, Female Religious Leader).

“We don't have any additional church rituals apart from prayer and counselling that I have mentioned. Perhaps the churches that I call mushroom churches would want to engage in needless acts like bathing at the beach. Yes, that is not in our domain, it is ungodly as well.” (R1, Male Religious Leader).

Prayer was recommended through two distinct avenues: personal prayer and corporate prayer. Personal prayer is expected to be a consistent and ongoing practice, while corporate prayer, such as prayer services, tends to be more intense and fervent. These intense prayer services often involve deliverance sessions, which are considered a crucial element in addressing the spiritual aspects of infertility.

“So, if you are consistent in prayer, God will give you a child in due course”. (R15, Male Religious Leader).

“But God didn't create anyone barren, except for Michal who mocked her husband, so God shut her womb. But God created everyone to be fruitful. So, if someone is in need of a child, there has to be constant prayer.” (R5, Female Religious Leader).

Some of the prayer meetings are general services or personal ones held between the person/couple and the religious leader. The duration of the prayer depends on the type of meeting and religious leader.

“But you see we are mystifying it; in other words, we are invoking God’s presence to take control and we do that with a lot of intensity. The duration is not necessarily long, I can do that prayer for 10 or 15 minutes, errm, maximum of 30 minutes.” (R10, Male Religious Leader).

“... we will recommend that couples come for prayers every Sunday. But in our church, we have set Tuesday aside for prayers; we call it prayer warfare. During prayer warfare, several prayer topics are raised and we pray towards that, and ask God for His intervention.” (R1, Male Religious Leader).

Religious leaders emphasised their commitment to supporting members who grapple with infertility by offering prayer as a primary means of assistance. Some were of the view that most people do not follow the religious ritual prescribed so they (religious leaders) will have to do that for them.

“When you direct someone to wake up at 12 midnight to pray do you think he or she would wake up and pray? He or she won’t, so we have intercessors who pray on their behalf.” (R5, Female Religious Leader).

In addition to prayer, there are other rituals and practices, including the consumption of holy water or communion, financial contributions, and the use of anointing oil.

“In terms of direction, the spirit will tell us exactly what to do, for instance there may be a direction that will require part of the member’s money as well as part of our father’s⁴ money. Another direction could come where the member’s money is the only thing required. And when this is done, everything becomes a success.” (R7, Female Religious Leader).

In traditionalist practices, specific requirements typically include alcohol, a bottle of Schnapp, and monetary offerings for libation and various ritualistic purposes. Additionally, some

⁴ Father’s money as referred to in the quote is the Respondent’s leader, who is a male and oversees spiritual activities and rituals.

traditionalists may provide herbal remedies to cleanse the womb. It is noteworthy that only traditionalists and spiritualists incorporate herbal treatments into their repertoire, alongside their other religious rituals.

“So, if they say they have not had abortion before, then I would direct them to get an alcoholic drink and attach an amount of money to it. Then, I would ask you to go and make your request. After that, I would perform libation on your behalf with the alcoholic drink you brought!”
(R16, Male Religious Leader).

6.4.1.3 Psychological Support

Religion instills hope and fortifies an individual's faith in God. Furthermore, religious leaders stress the importance of providing counselling, psychological support, and emotional assistance to individuals dealing with infertility, recognising the substantial stress that this condition can impose.

“Emotional, psychological support. When they come, we encourage them, we try to make them understand that God has a way of taking care of everybody and you know, childbearing or pregnancy you know, is a gift that God alone gives to couples. So, we try to encourage them, we try to counsel them and all of these things you know has a potential to work on their psyche, so they don't get overwhelmed and it can be tough when a woman is married and for some time she is expecting and she is not conceiving. Sometimes she conceives and then she loses it errm. The pregnancy doesn't stay, they get worried, so we have to try to encourage them. If we don't do that, they tend to become superstitious because they are aware of witchcraft and even on the radio a pastor was saying that there are witches, you know and the pastors have been saying that if you don't pray hard and somebody, a witch in your family will eat your children and they believe it.” (R10, Male Religious Leader).

To bolster their guidance and support, religious leaders draw on religious texts and cite examples of biblical figures such as Sarah and Elizabeth, who faced infertility. By sharing these

stories and offering prayers, they aim to help couples cope with their situation and find solace in their faith.

“And these are things, they are not hearsay, it’s all over the radios and televisions and so-called pastors do that and so, when our people come like this, we try to encourage them, we try to debunk some of these erroneous impressions and superstitious beliefs and then we try to let them understand that God is in control, He has a time for doing everything, we cite biblical passages that He did it for Sarah, Hannah, and what have you, Elizabeth. Errm we cite even examples of members of the community whose childbearing delayed and eventually they were blessed, so we do all of that to encourage them and from time to time they come and see us. And I am telling you, that this is a testimony that I will share to the glory of God that it does help.” (R10, Male Religious Leader).

All 17 religious leaders acknowledged that their members sometimes resort to seeking assistance from various sources, moving from place to place in search of help. They consider this practice unacceptable, even when these members remain within their primary congregation or religious community. This behaviour suggests a lack of faith in God or a shaky foundation of faith.

Some members even traverse religious boundaries, transitioning from one faith tradition to another, such as moving from Islam to Christianity or engaging in fetish practices, and vice versa. While religious leaders may not be able to prevent such actions, they do advise their members to exercise caution and discernment when choosing where to seek assistance.

“Errm, no, but our focus is on the individual that has the challenge so that he or she could be happy. Because the individual’s desire is to have a child, so if he or she decides to use this means to get it and be happy we have to support. We have nothing against it, but what we guard against and we advise them to desist from is going to the shrine. Because if care is not taken,

the situation will be worsened when they visit such places. But getting solution in the religious faith, we have nothing against it” (R14, Male Religious Leader).

6.4.2 Herbal /Orthodox Medicine

About seven of the religious leaders believed that persons who sought help from them should also seek medical care. But views were diverse in the type of treatment. Three recommended herbal treatment, while others recommended orthodox medicine. None of the religious leaders interviewed opposed medical treatment (ART excluded).

“The best solution is to go to the hospital, and if they check and they cannot help then we will also address it from the spiritual aspect.” (Religious leader, Male Islamic religion (R12, Male Religious Leader).

Ahh okay, herbal medicine could be used in situations where a woman has given birth but has taken so long a time to conceive again. So, some herbs could be recommended for to take and become fertile again.” (R5, Female Religious Leader).

“So, these pose threats to fertility, but if you are able to seek medical treatment you could be given medication to treat it. Sometimes you need to check your diet and resort to foods that will boost your system for pregnancy to occur.” (R1, Male Religious Leader).

6.4.3 Both Spiritual and Hospital

All religious leaders maintain a strong belief in the supremacy of God and religion in resolving all issues, not limited to infertility. While they acknowledge the role of medicine and medical practitioners, they assert that prayer is a fundamental component, without which interventions may be less effective.

“Sometimes the medicine that you are drinking has been rendered non-effective spiritually so, you may be drinking it for nothing. So, the solution has to be spiritual.” (R5, Female Religious Leader).

Some religious leaders combined both medical treatment and spiritual in solving or managing cases brought to them.

“So, if after consultation, I see that it is spiritual it will be dealt with as such. After that, I will be directed in the spirit to know the kind of herbs to prepare for the person. So, after drinking the herbs, God will grant healing. Sometimes drinking of the holy water alone is able to cleanse the system and remove all blockages. So, after this, conception can take place during sexual intercourse” (R15, Male Religious Leader).

6.4.3.1 Engagement of Medical Personnel/Institutions

Across various faiths, it is a shared belief that individuals dealing with infertility should seek guidance from healthcare professionals. Fourteen religious leaders not only recommended medical consultations, but also actively followed up with their congregants' healthcare visits. While some preferred seeking medical treatment before spiritual treatment/solutions, others prescribed spiritual treatment before medical provision.

“Yes, there is solution, as a Christian the solution is prayer, then after prayer you work on your body. Do you understand me?” (R6, Female Religious Leader).

“The best solution is to go to the hospital, and if they check and they cannot help then we will also address it from the spiritual aspect”. (R13, Male Religious Leader).

They also stressed the importance of both the man and the woman seeking medical help, indicating that the problem might be from any of them.

“There is a solution, if you see the doctor. When it comes to the problem, the couple have to seek medical assistance. But most often the blame is put on the women. So, when seeking for medical attention there is the need for both male and female to go check.” (R14, Male Religious Leader).

“Then you will be directed on what to do. Because sometimes the men feel reluctant to go to the hospital, so you have to pray with them first and then you recommend the hospital later.

This would maintain peace between the couple, sometimes there could be minor issues preventing pregnancy and so when you pray, you are directed by God to take the next step.”

(R5, Female Religious Leader).

6.4.4 Adoption

The practice of adoption was strongly encouraged by eight religious leaders as a means of addressing infertility, with the belief that by caring for other people's children, one may receive the gift of their own child from God.

“So, when you adopt an orphan and you take care of him or her, the blessing you get according to the Qur'an it cannot be measured.” (R9, Male Religious Leader).

6.5 Discussion

This chapter aimed to investigate the knowledge and perspectives of religious leaders regarding infertility. The narratives delved into their comprehension of the causes of infertility, their perceptions of Assisted Reproductive Technology, and their proposed solutions to infertility. The findings revealed that religious leaders perceive themselves as integral to resolving the challenges associated with infertility. However, there are limited studies examining the perceptions and knowledge of religious leaders in this regard (Jimoh et al., 2023).

Past research has underscored the significant role of religious leaders as opinion influencers (Tomkins et al., 2015; Barro et al., 2021). They wield substantial influence within communities and can serve as key conduits for disseminating information about fertility behaviours, contraception usage, and family planning. Studies conducted in African countries have demonstrated that religious leaders possess the ability to either impede or facilitate the adoption of behaviours favouring contraceptive use and decisions related to family size, among other aspects (Kim, 2011; Babalola et al., 2015; Frohwirth, Coleman and Moore, 2018; Barro et al., 2021).

Their understanding of infertility may lack adequacy, as demonstrated by their general comprehension of what infertility really is and its underlying causes. This understanding diverges from the World Health Organization's definition, which specifies infertility as the inability to achieve conception after twelve months of unprotected sexual intercourse (Vander Borgh and Wyns, 2018; Oluwole et al., 2021). Notably, their grasp of the concept lacks details regarding the duration and the role of contraceptive use, because infertility takes into account how long a couple have been having sex, using no family planning but without achieving conception, which was missing in their understanding. This observation aligns with the findings of other studies (Adashi et al., 2000; Chimatata and Malimba, 2016; Okafor, Joe-Ikechebelu and Ikechebelu, 2017; Atijosan, Adeyeye and Ogungbayi, 2019; Iwelumor et al., 2019), emphasising a widespread lack of understanding regarding infertility.

In a separate qualitative study conducted in northern Ghana, respondents described infertility as the inability of a couple or woman to bear children (Tabong and Adongo, 2013), a sentiment echoed in a Pakistani study, where less than half of the participants correctly defined infertility in a qualitative study in the Sahel Region (Ali et al., 2011). Interestingly, this contrasts a survey in Nigeria where 67 percent of 388 male respondents from selected communities demonstrated good knowledge about infertility (in relation to duration and absence of contraception), potentially attributable to variations in context and study approaches (Oluwole et al., 2021).

It came as no surprise that religious leaders were significantly concerned about the spiritual causes of infertility. This aligns with findings from a study in Nigeria (Oluwole et al., 2021), where most respondents believed that witches could be a cause of infertility. The belief in supernatural forces is not exclusive to Africa, as indicated by participants in a Pakistani study (Amarat et al., 2019) that expressed a similar belief in evil or supernatural forces being responsible for infertility. This inclination might be influenced by the highly religious nature of the environment.

In another study conducted in Ghana, which explored the social understanding of infertility, respondents perceived infertility as a misfortune (Tabong and Adongo, 2013). A study in Accra involving herbalists also revealed a belief that infertility could be caused by spiritual factors (Ofosu-Budu and Hänninen, 2022). This belief strongly resonates in the solutions proposed by the religious leaders in this study, emphasising the notion that God is the source of life across various religions. This belief is evident in the explanations given by respondents about the other physical causes of infertility. Furthermore, this perspective extends beyond attributing causes to supernatural entities. It also encompasses the labelling of infertile individuals or their parents, especially by others, as witches. This assertion finds support in other studies conducted in Ghana (Tabong and Adongo, 2013a; Polis et al., 2020).

Another significant factor identified by respondents was abortions, including both safe and unsafe methods. This observation finds support in various studies (Iwelumor et al., 2019; Polis et al., 2020). Additionally, another qualitative study conducted in rural Malawi revealed abortion and multiple sexual partners as recognised causes of infertility (Bornstein et al., 2020). These findings are also due to documented literature on the medical complications from especially unsafe procedures as well as STIs from multiple sexual partnerships resulting in infertility (Pike, 2020; Abebe et al., 2020). However, this link between infertility and abortion might also result in the stigmatization of women with delayed birth or infertility issues, potentially leading them to be perceived as having undergone abortions in the past. This notion is substantiated by a qualitative study in Kumasi, where respondents accused infertile women of having undergone abortions in the past (Ofosu-Budu and Hänninen, 2021).

Surprisingly, the concept of abortion impacting the predetermined number of children one is destined to have was also found in northern Ghana (Tabong and Adongo, 2013), where respondents expressed the belief that women have a fixed number of children in their womb. It is important to note that these explanations lack scientific or medical backing. Another explanation, not rooted in medical reasoning, but rather in religion, is viewing abortion as a sin

that requires redemption from God. This aligns with respondents' belief that infertility could be the will of God, suggesting that God has the power to both cause and resolve infertility in his own time.

Consistent with findings from Aba et al. (2021), lifestyle factors such as smoking and drinking were identified as potential causes of infertility. However, in contrast to this, other research indicated that participants did not hold the belief that lifestyle factors like smoking and drinking could lead to infertility. Notably, cultural factors, such as the non-performance of marriage rites, delayed marriage, or delayed childbirth, were considered as potential causes of infertility. Similar findings have been reported by Oluwole et al. (2021). Some religious leaders attributed infertility to late marriage and the diminishing quality of eggs as women age. This perspective may be influenced by the cultural significance placed on marriage, coupled with the increasing trend of delayed marriage, owing to modernisation and higher levels of education.

The solutions advocated by religious leaders as adoption, medicine, and religion are consistent with findings from other studies conducted in Ghana and The Gambia (Tabong and Adongo, 2013a; Ntiamoah et al., 2018; Dierickx et al., 2019; Hiadzi and Woodward, 2019; Esan et al., 2020; Hiadzi and Boafo, 2020). Couples often explore three primary avenues: spiritual, traditional, and medical practitioners, sometimes concurrently or sequentially (Roudsari, 2008; Donkor and Sandall, 2009b; Grunberg, Miner and Zelkowitz, 2022; Sefogah et al., 2023). Notably, in the study conducted in The Gambia, traditional healthcare emerged as a significant alternative source for respondents, which contrasts the preference for medical assistance observed in this study. Another study revealed that couples also sought guidance from spiritual churches and prayer camps when they perceived their fertility challenges as being spiritually rooted (Donkor, 2008).

Religious leaders recommended various rituals, with prayer emerging as the most frequently endorsed practice. The efficacy of prayer in alleviating the concerns of clients aligns with

findings from other studies (Read et al., 2014). Interestingly, some rituals, including bathing, which were considered inappropriate by certain religious leaders, were also recommended by herbalists in a Nigerian study, as cited in the study by Tabong and Adongo (2013a). This supports the outcomes of the present study. Additionally, it is noteworthy that religious leaders acknowledged the importance and complementary nature of medical assistance, whether herbal or orthodox. This is reflected in their referrals and collaborations with healthcare practitioners and institutions. Nevertheless, a careful consideration should be given to leaders who prescribe herbal concoctions to clients, necessitating a thorough evaluation of their safety.

The emphasised importance of counselling and emotional psychological support provided by religious leaders constitute a significant aspect of their role. Numerous studies have underscored the psychological impact of infertility, with evidence from a phenomenological study in Turkey, highlighting that women undergoing delayed fertility often experience anxiety and depression (Edirne et al., 2010). Similar psychological effects have been documented in studies conducted in Ghana (Donkor, 2008; Oti-Boadi and Oppong Asante, 2017; Sefogah et al., 2023), in Turkey (Höbek and Beji, 2021) and in 12 countries across four continents (Assaysh-Oberg et al., 2023).

In another qualitative study, women facing infertility expressed being under stress and attributed their situation to the will of God (Adashi et al., 2000; Donkor and Sandall, 2009b; Roudasari, Allan and Smith, 2013; Grunberg, Miner and Zelkowitz, 2022). The pronounced societal and familial pressure, particularly from in-laws, further intensifies the emotional burden on individuals dealing with infertility, as documented in other studies (Naab, Brown and Heidrich, 2013; Nachinab, Donkor and Naab, 2018; Batool Hasanpoor-Azghady et al., 2019; Höbek and Beji, 2021). Recognising the psychological toll, it is imperative to provide support to these individuals, especially considering the societal and familial expectations. Support for emotional well-being is also corroborated by a study in Ghana involving non-specialist physicians caring for individuals dealing with infertility. This study revealed that

patients experienced stress, creating an emotionally draining situation for physicians managing these cases (Cox, 2013). Religion, religious beliefs and practices tend to decrease the stress these patients go through as documented by studies (Hiadzi et al., 2021; Jurić Vukelić et al., 2021; Naab et al., 2021).

Religion significantly influences people's perspectives on assisted reproduction, with different religions responding to this treatment in diverse ways. The attitudes of religious leaders toward Assisted Reproductive Technology (ART) range from complete acceptance to outright rejection, with varying degrees of acceptance in between, as documented by Sallam and Sallam (2016). Notably, there is limited knowledge about ART among religious leaders in this study, in contrast to findings in Nigeria where religious leaders exhibited a high level of understanding of ART. However, in the same study, knowledge about In Vitro Fertilization (IVF) surpassed that of other ART methods, aligning with the outcomes of the current study and supported by findings from other studies, such as Orhue and Aziken (2008). The plausible explanation for this discrepancy in knowledge may be attributed to a preference for IVF as a method and its widespread utilisation in the region.

Religious leaders emerge as crucial intermediaries in the help-seeking process, functioning as what the integrated model terms "gatekeepers" who influence both problem recognition and service selection. Their dual role as spiritual counselors and medical referral sources positions them at critical junctures in the help-seeking pathway. Leaders who recommend combining prayer with medical treatment exemplify how religious authority can facilitate rather than hinder healthcare utilization. However, their influence also introduces potential delays in the help-seeking timeline, particularly when clients seek extensive religious consultation before medical care. This highlights the complex ways religious networks shape help-seeking trajectories, sometimes accelerating and sometimes redirecting the path to care.

Christian denominations, excluding Catholics, generally exhibited a liberal stance towards Assisted Reproductive Technology (ART) similar to what Deonandan (2020) found. In contrast, Catholic religious leaders unequivocally rejected ART, citing reasons aligned with existing literature (Jimoh et al., 2023). Their rejection is rooted in the belief in the sanctity of life and the imperative not to disrupt the natural process of childbearing. Consistent with findings by Chamsi-Pasha and Albar (2015), the Islamic Faith sanctions IVF only when the sperm or ovary is sourced from the couple.

The diversity in religious leaders' positions on ART exemplifies lived religion theory's core insight that religious practice involves continuous negotiation between formal doctrine and practical pastoral care. Leaders who accept certain ART procedures while rejecting others (particularly donor gametes) demonstrate how lived religion enables selective adaptation of religious teachings to contemporary challenges. This flexibility reflects the theory of lived religion's emphasis on religion as a dynamic, practised phenomenon rather than a static belief system.

Adoption emerged as a favoured option for many religious leaders, despite social and religious barriers prevailing in Ghana and various parts of the world (Mathe, Kasonia and Maliro, 2011; Bokaie et al., 2012; Nwaoga, 2013; Nachinab, Donkor and Naab, 2018; 2019). Religious leaders perceived adoption not only as a solution to infertility, but also as a service to God. Surprisingly, Islamic leaders in the study expressed support for adoption, contrary to some findings that deem adoption unacceptable in Islam as a result of the absence of legal adoption (Al-Bar and Chamsi-Pasha, 2015; Chamsi-Pasha and Albar, 2015). This contrasts a study where Islamic participants viewed adoption as unacceptable because husbands could potentially marry other wives (Nachinab, Donkor and Naab, 2018; 2019). It is essential to note that Islamic scriptures encourage the guardianship of orphans (Chamsi-Pasha and Albar, 2015). Furthermore, reluctance to adopt a child could be attributed to religious and cultural factors. In another study, some Christian respondents perceived adoption as an acknowledgment of

infertility, equating adopting a child with accepting that natural conception might not occur (Bokaie et al., 2012; Nachinab, Donkor and Naab, 2018; Ofosu-Budu and Hänninen, 2021).

While acknowledging the acceptance of Assisted Reproductive Technology (ART), participants emphasised that its success ultimately lies in God's hands, stressing the importance for clients to consult their religious leaders before pursuing ART. This perspective is echoed in other studies where patients sought spiritual guidance from their pastors when grappling with decisions regarding specific ART procedures (Hörbst, 2016; Deonandan, 2020). Some respondents attributed the outcomes of ART, whether successful or failure, to the will of God. Participants perceived technology as a manifestation of God's intervention, exemplified in the names given to children conceived through such methods, expressing gratitude and thanksgiving to their Creator.

6.6 Conclusion

Religious leaders play a crucial role in offering guidance to individuals grappling with challenging issues such as infertility. Those experiencing infertility or delayed fertility often turn to religious leaders and employ religious coping mechanisms to navigate the psychological and emotional stress associated with their condition. These individuals derive strength from these mechanisms, sometimes alongside other forms of treatment, if pursued.

Furthermore, there is a need to educate religious leaders about the nature of infertility and emphasise the importance of referring individuals to healthcare facilities. This education ensures that religious leaders are well-informed and can contribute positively to the overall well-being of individuals dealing with infertility.

CHAPTER SEVEN

HEALTHCARE WORKERS, RELIGION AND PRACTICE

7.1 Introduction

This segment delves into the involvement of obstetrics and gynecologists (OBGYN) in managing both their personal religious beliefs and those of their clients. Through in-depth interviews, three key themes surfaced: solutions offered or accepted, barriers to the solutions and faith integration. Figure 7.1 displays the thematic analysis of this chapter. Before delving into the subthemes, it is important to understand the background of clients that are seen by the OBGYN. This will be explored through the presentation or gender dynamics of the clients that present and the psychological state in which they present.



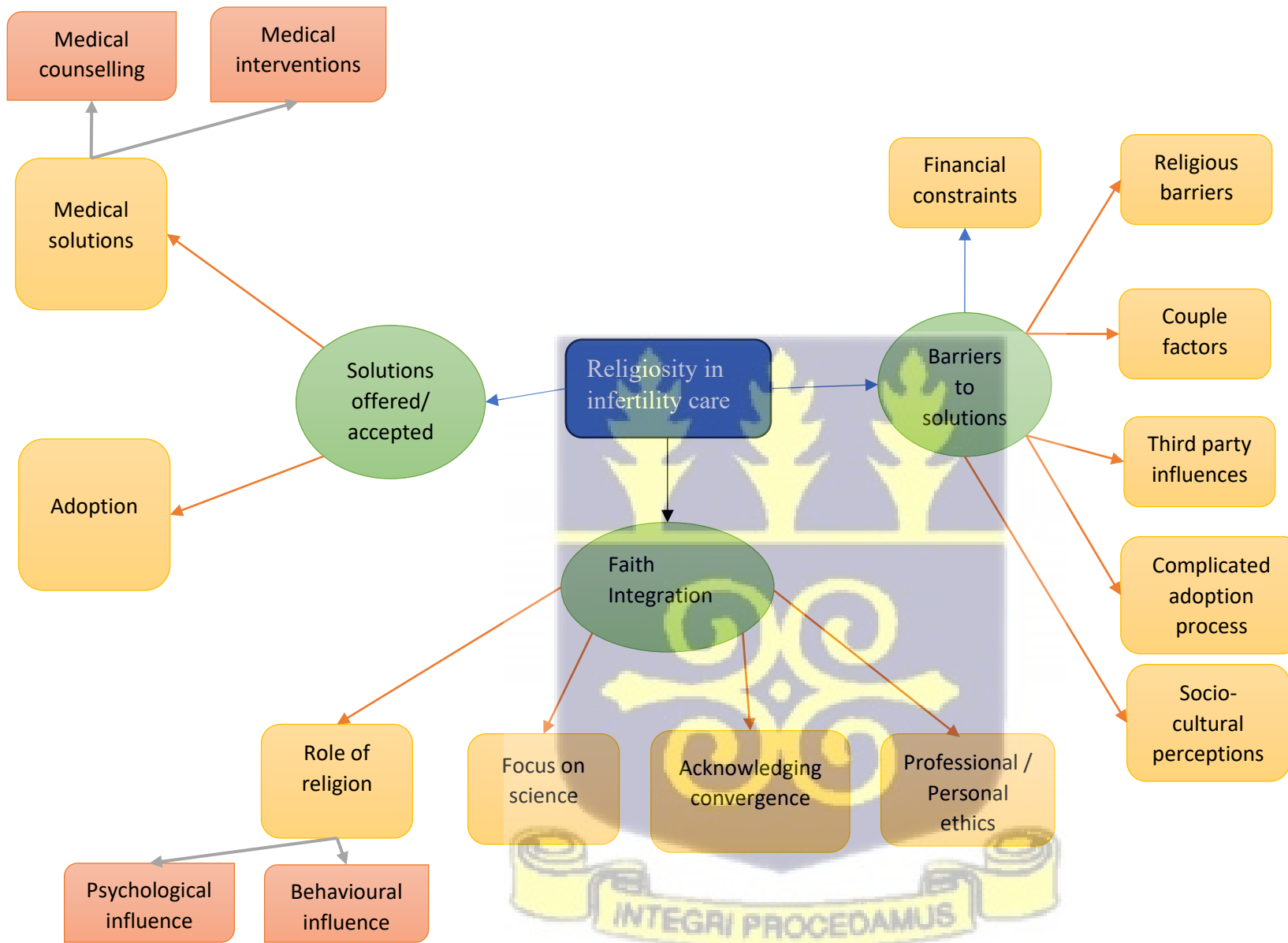


Figure 7.1: Thematic Network of Religiosity in the Care of Infertility

7.2 The Presentation and Psychological State of Client(s)

It was disclosed throughout the ten IDIs that women predominantly present themselves at the hospital; however, there are instances where couples present together for the first time. Some male partners come in upon request, but many decline to attend to the hospital or the doctors' consulting room. Owing to their affiliation with a tertiary health facility, clients often visit multiple institutions before eventually seeking assistance at Korle-Bu. Various reasons were cited, including cultural expectations of childbearing, which places significant pressure on women and compel them to seek solutions early.

Respondents see a mixture of primary and secondary infertility, with the latter usually having the challenge with a new partner. Supporting this are the quotations from two separate in-depth interviews.

“Traditionally we place childbirth on the shoulders of the woman, so they are the first to seek help. As in, if they are not getting pregnant, what is the problem? And they mostly come alone.” (R3 Female, OBGYN).

“But the women when they realise, because our society generally puts more pressure on the women. The women are quick to look around for solutions, especially those who are actually trying to conceive. Usually after a year, of not getting pregnant, they start to get worried. But most don't immediately come after a year, some have been co-habiting before they finally got married so it's not everybody who would come after the first year. After some time, I have been married two years, I have been married three years, I have been praying it's not coming, three years and then they would finally say let's seek medical help” (R8 Female OBGYN).

“Oh, it is the women who present it. It is the women who come first, men don't come. When they have been pushed to the wall before they would come, but men don't come. These days a few of them follow their wives, but they usually don't come. The usual thinking is that, when

they are able to ejaculate, they don't have a problem with that, but that is going down now."

(R1 Male, OBGYN).

Respondents outlined a diverse range of psychological states exhibited by clients, spanning from hopeful anticipation of resolving their situation to feelings of anxiety, depression, frustration, desperation, and occasionally, hopelessness. The following quotes from two respondents provide further insights on this:

"Well, some of them are quite frustrated because they have been to many places. I mean they have seen a number of herbalists; they have seen a number of doctors. So, they have done a lot of ups and downs and they see you as their last stop. So, the anxiety is great, they are quite anxious." (R1 Male, OBGYN).

"Oh, most of them come in very desperate, some are hopeless; some too are, let me say, very anxious to learn of where the problem is coming from. So, that's how I will describe them."

(R7 Male, OBGYN).

Psychologists are enlisted on a case-by-case basis, particularly when Assisted Reproductive Technology (ART) is involved. This helps to ensure that clients are psychologically prepared for potential setbacks and failures. Given the circumstances outlined, it would be natural to expect that all clients might seek the assistance of a psychologist. However, the choice of only clients going for IVF to do so might be due to the availability of clinical psychologists, suggesting that the number of professionals equipped to address these needs does not meet the demand.

7.3 Solutions Offered or Accepted

All respondents consistently refrain from declaring that it is impossible for a client to have a child. While it may be challenging for them to conceive or carry a baby, various alternatives exist for clients to explore. The recommendations provided are tailored to the outcomes of diverse investigations. These solutions range from basic guidance (medical counselling) on the

frequency and timing of sexual intercourse, treatment of infections, surgery, weight management, and to more advanced options like Assisted Reproductive Technology (ART) as outlined in figure 7.2. Apart from the medical counselling all respondents⁵ highlighted medical interventions such as IVF (10), and surrogacy (10), as crucial aspects of infertility solution offered; and adoption (8) is among the solutions presented to clients.

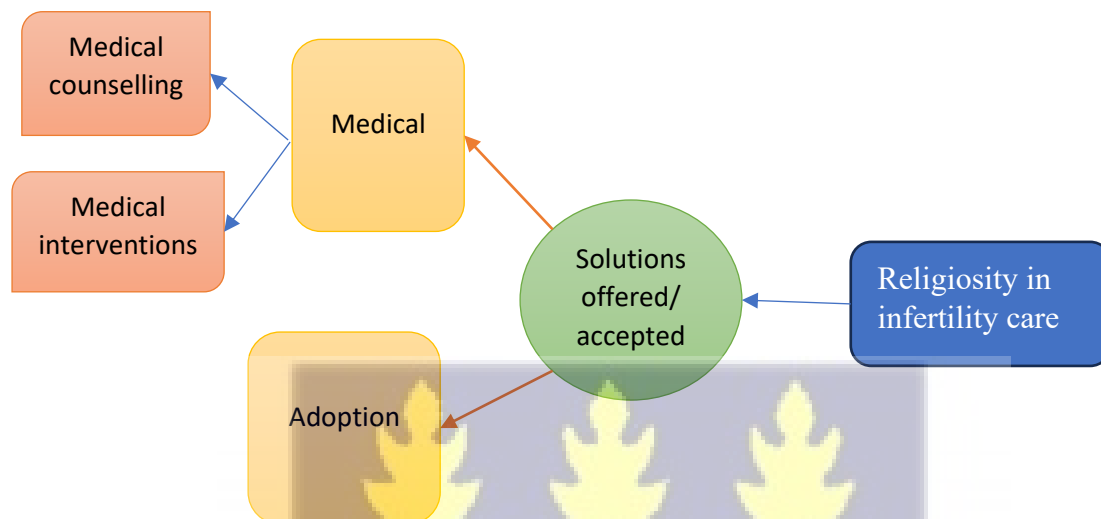


Figure 7.2: Sub-thematic Diagram of Solutions Offered/Accepted

The following quotes from respondents attest to the fact that they try whatever means possible to help the client with various options.

“I have never told anyone that this is the end; I always give them the option of IVF. Irrespective of the age, unless you come and you have passed fifty, sixty. Ahaa, but if you are still within the range, you are less than fifty years and you can afford the IVF I will always throw in that option. That you can always try that option, but I have never emphatically told anybody that I don’t think you can ever have a child, unless that patient doesn’t have a uterus.” (R7 Male, OBGYN).

⁵ Number of respondents that mentioned a particular solution in parenthesis.

“... But many couples don’t accept adoption as an option to their infertility problems. But even if they do, the process is not that straightforward. I mean, there are laid down guidelines for adoption for couples in this country, but the process is not that straightforward. And a lot of them would go and come back to tell you their frustration... yeah, so it is something that yes, some of them would consider, they would take the steps and few succeed. But I think it is something that the process should be streamlined, so that people can utilise that option.” (R4 Male, OBGYN).

Religious leaders as indicated in the previous chapter also strongly endorse adoption as an alternative. However, the reluctance to pursue adoption may be attributed to the desire for a biological connection, the stigma of infertility that persists even after adopting a child, or negative societal attitudes towards adoption. Additionally, there is a fear rooted in the unknown that the adopted child might eventually return to their biological parents, potentially leaving a significant emotional void after years of investment and attachment.

7.4 Barriers to Solutions Given or Accepted

From the analysis, religion affected solutions being accepted than solutions being rendered. The ethics which has been discussed in subsection 7.6.3, discusses why religion does not influence the solutions given by the OBGYN. The observed solutions to infertility problems face numerous barriers, hindering clients from pursuing their desired options. These barriers can be broadly categorised into couple-related factors, religious, socio-cultural, financial, and third-party influences (Figure 7.3).



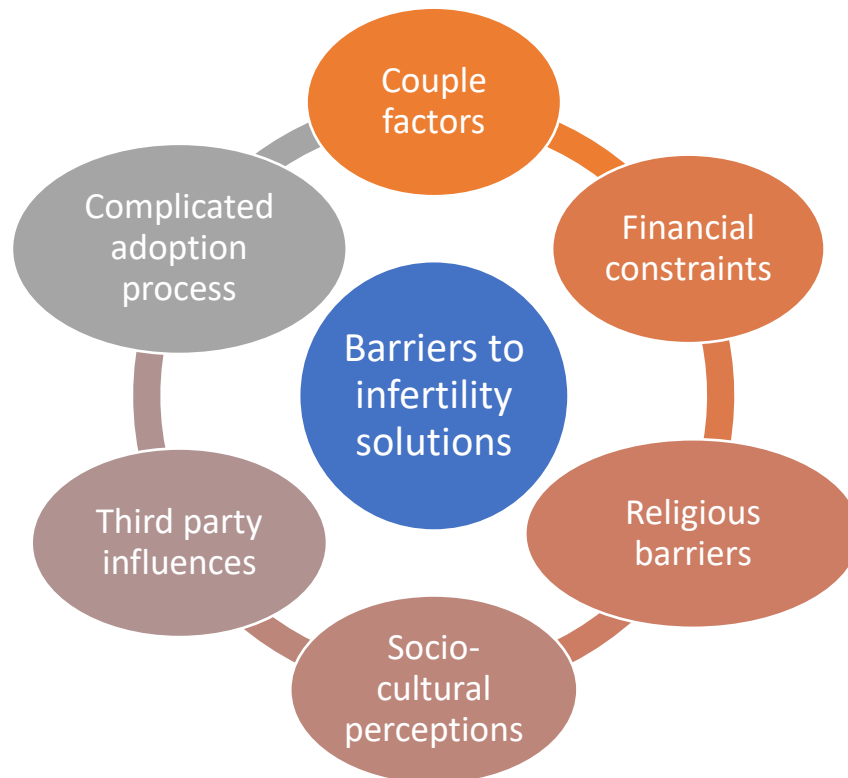


Figure 7.3: Sub-thematic Diagram of Barriers to Solutions Offered to Infertility

7.4.1 Financial Constraints

Financial considerations pose a substantial hurdle, deterring many individuals from proceeding with infertility treatments, including ART. This is because of its significant costs and the high failure rates associated with such procedures. The financial hurdle had different stages; patients need to have the financial muscle to complete the investigations, treatment and finally, ART. It was also revealed that fertility treatments are not covered by the National Health Insurance Scheme, which further compounds the effects of financial burdens. As one respondent put it, “fertility is money”. Some clients may not even have what it takes to go through the investigations for a diagnosis to be reached.

“In our environment, the commonest barrier is cost. I think infertility is not even covered under NHIS. So, your tests will come with a lot of costs, just to know the diagnosis of what is causing it comes with a lot of costs. Before you even get to the stage of saying, ok let’s do IVF. To some

people, just by writing the test for them to do, they won't come back again. Because they can't afford it, some may do the test and if they are fortunate that there is something we can do medically or something less expensive. But for IVF it's a small percentage that is able to move on with it." (R3 Female, OBGYN).

Most of the time, it is cost. You know in our part of the world the cost is quite expensive, eherrh the last time one of the facilities that I was, there it was between four thousand, five hundred dollars and seven thousand dollars. (R6 Male OBGYN).

7.4.2 Religious Barriers

Religious beliefs play a crucial role, with some clients rejecting donor eggs or sperm, owing to concerns about perceived adultery. Two respondents mentioned having clients who seek guidance from their religious leaders before consenting to undergo these procedures. However, there are some clients who acknowledge that their religion forbids it, but still go through with it as was explained as follows:

"Yes, Assisted Conception Technology, and there are very good reasons for that so, some Catholics would not go beyond that. When you tell them that look, the only option is to go for IVF, then it ends there. Because my religion forbids me, but it is not universal. Some Catholics go and access [IVF] and have children. With others, I mean it's individualised; with my faith I wouldn't go ahead. So, faith, but it is not too common. And certainly, it is only the Catholics, I don't know any other religion so far, that would come here and say that because of my religion I cannot go for IVF, rather people were with that misconception "Oh we've been told that IVF babies are not normal so, doctor I want to talk to you first. Is it ok, before they move forward". But with religion, it is only the Catholics, even that, it is not all the Catholics. Some of them decide that look, religion does not allow us to go forward so, that is it." (R10 Male, OBGYN).

They (religious leaders) frown against some treatment options especially when it comes to sperm, egg donations and those things. I have even come across a client who thinks that it is like committing adultery.” (R6 Male OBGYN).

7.4.3 Couple Factors

Primarily, the initial challenge for clients is acknowledging the need for assistance in conceiving or having a child, which is particularly daunting within the cultural context. After acceptance, partners may grapple with issues related to accepting Assisted Reproductive Technology (ART).

“Finality[conclusion] that you need help to have a child, people feel humiliated. It’s infringing on their womanhood or manhood to be told that they have to mix it for you in the lab. I think they feel humiliated.” (R2 Female, OBGYN).

The humiliation often originates from cultural norms and expectations, particularly in societies that highly value childbirth, where women are raised with the belief that motherhood must be achieved naturally and biologically. Deviating from this traditional path can lead to feelings of inadequacy or inferiority.

7.4.4 Third Party Influences

Third party factors have to do with the external forces that come into play while treating the client with infertility. These are put broadly under donor sperm/egg and influence of other people on the decision-making process.

It was revealed that it was more difficult for clients to accept donated eggs or sperms because they do not feel that the babies they would carry are theirs. To others, it was a fact that the father of the child will be unknown because the sperm was donated.

“I think the donor eggs are more difficult for most women to accept and I think it’s just that whole sense of not being my child. Yes, so a lot of them are resistant to it, but those who have

the money would insist that they would try. That we should try with their eggs and let's see, if it fails then..." (R3 Female, OBGYN)

Sometimes decisions are influenced by people within the clients' social circles, such as religious leaders, parents, grandparents, and friends, who may weigh in on the decisions made by the clients. These influences are weightier because of the depth of relationship that exists between them as compared to the attending OBGYN.

"If you have clients who... I had one client like that, I spoke to her about IVF and she went to discuss it with her mother and then her mother said no, and that she doesn't think that IVF is God-made. So, it didn't sit well with her so she shouldn't do it. So, there are people with that kind of mentality, once they feel that it is not a natural thing, so it is not God's way that they should do IVF." (R7 Male, OBGYN).

7.4.5 Socio-cultural Perceptions

Another hurdle lies in the societal and cultural perceptions surrounding fertility treatments. Various cultural misconceptions, particularly concerning the medical interventions, sometimes lead clients to hesitate or avoid ARTs such as IVF. Concerns may arise about societal perceptions of the normalcy of babies conceived through these methods. In some cases, clients fear that even if they use surrogacy and have a child or children, society may still label them as infertile, placing an additional burden on the woman.

Respondents also noted that owing to these socio-cultural perceptions, individuals who conceive through ART or IVF often choose not to disclose the details of their journey to friends and family. This reluctance stems from a fear of potential societal labelling directed at both the individuals and their babies.

"Yes, so, I think apart from money, it is due to the socio-cultural misconception and perception of it. Some people think that the IVF babies have issues. Maybe, a higher increase of let's say or developmental issue or autism, hand malformations a whole lot of anomalies and everything."

So, there's a social, cultural part of it, and some too, have the fear of the effect of the chemicals and injections used. The hormonal medications on the woman and her health. So, those are the other parameters that they feel that, okay based on that ... and then, there is also mere suspicion where they feel that they can sometimes stick their egg into somebody or give my sperm to someone, there is also that one.” (R9 Male, OBGYN).

7.4.6 Complicated Adoption Process

Respondents consistently present adoption, both official and unofficial, as viable options to clients. However, some individuals may not view it as a satisfactory solution. They recognise the adoption process as intricate, cumbersome, and often frustrating. Additionally, societal and cultural misconceptions surrounding adoption act as barriers, dissuading individuals from considering this alternative.

Official or legal adoption has its processes laid down in state records, yet it seems very complicated and complex for most people seeking to adopt. Probably because of lack of education about adoption as a method and the official process those seeking to adopt have to go through. These were concerns that run through all the interviews - clients being frustrated during the lengthy process which could last for several years. Below is a quote from one respondent which confirms this assertion and further adds that some clients end up giving up halfway through the process:

“The up and down, I mean we cite that it is straight-line, it is not straight-line. The process may take two, three, four years of you going up and down”. (R1 Male, OBGYN).

7.5 Faith Integration

In all the ten IDI's, respondents acknowledged that religion and religious beliefs come up during their interaction with their clients. Usually, Christians tend to bring this topic up and tend to have more engagement with their religious leaders compared to Muslim clients, as reported by the respondents. Respondents use various approaches to navigate this terrain. These

approaches have been put under the following sub-themes: role of religion, focus on science, acknowledging the convergence of science and religion and professional/personal ethics as illustrated in Figure 7.4.

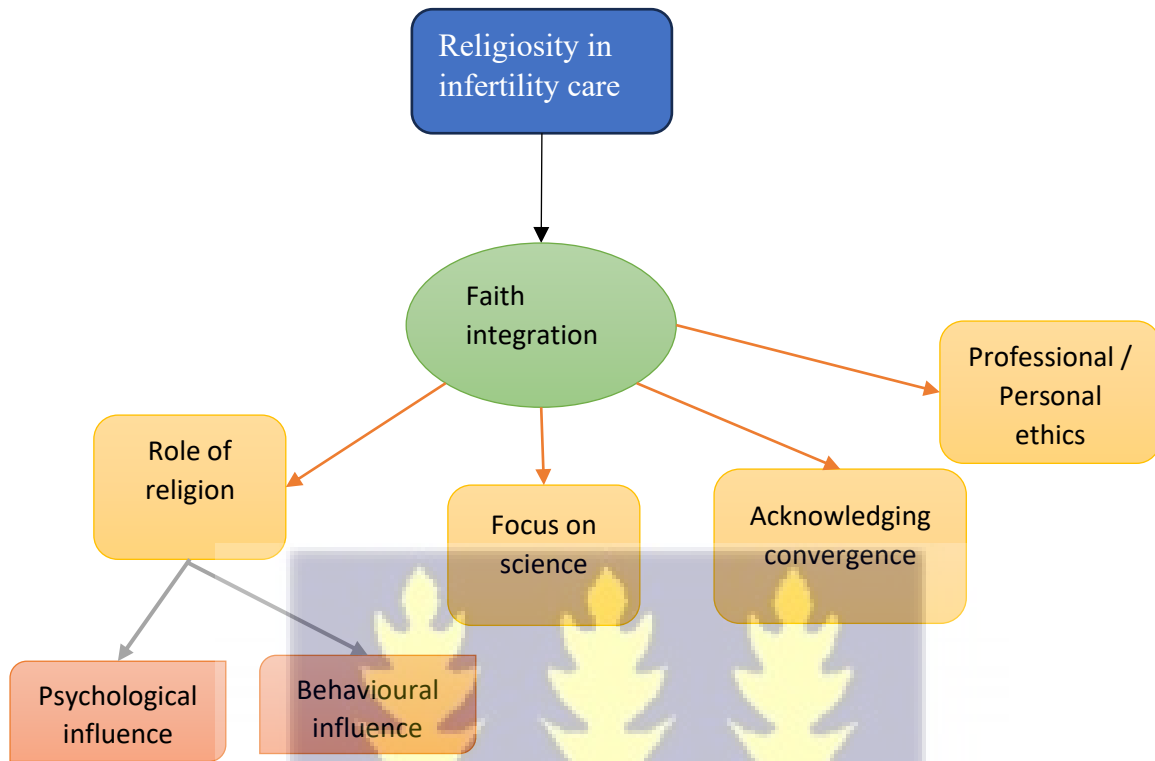


Figure 7.4: Sub-thematic Diagrammatic Representation of Faith Integration

7.6.1 Acknowledging the Convergence of Science and Religion

Four respondents believed in the presence of an unexplained factor, often referred to as the "God factor" or religious role. They acknowledged that despite scientific advancements like IVF, the success rate is not guaranteed to be 100 percent and there are gray areas in science where human knowledge is limited. They recognised the limitations of science and the mysteries that remain unexplained. The following quotes acknowledge the limits of what the respondents do and the involvement of some unknown force with the process:

"Oh sure, religion plays a very important role, I mean we all know that. Eventually, before the pregnancy gets established, God must approve or say yes before. When you do In Vitro

Fertilisation, you can fertilise several eggs, I mean you may have zygote. You implant and provide all the necessary conditions, but somehow the implantation does not succeed. So, there's an unknown factor that nobody can question" (R1 Male, OBGYN).

"We still have grey areas in reproductive medicine and IVF. Even the IVF, which is the most objective approach to helping infertile couples, most scientific ways have grey areas. In terms of, once you add sperm to an ovum you can't tell how many it fertilises. You have no control over that, you will come back and see a certain number have been fertilised. You just have to make sure, you separate them well, after you have placed the embryos there you don't have control over it again. You just make sure you prepare the woman well and then you place it there. So, even in my counselling, I bring the unknown factor in. The fact that I don't have control after I place that in. So, I think it has a role to play but, to say that spirituality alone will fully solve an infertility thing, errh I think that would be best explained by the pastors, who would have seen the woman from the beginning, done the prayers, whatever intervention and then gotten the results. You get the point, herrh I have seen people I have done artificial insemination for, who give testimonies and don't even bring the medical point. And send me a video of their testimony after." (R9 Male, OBGYN).

The accounts indicate that obstetricians and gynaecologists recognise the role of faith or religious beliefs in addressing infertility issues. However, it appears that patients often attribute their successful treatments entirely to divine intervention, overlooking the scientific and medical contributions. This attitude may stem from societal attitudes or stigmas associated with assisted reproductive technologies like in vitro fertilisation or "test tube babies".

During consultations, if patients bring up prayer, the respondents encourage them to incorporate prayer in conjunction with medical treatments. They advocate for a holistic approach that embraces both religious practices and medical interventions, recognizing the

interconnectedness of health and spirituality. They believe in the balance of science and religious practices.

I think it will be more of the Christians, because I don't hear the Muslims saying I am going to see my Mallam about this problem. So, if you would hear... well I go to church and I have come across those who would want to have kids and all that and it both have their roles to play. Faith has its role to play but science also has its role to play. So, I believe as well in the two merging together but it's in knowing the balance of where each is to go. And not everybody knows the balance, sometimes is even the problem with the church you go to. If you don't find yourself in the right church, they may sway you towards one side where your problem may not be with religion or having a spiritual basis at all. You just needed some scientific guidance. But there are times too where people have gone through infertility treatment like one I saw recently, and she stopped, she had it, it failed and then three months along the line she naturally gets pregnant. These happen, science will tell you it's normal to happen but you cannot at the same time rule out the God factor". (R8 Female OBGYN).

"Let them understand that spirituality has its role to play, so while they seek medical treatment for their medical problem, they can also merge that with their belief system. So, if a person comes to you and she says I want to pray, you don't tell the person to stop praying and concentrate on their medication, you could tell her that fine, she can continue with her praying if she thinks that praying makes her feel better, but she should also continue taking her medication. And then she shouldn't discount the medication that you are giving her." (R4 Male, OBGYN).

7.6.2 Focus on Science

All respondents recognised the role of religion in their clients' treatment, with seven specifically pointing out that the focus of their care is on the scientific and medical aspects.

While they do not dismiss their clients' concerns about spiritual matters, they refrain from actively engaging in religious discussions.

“We are the scientists so, you have to look at the evidence in front of you, and then that’s when you can start with the treatment. In terms of their spirituality, he or she may not be privy to what he or she knows. But if she believes that it is spiritual, fine, but physically the things that I have in front of me, that’s what I am going to discuss with my client. And then if she thinks that she needs spiritual help, she can always go and seek for that help. But I wouldn’t want ... most of the time I don’t encourage them to continue towing towards spirituality when things are obvious, you understand”. (R7 Male, OBGYN).

“I think, as much as possible, we try to stay with science and not to go too deep into religion, this is what science says, then and we would do it. I mean occasionally, you say something like, oh even Christ when He healed people, even He has to do something, to suggest that He was into medicines and all that, but we don’t want to go into the details. That is, the discussion moves from science and now becomes a religious one. And we don’t want to go there, so you listen to them and you explain to them how science, and this is what science says. Sometimes I tell them that, look in spite of all the religion that we are talking of, including your pastor, if your pastor wants to go and preach in [the] U.S he is going to go by [an] aeroplane, okay. So, the pastor will not just pray... He is going to go by the plane. If you throw a pen into the air, the pen falls down. How is the plane that carries over three hundred people with luggage, how is it able to suspend in the air and moves hours to its destination? It is science. So, it is the same science that is telling us that, this is what we would do to get you a child. So, you give them an example like we are not downgrading their religion, but you are preaching science. And sometimes they get it, but some of them do not, they can’t and they disappear, but then, that’s their belief, so we could work with that.” (R10 Male, OBGYN).

7.6.3 Professional versus Personal Ethics

It is crucial to underscore that respondents prioritise the ethical standards of their profession, refraining from imposing their religious beliefs on clients. Four respondents who were Catholics do not perceive this as conflicting, as they provide services in line with professional ethics, even when those services differ from certain religious teachings. This approach ensures that clients receive support and options without feeling pressured or conflicted by religious considerations. They acknowledge that spirituality is part of the human and cannot be separated, thus they proceed with caution in how they approach issues ethically.

“You know when you are interacting with patients, it is important to know the extent of their belief system or what role spirituality plays in their lives. Because you can’t manage them in isolation, if the person is highly spiritual and you emphasise only medical treatment, you won’t get their cooperation” (R4 Male, OBGYN).

“Yeah, yeah, you know it is a human being we are treating and that’s their belief so, you don’t take the religion away from them, so long as it doesn’t interfere with what we are doing. For instance, I will not allow a pastor to come to the theatre, you can’t come in there and come and pray; that one, it won’t happen. At the ward you can come and offer prayer there, but the pastor coming into the theatre, that one doesn’t happen” (R10 Male, OBGYN).

No, I don’t, and even as a Catholic with the background and all that, I don’t feel conflicted. Though it’s a teaching, but personally I don’t think... personally, I believe that you should be able to decide on when to have kids... (R5, Male OBGYN).

7.6.4 Role of Religion

The role of religion in their practice could be positive or negative. Religion as part of their care had two sub-themes under the role of religion. Thus, religion has psychological influence, and behavioural, which can also cause delay in seeking treatment as described by the thematic framework in figure 7.4. This is also in line with perceptions about religion helping infertility

from the quantitative aspect and religious leaders' perceptions that religion has a role to play in the management of infertility.

7.6.4.1 Psychological Influence

The acknowledgement of the fact that religion provides hope and optimism, which in turn aids the psychological well-being of patients, is a shared sentiment. This is usually achieved through the performance of some ritual(s). While prayer (performed by the patients) is a commonly mentioned religious ritual, the specifics of its nature, whether individual or communal, are often not disclosed.

"Well, I try to inspire hope, and for most of us our hope is grounded in our faith. And for a Christian, your faith is probably in God, so if I tell you, you need to do IVF I would still encourage you to continue to pray. Because it is not everyone who does IVF and is successful. So, if by praying your IVF will work with the first chance, then your prayer has yielded the results." (R3 Female, OBGYN)

"Don't forget that our belief system makes us feel well or make us feel bad, okay. And fertility depends on hormonal system which depends on a higher thinking side which has a whole lot to do with our spirituality and our belief. So, if praying makes the woman less anxious and relaxed [laughed] that may even improve her ovulation and cycle and possibly get pregnant." (R4 Male, OBGYN).

Respondents do not discourage clients from engaging in prayer, but advise against rituals that might interfere with their prescribed medical treatments, such as inserting objects into their vagina before sexual intercourse. Some respondents mentioned that they inquire about the religious rituals their clients engage in to ensure that they are not being exploited by certain religious leaders.

"I encourage them, yes it is important to pray, but they should be careful about the sort of things that the pastors ask them to do" (R2 Female, OBGYN).

“... I have heard of an instance where a couple were in need of a child and they went to a spiritual camp or somewhere and this priest or whoever dictates to them times even when they should have sex together. Errm gave them concoctions to insert before having sex with their partners; it is possible that some of these things may actually be detrimental to their desire to achieve pregnancy. So, if you get to know of some of these things, yeah why not; you can advise. But sometimes you may not be privy to the details of what they go through.” (R4 Male, OBGYN).

Despite recognising the positive role of religion, none of the respondents had utilised the services of the hospital chaplain (referred any of their clients to the chaplain), with many unaware of the chaplain's presence. However, some had observed visits from a Catholic priest to the wards where church members were admitted. This issue could stem from the lack of active involvement by hospital chaplains in management, the obstetricians and gynecologists' focus on scientific methods, their hesitancy to engage with unfamiliar topics, or the varied beliefs and cultural backgrounds of their patients.

7.6.4.2 Behavioural Influence

Respondents emphasised the need for timely interventions for fertility related cases. However, these are sometimes delayed when clients take time to consult religious leaders or seek solutions from religious institutions prior to seeking medical treatment. Six respondents emphasised that time is of the essence in cases where the client has a medical issue, for example fibroid. The medical condition could worsen with time and the biological clock could have progressed, thereby decreasing the clients' chances of a successful procedure.

“Oh yes, it is possible; because even the medical causes that we may investigate and identify, even when you have told them, they may want to seek spiritual solution to those medical causes. And if those are conditions that progress, then delaying the medical intervention will worsen the outcome for them. For instance, a woman comes to you and you investigate and you think that she has fibroid and for which reason pregnancy is not coming thus far, and she said, oh

she would want to go and pray about it. She can pray about it for years and come back and it's worse, you know so, something that you could have resolved easily now becomes a challenge. So, the time to which people decide to seek spiritual support is not only when the infertility is unexplained, even when you can identify the cause, they may want to seek spiritual solution" (R4 Male, OBGYN).

"... ehrrm, generally you know the chances of conception falls with age and it's more pronounced for the females than it may be for the males. But there is also increasing age related sperm challenges for the male as well. So usually, what happens is that, there is a false sense of, oh I have more time amongst a lot of women, ahaa. And also, that is mixed with our faith in God, there is a bit of "Nyame b3y3" (God will solve the conception issues) with the waiting, which sometimes when you are trying to tell them that there is some sense of urgency here, would look at you and then Say that, why are you in so much of a hurry?" (R9 Male, OBGYN).

From the accounts, it's clear that the treatment of infertility is time-sensitive, and when patients overly focus on religious beliefs, especially in situations with clear medical causes, it can be counterproductive. The plausible reason, which was noted in the second quote, is an excessive devotion to religious faith, which can lead patients to hesitate or delay seeking effective medical solutions for infertility.

7.7 Discussion

In this chapter, we explored the responsibilities of obstetrician-gynecologists in addressing infertility and how they navigate the intersection of religion or religiosity in their interactions with patients experiencing fertility challenges.

Respondents reported a higher incidence of females seeking help compared to males, consistent with findings in other studies (Chimbatata and Malimba, 2016; Rooij, et al., 2017; Hiadzi and Boafo, 2020c; Hiadzi, Boafo and Tetteh, 2021). The quest for pregnancy appears to be

influenced by cultural norms surrounding womanhood and the societal expectation of women carrying the burden of childbearing (Hess, Ross and Gililand, 2018). Moreover, women tend to exhibit better health-seeking behaviour than men (Culley, Hudson and Lohan, 2013). Research has consistently indicated that men are generally less involved and concerned about infertility, which is often perceived as primarily a woman's issue. However, studies focusing on men in infertility research have unveiled that infertility poses a significant crisis for men as well (Ortayli et al., 2005; Culley, Hudson and Lohan, 2013; Grunberg, Miner and Zelkowitz, 2022). Some men resort to alcohol consumption as a coping mechanism to mask their frustrations (Tabong and Adongo, 2013a).

The diverse range of psychological states expressed by clients aligns with findings from other studies (Dyer, 2007; Ombelet et al., 2008; Makanjuola, Elegbede and Abiodun, 2010; Hess, Ross and Gililand, 2018). For instance, in Facchin et al.'s (2020) study, clients exhibited extreme anxiety and a strong desire for parenthood at any cost. Another study (Hinton, Kurinczuk and Ziebland, 2012) revealed that clients experienced feelings of embarrassment about their infertility; a primary sentiment echoed in this study is that individuals felt embarrassed about seeking assistance for conception. Turabian's (2019) research documented that patients commonly presented with emotions such as depression, sadness, and exhaustion upon seeking medical attention at the hospital. The high emotional burden of clients could be a possible hindrance to successful treatment as found in a study in Ghana (Cox et al., 2022).

Furthermore, research conducted in Nigeria (Omoaregba et al., 2011) indicated that rates of psychological distress among infertile women were higher compared to observations in Western cultures. This is confirmed in our study setting by Oti-Boadi and Oppong Asante (2017), who also documented high levels of stress in Ghanaian women with fertility issues. Infertility, as documented in the literature, is a problem that imposes significant stress on individuals, necessitating proper counselling for all clients, not exclusively those undergoing IVF, as highlighted in this study. The absence of adequate counselling may be attributed to

factors such as limited resources, and high patient-to-doctor ratios. This leads to minimal time for consultations, and a scarcity of psychologists, or their limited availability. These probable explanations were accentuated in a study in Accra that highlighted lack of time in consulting rooms, too few psychologists and reluctance of patients to see the psychologist (Cox et al., 2022). Addressing these challenges is crucial for ensuring comprehensive support for individuals grappling with infertility.

The psychological states experienced by clients often trigger various coping mechanisms. Respondents in this study point to religious rituals, particularly prayer, playing a crucial role in instilling hope among their clients. Interestingly, this finding supports findings from other studies conducted across sub-Saharan Africa, where religion and prayers are frequently employed as coping mechanisms for individuals facing infertility challenges (Okafor, Joe-Ikechebelu and Ikechebelu, 2017; Nachinab, Donkor and Naab, 2018; Hiadzi and Woodward, 2019b; Esan et al., 2020; Ofosu-Budu and Hänninen, 2021). Faith emerged as a vital factor in sustaining patients, who sometimes sought support from sources outside the healthcare system, either with or without permission from healthcare providers, as documented in the literature (Grinstein-Cohen, Katz and Sarid, 2017; Ntiamoah et al., 2018; Hiadzi and Boafo, 2020c; Taghipour et al., 2020; Hiadzi, Boafo and Tetteh, 2021).

However, religious coping can have negative impacts as well. A quantitative study in Ghana (Oti-Boadi and Oppong Asante, 2017) revealed that religious coping can both increase and decrease psychological states. Negative religious coping was associated with participants attributing infertility as a test of faith or a consequence from God, leading to poorer psychological health.

Ensuring that health workers engage in discussions to prevent clients from participating in potentially harmful or exacerbating rituals is crucial. Open communication, especially regarding coping mechanisms rooted in religious practices, can contribute to a more

comprehensive and supportive approach in addressing the psychological aspects of infertility. The plausible explanation to why respondents despite acknowledging religion's role never used the services of the chaplain could be lack of knowledge on the existence of the chaplain, the services that can be rendered by him or her. Also, it could be that they strongly feel the need to stay within the limits of what they understand (science) and thus clients should seek their spiritual help from sources known and comfortable to them. Literature extensively explores spiritual health as a key component of overall well-being, emphasising the connection with God, oneself, others, and nature (Dhar, Chaturvedi and Nandan, 2011; Rahnama et al., 2015; Ghaderi et al., 2018).

Despite the comforts provided by unprecedented developments in various aspects of life, humanity often seeks something beyond these material means (Dhar, Chaturvedi and Nandan, 2011), which is in tandem with findings in this study, where respondents acknowledge the limits of science and a presence of an unexplained factor, attributing it to the God factor. Religious prayers, specifically, have been documented as a coping strategy, probably owing to the presence of several examples of cases in religious text that were solved, which people rely on with hope, while they wait on God (Tabong and Adongo, 2013a). Recognising and understanding the role of religious beliefs in healthcare can contribute to a more holistic and culturally sensitive approach to addressing the multifaceted aspects of well-being.

The results of the study indicate that clients often encounter various barriers associated with the solutions provided. These barriers are categorised as social, cultural, religious, personal, third-party, and financial. Similar to findings from the interviews with religious leaders, religion has been documented in several studies as a hindrance in ART (Asplund, 2020; Deonandan, 2020; Nicolas, 2021; Jimoh et al., 2023). Interestingly, in contrast to the findings of this study, respondents in a different study (Hiadzi et al., 2021) from diverse religious backgrounds did not view religion as a hindrance for their clients. This discrepancy could be attributed to methodological differences. While findings in this chapter represent the

perspective of caregivers, the study by Hiadzi et al. (2021) focused on the viewpoint of care-receivers. It is noteworthy to mention that despite being recognised as a barrier, some respondents in this study acknowledged that certain clients still navigate through religious hindrances. The divergent viewpoints may arise from the distinct vantage points of those providing care and those receiving it, underscoring the significance of considering multiple perspectives in comprehending the complexities of the challenges faced by individuals dealing with infertility. This acknowledgment of varying experiences emphasises the need for a nuanced understanding that considers both the perspectives of caregivers and care-receivers in the realm of fertility challenges.

The socio-cultural and pro-natalist culture of Ghana, stressing the importance of biological children, plays a significant role. Some respondents noted that their clients did not consider adoption as a viable option, a sentiment corroborated by findings in other studies. For instance, in a quantitative Iranian study (Bokaie et al., 2012), a majority of respondents expressed reluctance to adopt a child. Likewise, in a Ghanaian study conducted in the northern part of the country, while participants acknowledged child adoption as an option, there was no established precedent (Nachinab, Donkor and Naab, 2018; 2019).

The financial aspect of infertility proves to be a significant challenge, encompassing both diagnostic tests and proposed solutions. The financial burden of ART is well-documented in the literature (Okafor, Joe-Ikechebelu and Ikechebelu, 2017; Hiadzi and Woodward, 2019b; Turabian, 2019; Cox et al., 2022) and was reaffirmed in this study. Misconceptions about the procedure and its outcomes add complexity to the financial burden, leading to secrecy surrounding engagement in such practices as documented in this study. This secrecy is consistent with a study in Nigeria (Okafor, Joe-Ikechebelu and Ikechebelu, 2017) where IVF treatment was shrouded in stigma and secrecy. A plausible explanation for this phenomenon could be societal expectations that females should prove their fertility without assistance, and seeking help may be perceived as a deviation from traditional notions of womanhood. This

could also be due to inadequacy of knowledge in the population linked with social, cultural and religious perceptions about infertility.

7.8 Theoretical integration

The convergent findings across community members, religious leaders, and healthcare providers reveal how lived religion theory and help-seeking models operate synergistically in infertility contexts. All three stakeholder groups demonstrate practical religious adaptation, community members modify treatment expectations based on religious practice, religious leaders adapt doctrine to pastoral needs, and healthcare providers accommodate religious concerns within medical care. This suggests that lived religion operates as a shared cultural framework that shapes help-seeking behaviors across the entire care ecosystem rather than functioning as isolated individual beliefs.

The help-seeking patterns identified across chapters reveal a complex multi-directional pathway rather than the linear progression often depicted in theoretical models. Individuals move between religious, traditional, and medical care systems in ways that reflect both religious flexibility and pragmatic problem-solving. This challenges theoretical models that position religious and medical help-seeking as competing alternatives, revealing instead their complementary operation in practice. The findings suggest the need for theoretical frameworks that better account for simultaneous multi-system help-seeking and the cultural and religious embedding of healthcare decisions.

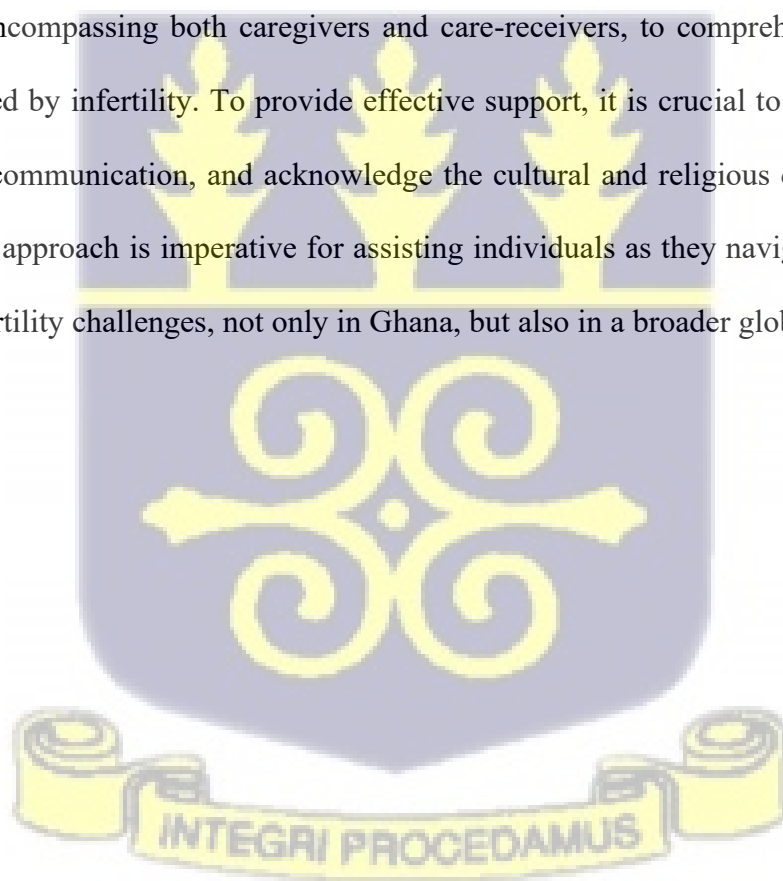
7.9 Conclusion

The examination of obstetrician/gynaecologists' roles in addressing infertility, along with their navigation of the intersection of religion in patient interactions, reveals an intricate landscape shaped by cultural norms, societal expectations, and diverse psychological states. Obstetrician/gynaecologists recognise the significant role that religion plays in the fertility journey, and they employ various strategies to navigate this aspect. Encouraging patients to

find hope in their faith, acknowledging the use of religious rituals as coping mechanisms, and recognising the psychological benefits for patients are integral components of their approach.

Healthcare professionals advocate a comprehensive treatment approach, combining medical interventions with religious practices, accentuating the intertwining of both aspects. They are attuned to the multifaceted and complex nature of the treatment process, understanding the diverse cultural, social, and religious lenses through which clients make decisions. The cultural and pro-natalist context in Ghana poses additional challenges, particularly regarding the limited consideration of adoption as a viable option. This factor further complicates the fertility journey for individuals seeking assistance.

In conclusion, this multifaceted discussion underscores the importance of embracing diverse perspectives, encompassing both caregivers and care-receivers, to comprehend the intricate challenges posed by infertility. To provide effective support, it is crucial to address barriers, promote open communication, and acknowledge the cultural and religious dimensions. This comprehensive approach is imperative for assisting individuals as they navigate the complex landscape of fertility challenges, not only in Ghana, but also in a broader global context.



CHAPTER EIGHT

SUMMARY OF FINDINGS, CONCLUSION, CONTRIBUTION TO KNOWLEDGE AND RECOMMENDATION

8.1 Introduction

Infertility represents a significant public health issue and is recognised as one of the six overlooked aspects of maternal health. It carries both physiological and mental health ramifications. Even in regions like sub-Saharan Africa, where birth rates are notably high, infertility remains prevalent. Generally, understanding and attitudes towards infertility are inadequate, with explanations often ascribed to supernatural or non-scientific causes. This misunderstanding contributes to stigmatisation of those believed to be infertile, influencing their pursuit of treatment. People facing infertility may simultaneously turn to medical, traditional, or faith-based interventions for solutions.

Religion and religious beliefs serve as coping mechanisms for various challenging life situations. They offer hope during tough times, although "religion" itself is a complex term with over seventeen definitions identified in scholarly literature. On the other hand, religiosity refers to the degree to which an individual follows their religious beliefs or convictions. These beliefs influence morals, behaviours, preferences regarding fertility, and approaches to addressing infertility. While religion plays a significant role in the narrative surrounding fertility, there is still limited understanding of how strict adherence to religious beliefs impacts views on infertility and its management.

In an effort to deepen understanding and contribute to discussions on the subject, this research aimed to explore the interplay between religiosity and attitudes toward infertility. It adopted a convergent parallel mixed-methods approach, gathering both quantitative and qualitative insights from the Ablekuma South metropolitan area. The study used the Centrality of

Religiosity Scale (CRS-15) to assess participants' levels of religiosity. From a quantitative perspective, it investigated the views of community members who have ever been married and are aged 25 and older, focusing on their perceptions regarding who should seek infertility treatment and the primary solution to resolving infertility. On the qualitative side, the study looked into the interactions between religious leaders and medical professionals, particularly obstetricians and gynecologists at the Korle-Bu Teaching Hospital. It examined the awareness and views of religious leaders on infertility and its treatment, as well as how healthcare providers reconcile their own religious beliefs with those of their clients. This chapter summarises the findings and offers recommendations based on the research.

8.2 Summary of Findings

In the quantitative segment of the research, we surveyed 950 participants, with women representing 50.6 percent of this group. The average participant was 41 years old, typically marrying for the first time at 26.1 years. Among the 418 female participants who had experienced pregnancy, the majority had their initial childbirth between the ages of 15 and 24. Over half identified as Ga/Dangme, Christian, and currently partnered. A significant portion, 83.68%, reported employment. Respondents' number of children varied, extending from none to nine. Most participants had attained some form of formal education. According to the 15-item CRS religiosity scale, 23 participants scored the maximum 75, whereas three scored the minimum of 3. In the qualitative part of the study, among the religious leaders surveyed, 70.6 percent (12 out of 17) were male, and similarly, 70 percent (7 out of 10) of the healthcare workers were male. Their ages spanned from 20 to 70, with professional experience ranging from 1 to 38 years. Interviews lasted between 20 and 63 minutes.

Attitudes towards infertility were found to be less than ideal. Although most participants did not consider witchcraft to be a primary cause of infertility, a notable 40 percent still held this belief. Additionally, 60 percent of those surveyed did not view infertility as a medical condition. The gendered perception of infertility was evident in opinions about whom to blame;

the number of respondents who thought men were exclusively at fault was half the number who believed women were solely responsible. A significant 78.3 percent of participants felt that society tends to place the blame on women.

The first objective of this research was to explore the correlation between participants' religiosity and their viewpoints on fertility, particularly focusing on whom they believe should seek treatment and what they consider the main solution for infertility. For the first outcome, determining who should seek treatment, the binary logistic regression predicts both partners seeking treatment. The findings indicate that religiosity is a significant factor in the belief that both partners should address infertility together, with those identifying as less or moderately religious showing lower likelihoods of supporting this approach. Nonetheless, after adjusting for additional variables in a more comprehensive model, significant results were noted among the highly religious and less religious groups, both advocating for joint treatment efforts. Other factors such as place of residence, educational level, age at first marriage, number of children, status of bride wealth, belief in religion's role in addressing infertility, assigning blame for infertility, considering infertility as a medical condition, and views on the purpose of marriage also emerged as significant in influencing attitudes towards seeking infertility treatment.

Regarding the second outcome, identifying the primary solution to infertility, religiosity was not a determining factor in prioritising medical solutions in either the first model or the second model. Instead, factors like locality, age group (35 to 44 years), educational attainment (basic and secondary), belief in witchcraft as a significant cause of infertility, and experiences of delayed childbirth were highlighted as influential in leaning towards medical interventions as the primary recourse for infertility issues.

The second objective of the study focused on understanding the views of religious leaders regarding infertility and its treatment. From the analysis, three principal themes emerged: Knowledge about infertility, perceptions about ART, and proposed solutions to infertility. It

was noted that religious leaders' understanding of infertility and ART was not comprehensive, mirroring findings from the quantitative part of the research. Identified causes of infertility were categorised into physical and spiritual realms, with the latter including both human-induced and divine origins. Physical causes ranged from medical reasons, such as complications from abortions, to non-medical factors like ignoring specific cultural rites. Despite the variety of cited reasons, explanations frequently circled back to spiritual interpretations. The viewpoints on ART among religious leaders varied significantly, falling into three categories: full acceptance, outright rejection, and a neutral or middle stance. They acknowledged their role in addressing infertility, suggesting that solutions should cover both medical and spiritual approaches.

The third objective of this study was to investigate how healthcare professionals manage the interplay between their own beliefs and those of their patients in treating infertility. This led to the identification of three main themes: Solutions offered, Barriers to solutions offered and Faith integration.

Predominantly, women were the ones seeking help at medical centers, while men typically showed up only if requested, with many failing to follow through with such requests. The psychological condition of these women varied greatly, filled with feelings of anxiety, depression, and hopelessness. Healthcare providers consistently offered solutions to infertility, but also acknowledged the hurdles in accessing these treatments. Identified barriers included the patients' acceptance of certain treatments, financial constraints, socio-cultural attitudes, the complexity of the adoption process, and religious considerations.

While recognising the significant role of religion in infertility treatment, healthcare workers tended to focus more on scientific methods, given the ambiguous nature of religious aspects. However, they did advocate for their religious patients to supplement medical treatments with faith-based, non-intrusive practices such as prayer. Echoing the views of religious leaders,

healthcare professionals generally agreed that a combined approach of religion and medicine offers the best solution to infertility.

8.3 Conclusion and Contribution to Knowledge

The study concludes that a complex interplay of cultural, educational, and demographic elements influences individuals' beliefs and decisions regarding infertility treatment. It notably underscores the significant impact of religiosity on these choices, particularly evident in attitudes towards mutual treatment by partners and less so regarding medical solutions. This observation corroborates certain academic opinions while contradicting others. The role of religion is further underlined in conversations with religious leaders and healthcare professionals, who agree on its crucial role in addressing infertility. While religious leaders offer vital psychological support, reflecting the diverse psychological impacts highlighted by obstetricians and gynecologists, their involvement should be carefully monitored to avoid endorsing potentially harmful practices. They play an essential role in fostering hope through faith, legitimising religious rituals as coping strategies, and acknowledging their psychological benefits for patients. Furthermore, educational attainment emerges as a key factor, promoting a better understanding of infertility and fostering a more accepting attitude towards various treatment options. This perspective is mirrored in religious leaders' responses, which are often shaped by their limited knowledge of the condition.

Additionally, the study identifies intricate dynamics in societal attitudes towards infertility, especially regarding the assignment of blame, and how these perceptions influence couples' decisions to pursue treatment. Healthcare professionals recognise the complex interplay of cultural, social, and religious factors that shape their clients' decision-making processes. This complexity adds layers of difficulty for those seeking help with infertility. In the context of Ghana, where cultural and pro-natalist views prevail, the challenges are amplified, particularly in the underwhelming acceptance of adoption as an alternative. While adoption is considered a viable solution by both religious leaders and healthcare professionals, not everyone endorses

it as such. The intricate nature of Ghana's adoption procedures further complicates the situation, hindering some individuals from considering this path.

This research enriches our comprehension of the multifaceted factors influencing the pursuit of infertility treatment, highlighting the imperative to incorporate a variety of cultural, social, and educational considerations when addressing infertility issues among different communities. Additionally, there is a pressing necessity to enlighten religious leaders about infertility's complexities and stress the critical role of directing individuals toward professional healthcare services. Such educational initiatives aim to equip religious figures with accurate information, enabling them to support the holistic health of individuals grappling with infertility challenges effectively.

8.4 Recommendations

Based on the findings of this study, the following recommendations are proposed to address the multifaceted challenges associated with infertility treatment. The recommendations can be broadly put under practice, policy and research.

8.4.1 Practice

Healthcare institutions should develop and implement culturally sensitive educational programs aimed at the general public to enhance understanding of infertility. These programmes should aim to reduce stigma and misconceptions associated with infertility treatment, especially within communities where they are located.

Religious leaders should be engaged in the management of infertility at the hospital level. The leadership of obstetricians and gynaecological units in collaboration with the management of the hospital should facilitate workshops and training sessions for religious leaders to educate them about the medical and psychological aspects of infertility. Healthcare professionals and religious leaders should encourage couples seeking infertility treatment and to advocate for a balanced approach that respects medical advice and religious beliefs.

The chaplaincy division of the hospital should ensure and establish collaborative networks between healthcare professionals and religious leaders to ensure that individuals dealing with infertility receive comprehensive support. This collaboration can help bridge the gap between medical and spiritual approaches to infertility. NGOs and social welfare services should promote awareness and understanding of adoption as a viable option for family building through targeted community outreach. They should advocate for specific legal reforms and policy changes to streamline the adoption process, including simplified paperwork requirements, reduced processing times, and clearer legal frameworks. These organisations must address existing legal and procedural barriers to adoption through targeted advocacy campaigns that highlight systemic obstacles. Also, they should make adoption more accessible through public education programmes that demystify the legal process and reach underrepresented populations. Finally, NGOs and social welfare services should provide comprehensive resources and support for couples considering adoption, including legal guidance, procedural assistance, and ongoing support networks for adoptive families throughout their journey.

The chaplaincy division in collaboration with unit leadership should establish support groups and community engagement initiatives to provide psychological support for individuals and couples facing infertility. These groups can offer a space for sharing experiences, reducing isolation, and fostering community support.

8.4.2 Research

Further research should delve into the gendered disparities in perceptions of infertility, examining how societal norms and roles influence men's and women's experiences and understandings of infertility differently. Additionally, studies should intensively explore the interplay between community perceptions and health-seeking behaviours among individuals facing infertility at the grassroots level. This approach will provide deeper insights into how

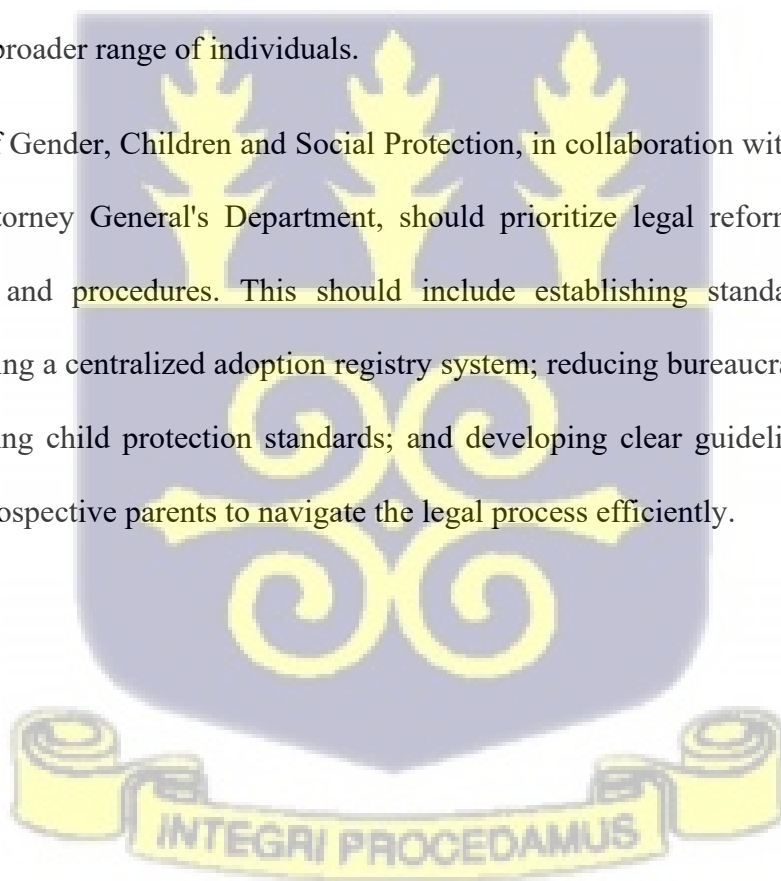
cultural, social, and environmental factors shape the infertility journey and the strategies employed by individuals and couples in navigating their paths to seeking help.

8.4.3 Policy

The Ministry of Health (MOH) should consider incorporating aspects of religious care for clients receiving infertility consultations by enhancing the chaplaincy offices associated with each hospital.

The Ministry of Health (MOH) and the Ghana Health Service (GHS) should advocate for policies that improve access to infertility treatments and support services, particularly for underrepresented poor groups. Both agencies (MOH and GHS) should collaborate towards reducing the financial barriers associated with infertility treatments to make them more accessible to a broader range of individuals.

The Ministry of Gender, Children and Social Protection, in collaboration with the Ministry of Justice and Attorney General's Department, should prioritize legal reforms to modernize adoption laws and procedures. This should include establishing standardized adoption timelines; creating a centralized adoption registry system; reducing bureaucratic requirements while maintaining child protection standards; and developing clear guidelines for adoption agencies and prospective parents to navigate the legal process efficiently.



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Appendix A
Survey instrument

QUESTIONNAIRE

Hello...my name is _____ I am a student of the Regional Institute for Population Studies (RIPS), University of Ghana, Legon currently helping on a project titled religion and community perceptions of infertility.

The purpose of this discussion is to understand how religion or religious practices shape community perceptions about infertility. None of your answers will be available to anyone at any time. All the information you give will be kept private and your name will not be put anywhere on this tool. If you decide not to participate in this survey, you may withdraw at any point of the interview. However, I really need your honest response to better understand how religious practices help in dealing with infertility and how it influences its management.

The results of the study would hopefully improve future management of infertility, refine health programmes and policies to benefit society in general.

Instruction: This questionnaire is to be administered to community members who have ever married and aged 25 years and older. Questions relate to general background characteristics, religious practices, knowledge about infertility and community perceptions about causes, treatment of infertility.

SECTION 1: BACKGROUND INFORMATION

1. Age of respondent (in completed years)
2. Sex of respondent
 - a. Male ☐
 - b. Female ☐
3. Employment status If No Skip to question 6
 - a. Yes
 - b. No
4. If yes Specify
5. If employed, estimated monthly income (GH cedis)
6. Highest level of education of respondent
 - a. No Education
 - b. Preschool
 - c. Primary
 - d. Middle/JHS
 - e. Secondary/SHS
 - f. Vocational
 - g. Higher/ Tertiary
 - h. Other (Specify)
7. Marital status of respondent...
 - a. Divorced/Separated ☐
 - b. Widowed ☐
 - c. Married ☐
8. Status of bride wealth in the union of respondent
 - a. Fully paid ☐
 - b. Partially paid ☐

- c. Not paid ☐
9. Do you have health insurance?
- a. Yes ☐
- b. No ☐ If No, Skip to question 10
10. Is your insurance currently valid?
- a. Yes ☐
- b. No ☐
11. Religion of respondent
- a. Catholic
- b. Anglican
- c. Methodist
- d. Presbyterian
- e. Pentecostal/Charismatic
- f. Other Christian
- g. Islam ☐
- h. Traditional/Spiritual ☐
- i. No religion
- j. Other Religion.....
12. To which ethnic group do you belong?
- a. Akan
- b. Ga/Dangme
- c. Ewe
- d. Guan
- e. Mole-Dagbani
- f. Grusi
- g. Gurma
- h. Mande
- i. Other
13. How many children do you have

SECTION 2: MARITAL HISTORY

14. Age at first marriage
15. How long have you been married? If respondent is divorced or separated how long was he/she married?
16. How many times have you been married?
17. What in your opinion is the purpose of marriage (Tick all that apply)
- a. Procreation
- b. Companionship
- c. Financial security
- d. Other (specify)
18. What in your opinion is the **primary** purpose of marriage
- a. Procreation
- b. Companionship
- c. Financial security
- d. Other (specify)

SECTION 3: PREGNANCY HISTORY

19. Have you ever been pregnant (include miscarriages and abortions)?
a. Yes ☐
b. No ☐ If no skip to question section 3
20. How many times have you been pregnant (include miscarriages and abortions)?
.....
21. How old were you when you became pregnant for the first time (include miscarriages and abortions)? years
22. How many times have you had a miscarriage in past year?
23. How many times have you ever had an abortion?
24. How many times have you ever had an ectopic pregnancy?
25. Have you ever given birth to a child?
a. Yes ☐
b. No ☐ if No skip to question 25.
26. If yes, how many?
27. Do you seek medical help when pregnant, for example visit Antenatal clinic?
a. Yes ☐
b. No ☐

SECTION 4: DELAYED FERTILITY

28. Has your present partner any biological children who are not your biological children?
a. No ☐
b. Yes, 1 child ☐
c. Yes, 2 children ☐
d. Yes, 3 or more children ☐
29. Have you any biological children of your own, for whom your present partner is not the biological father?
a. No ☐
b. Yes, 1 child ☐
c. Yes, 2 children ☐
d. Yes, 3 or more children ☐
30. How many years after union formation without a child will you say the couple is experiencing delay in fertility?.....
31. Has any family member experienced delays in childbirth
a. Yes ☐
b. No ☐
c. I don't know ☐ If No or Don't know skip to Question 34
32. If yes, is it a frequent occurrence in the family involving different members?
a. Yes ☐
b. No ☐
33. Is it usually with delayed first live birth or delayed second live birth?
a. First ☐
b. Second ☐
c. Both ☐
34. Where should information be sought about infertility or an attempt to get pregnant?
(Tick all that are relevant)
a. Health facility ☐
b. Family, friends and acquaintances ☐
c. Radio ☐
d. Internet forums (internet sites for: pregnancy, family life, growing people, parents) ☐
e. Newspapers/magazines Books ☐

- f. Other: ☐
- g. No, I have not sought information about infertility or on an attempt to get pregnant ☐
- h. I don't know ☐
35. Who should take the initiative in seeking solutions for a delayed childbirth in a union?
- a. Wife ☐
- b. Husband ☐
- c. Another person or persons, specify.....
- d. I don't know ☐
36. Are you currently using contraceptives? If No skip to question 38
- a. Yes ☐
- b. No ☐ if No skip to question 38
37. If Yes, specify.....
38. Do you desire a/another child?
- a. Yes ☐
- b. No ☐
39. Does your partner desire another child?
- a. Yes ☐
- b. No ☐
- c. I don't know ☐
40. Have you ever experienced any delays in childbirth?
- a. Yes ☐
- b. No ☐ If No, skip to next session
41. If yes, was it the first or a subsequent birth?
- a. First ☐
- b. Second ☐
42. How many years was the delay for?
- Years: Months:
43. Did you decide on a time plan within which you expected to get pregnant?
- a. Yes, I/we expected that I would get pregnant within weeks / month(s)
- b. No, we had no plans
44. Have you used an ovulation test during this time that you have been trying to get pregnant?
- a. No ☐
- b. Yes, I have used ovulation tests times.
45. During your on-going attempt to get pregnant have you considered adopting a child?
- a. Yes, very often ☐
- b. Yes, a little ☐
- c. Undecided ☐
- d. No ☐
46. Have you been given personal advice about infertility or your on-going attempt to get pregnant from any of the following professionals? (Tick all that are relevant)
- a. Medical personnel ☐
- b. Dietician ☐
- c. Counsellor ☐
- d. Religious leader ☐
- e. Other:

- f. No, I have not been given any advice about infertility or my on-going attempt to get pregnant ☐

SECTION 5: ATTITUDE OF THE RESPONDENTS REGARDING INFERTILITY

47. How many months of delayed fertility will you say a couple is infertile?
48. Do you think infertility is a disease?
- Yes ☐
 - No ☐
 - I don't know ☐
49. Do you think infertility should be treated medically?
- Yes ☐
 - No ☐ If No, Skip to question 51
 - I don't know ☐
50. Who do you think should seek medical treatment first?
- Husband ☐
 - Wife ☐
 - Both ☐
 - I don't know ☐
51. Do you think that if a couple conceives once they might have problems conceiving again?
- Yes ☐
 - No ☐
 - I don't know ☐
52. To whom would you go for treatment? Primary preference?
- Medical Doctor ☐
 - Traditional medicine ☐
 - Faith healers ☐
 - Combination of ☐
 - Others ☐
- Secondary preference?
- Medical Doctor ☐
 - Traditional medicine ☐
 - Faith healers ☐
 - Combination of ☐
 - Others ☐

SECTION 6: PERCEPTION ABOUT MARITAL OUTCOMES

53. If a female cannot have a baby, do you think this is grounds for divorce?
- Yes ☐
 - No ☐
 - I don't know ☐
54. If a female cannot have children, do you think this is a valid reason for the man to have a second wife?
- Yes ☐
 - No ☐
 - I don't know ☐
55. If a male cannot have children, do you think this is grounds for divorce?
- Yes ☐
 - No ☐
 - I don't know ☐

56. If a couple cannot have a child, do you think they should adopt?
- Yes ☐
 - No ☐
 - I don't know ☐
57. Who is usually blamed for infertility in the society?
- Husband ☐
 - Wife ☐
 - Both ☐
 - Neither ☐
 - I don't know ☐
58. Do you think it is socially acceptable to have a test-tube baby?
- Yes ☐
 - No ☐
 - I don't know ☐
59. Do you think fertility drugs are socially acceptable?
- Yes ☐
 - No ☐
 - I don't know ☐

Section 7: RESPONDENT'S PERCEPTION ABOUT INFERTILITY

Statement	Yes	No	Don't know
60. Witchcraft is the major cause of infertility.			
61. Health education on sexual life for teenagers is the only way to prevent infertility			
62. Men are solely to be blamed for infertility			
63. Women are solely to be blamed for infertility			
64. Native concoctions/herbs can treat infertility			

65. Which of the following is the primary solution to infertility?
- Spiritual help
 - medical help
 - Traditional/Herbal
 - I don't know ☐
66. In your opinion what should happen to a union in the community where the couple is childless?
- Dissolutions
 - Continue in union
 - Continue and Adopt a child
 - I don't know ☐

SECTION 8: RELIGION AND INFERTILITY

67. Do you attend religious gatherings?
- Yes ☐

- b. No ☐
68. How often are these organised?
- a. Once a week ☐
 - b. Twice a week ☐
 - c. Three to four times a week ☐
 - d. Every day of the week ☐
 - e. Other ☐ specify
69. How often do you attend these gatherings?
- a. Once a week ☐
 - b. Twice a week ☐
 - c. Three to four times a week ☐
 - d. Every day of the week ☐
 - e. Other ☐ specify
70. What are the religious rituals that are mostly prescribed in your religion? (Tick All that apply)
- a. Fasting ☐
 - b. Prayers services ☐
 - c. Reading religious text ☐
 - d. Prayer camps ☐
 - e. Revivals ☐
 - f. Other ☐ specify
71. Which ones do you engage in? (Tick All that apply)
- a. Fasting ☐
 - b. Reading religious text ☐
 - c. Prayers services ☐
 - d. Prayer camps ☐
 - e. Revivals ☐
 - f. Other ☐ specify
72. How many times do you engage in Salat (Obligatory prayer) in a day ...
73. How many times do you engage in Dua (Private Prayer) in a day
74. Should these rituals be intensified when faced with challenges like delayed birth?
- a. Yes ☐
 - b. No ☐
 - c. Don't know ☐
75. Apart from your religious denomination, do you participate in religious activities organised by other denominations? If No skip to question 75
- a. Yes ☐
 - b. No ☐
76. If yes, how often?
- a. Once a week ☐
 - b. Twice a week ☐
 - c. Three to four times a week ☐
 - d. Every day of the week ☐
 - e. Other ☐ specify
77. Do you join online religious gatherings that are not organised by your main denomination?
- a. Yes ☐
 - b. No ☐ If No skip to question 78

78. If yes, how many?

- a. One ☐
- b. Two ☐
- c. Three or more ☐

76b. If yes how often?

- a. Everyday ☐
- b. Two to three times a week ☐
- c. Four to six times a week ☐
- d. Once a week ☐
- e. Once a month ☐



Items for both basic and interreligious versions-(CRSI-20)		Measures			
1. How often do you think about religious issues?	very often	often	occasionally	rarely	never
2. How often do you keep yourself informed about religious questions through radio, television, internet, newspapers, or books?					
3. How often do you pray spontaneously when inspired by daily situations?					
4. How often do you experience situations in which you have the feeling that God or something divine intervenes in your life or —allows for an intervention in your life?					
5. How often do you experience situations in which you have the feeling that God or something divine wants to communicate or to reveal something to you? or lets something be communicated or revealed					
6. How often do you experience situations in which you have the feeling that God or something divine is present?					
7. How interested are you in learning more about religious topics?	very much	some what	undecided	not really	not at all
8. To what extent do you believe that God or something divine exists?					
9. To what extent do you believe in an afterlife—e.g. immortality of the soul, resurrection of the dead or reincarnation?					
10. In your opinion, how probable is it that a higher power really exists					
11. How important is it to take part in religious services?					
12. How important is it for you to be connected to a religious community?					
13. How important is personal prayer for you?					
14. How often do you take part in religious services?	more than once a week or once a week	one or three times a month	a few times a year	less often	never
15. How often do you pray?					

82. Have you heard of Assisted Reproductive Technology (ART)?

- a. Yes ☐
- b. No ☐ If No skip to Question 84

83. If yes, can you name any ART you know?

- a. Egg freezing ☐
- b. Sperm donation ☐
- c. Egg donation ☐
- d. Artificial insemination ☐
- e. Other ☐ specify
- f. Don't know ☐

84. Which ones does your religion support?

- a. Egg freezing ☐
- b. Sperm donation ☐
- c. Egg donation ☐
- d. Artificial insemination ☐
- e. Other ☐ specify
- f. None ☐
- g. I don't know ☐

85. Has your religion's leadership discussed any ART with you?

- a. Yes ☐
- b. No ☐ If No skip to Question 87

86. If yes, which ones?

- a. Egg freezing ☐
- b. Sperm donation ☐
- c. Egg donation ☐
- d. Artificial insemination ☐
- e. Other ☐ specify

87. Should a person's inability to conceive affect their relationship with their maker?

- a. Yes ☐
- b. No ☐
- c. I don't know ☐ If No/ don't know skip to question 89

88. If yes, how? (Tick all that apply)

- a. Increase your faith.
- b. Increase religious attendance/participation of religious gatherings.
- c. Increased participation of religious rituals
- d. Decreased your faith.
- e. Decreased religious attendance/ participation of religious gatherings.
- f. Decreased participation of religious rituals
- g. Other ☐ specify

89. Do you think religion can help with infertility?

- a. Yes ☐
- b. No ☐ If No skip to Question 87

90. If yes, in which way does religion help?

- a. Offers solution to child birth ☐
- b. Gives hope ☐
- c. Helps to deal with depression ☐
- d. Other ☐ specify

91. Do you feel that the solution to infertility lies in another religious body or denomination?
- a. Yes ☐
 - b. No ☐
 - c. I don't know ☐
92. Which of the following is a solution to infertility?
- a. Religion ☐
 - b. Surrogacy ☐
 - c. Adoption ☐
 - d. Other ☐ specify
 - e. I don't know ☐
93. Are you aware of any herbalist in this locality that treat infertility?
- a. Yes ☐
 - b. No ☐
 - c. I don't know ☐

Thank you so much for your time and for providing valuable insights. Before we conclude, I have one final question.

94. Would it be possible to reach out to you again at a later date for a follow-up IDI?
- d. Yes ☐
 - e. No ☐

We greatly value your expertise and believe that your insights would be crucial in further enhancing our understanding of the subject matter. If you're open to participating in the follow-up IDI, I will ensure it's scheduled at your convenience and respect any time constraints you may have.

Thank you for your participation.



Appendix B
In-depth interview guide for religious leaders

RELIGIOUS LEADER

Hello...my name is _____ I am a student of the Regional Institute for Population Studies (RIPS), University of Ghana, Legon currently working on my PhD thesis on the topic above.

The purpose of this discussion is to understand how religion or religious practices shapes treatment seeking for infertility. None of your answers will be available to anyone at any time. All the information you give will be kept private and your name will not be put anywhere on this tool. If you decide not to participate in this survey, you may withdraw at any point of the interview. However, I really need your honest response to better understand how religious practices help in dealing with infertility and how it influences its management.

The results of the study would hopefully improve future management of infertility, refine health programs and policies to benefit society in general.

Socio-demographic Information

1. Age
2. Years in service/practice
3. Years in marriage
4. Religion
5. Religious denomination
6. No. of children
7. Ages of children

Knowledge about Infertility

8. What in your view is infertility? (Probe for what it is, its causes, solutions, etc...)
9. How often are you confronted with issues of infertility in your congregation/worshippers/followers?
10. Tell me about the religious doctrines, texts, or traditions that address issues related to infertility.

Treatment Options for Infertility

11. Who usually presents the case to you? (The husband or wife or others (Probe) Why do you think this is so? (Probe for culture, fertility blame, stigma, etc.).

12. Do you engage the services of a healthcare provider for your congregants? (Probe whether they have a specific person they refer the worshipper/follower/religious member to, do they ensure they have seen the medical practitioners for treatment?)

Religion and Infertility

13. How does religion help in solving the issue of infertility? (Probe for intensity of religious activity or duration;)
14. How do congregants/followers cope with delayed fertility? (The role of religious coping strategies in dealing with the emotional and psychological challenges of infertility)
15. Are there instances where your members feel the solution to their infertility lies in another religious body or denomination?
16. Are there any religious/spiritual rituals that you recommend for infertile couples? (Probe for fasting, religious attendance, prayer, alms giving etc.).

Views on Alternative Means for Childbearing/Rearing

17. What is the stance of your religion/religious affiliation on Assisted Reproductive Technology (ART) (Egg freezing, sperm or egg donation)? What about surrogacy, and adoption?
18. What are your personal thoughts on ART?
19. Have there been any specific religious teachings or guidance that have shaped your views on assisted reproductive technologies, such as in vitro fertilization (IVF), surrogacy, or other treatments?
20. How do you navigate the potential conflicts or tensions between your religious beliefs and your congregants' pursuit of infertility treatments?
21. Is there anything you would like to tell me?

Thank you for your participation.



Appendix C
In-depth interview guide for health care workers

THE HEALTHCARE PROVIDER

Hello...my name is _____ I am a student of the Regional Institute for Population Studies (RIPS), University of Ghana, Legon currently working on my PhD thesis on the topic above.

The purpose of this discussion is to understand how religion or religious practices shapes treatment seeking for infertility. None of your answers will be available to anyone at any time. All the information you give will be kept private and your name will not be put anywhere on this tool. If you decide not to participate in this survey, you may withdraw at any point of the interview. However, I really need your honest response to better understand how religious practices help in dealing with infertility and how it influences its management.

The results of the study would hopefully improve future management of infertility, refine health programs and policies to benefit society in general.

Socio-demographic Information

1. Age
2. Age at first union
3. Years in marriage
4. Religion
5. Religious denomination
6. Type of health worker
7. Years in practice
8. Institution of practice

General Information about Infertility

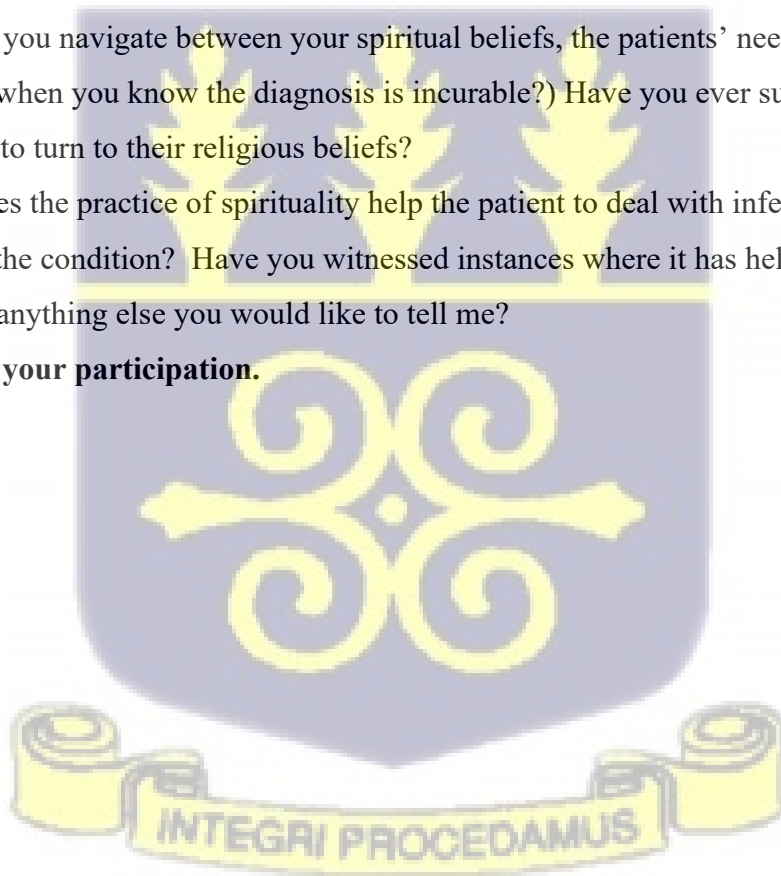
9. What is infertility?
10. How do you arrive at a diagnosis (probe for when clients usually present, no. of visits, labs, etc.)
11. What in your opinion are usually the Causes? (Probe whether causes need diagnosing one/both spouses).
12. What is the percentage of infertile people you see at your clinic?
13. How many of these are due to preventable causes? How many are incurable?
14. What are the gender dynamics of the patients you see?

15. Can you describe the pool of patients you see with infertility (probe for ethnic and religious dynamics)
16. Have you ever told a client that they will be unable to give birth based on the diagnosis? If yes, can you describe the state of couples when you broke the news?
17. What are the implications of this diagnosis on the patient?

Treatment, Spirituality, and Effects

18. How is infertility treated? (Probe for team members, doctors, nurses, counselling, etc.)
19. What are some of the things that can hinder the treatment of infertility? (Probe for finances, personal reasons, religious reasons etc)
20. How does a patient's religious practice hinder a solution to infertility? (Surrogacy, test tube babies, egg freezing, etc.) Which solutions have religions been against the most? And why?
21. How do you support your patient spiritually? (Probe for referrals to a chaplain or specific centres or rituals like prayer etc.)
22. How do you navigate between your spiritual beliefs, the patients' needs, and science? (Probe, when you know the diagnosis is incurable?) Have you ever suggested to patients to turn to their religious beliefs?
23. How does the practice of spirituality help the patient to deal with infertility? Can it worsen the condition? Have you witnessed instances where it has helped?
24. Is there anything else you would like to tell me?

Thank you for your participation.



Appendix D
Ethical clearance



UNIVERSITY OF GHANA
ETHICS COMMITTEE FOR THE HUMANITIES (ECH)

P. O. Box LG 74, Legon, Accra, Ghana

My Ref. No: ECH.198/22-23

June 19, 2023

Mrs. Naa Adjeley Mensah
Regional Institute for Population Studies
University of Ghana
Legon

ETHICAL CLEARANCE
(ECH 198/ 22-23)

The Ethics Committee for the Humanities (ECH) conducted a full board review and approved your protocol titled:

RELIGION AND COMMUNITY PERCEPTIONS ABOUT INFERTILITY IN ABLEKUMA SOUTH, ACCRA

PRINCIPAL INVESTIGATOR: MRS. NAA ADJELEY MENSAH

Please note that the final review report must be submitted to the Committee at the completion of the study. Your research records may be audited at any time during or after the implementation. Any modification of this research project must be submitted to ECH for review and approval prior to implementation.

Please report all serious adverse events related to this study to ECH within seven (7) days verbally and in writing within fourteen (14) days.

This certificate is valid until June 18, 2024. You are required to submit annual reports for continuing review.

Please accept my congratulations.

Yours Sincerely,

Professor C. Charles Mate-Kole
ECH Chair

Cc: Dr. Adriana Andrea Ewurabena Biney, Regional Institute for Population Studies, UG
Prof. Stephen Owusu Kwankye, Regional Institute for Population Studies, UG
Very Rev. Dr. Abraham Boateng, Trinity Theological Seminary, UG

Tel: +233 30 393 3866

Email: ech@ug.edu.gh

In case of reply the number
And the date of this
Letter should be quoted

My Ref. No. *KBTH/MS/193/23*
Your Ref. No.



KORLE BU TEACHING HOSPITAL
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1st October, 2023

NAA ADJELEY MENSAH
PHD CANDIDATE
REGIONAL INSTITUTE FOR POPULATION STUDIES (EIPS)
UNIVERSITY OF GHANA
LEGON

**INSTITUTIONAL APPROVAL: KORLE BU TEACHING HOSPITAL-SCIENTIFIC
AND TECHNICAL COMMITTEE/INSTITUTIONAL REVIEW BOARD (KBTH-
STC/IRB/000152/2023**

Following approval of your study entitled "Religion and Community Perceptions about Infertility in Ablekuma South, Accra" by the Korle Bu Teaching Hospital-Scientific and Technical Committee/Institutional Review Board.

I am pleased to inform you that institutional approval has been granted for the conduct of your study in Korle Bu Teaching Hospital.

Please contact the Heads of Departments to discuss the commencement date of the study.

Please note that, this institutional approval is rendered invalid if the terms of the Institutional Reviewed Board/Scientific and Technical Committee approval are violated.

Sincere regards,

Dr. Frank Owusu-Sekyere
Director of Medical Affairs

Cc: The Chief Executive, Korle Bu



In case of reply the number
And the date of this
Letter should be quoted

My Ref. No. *KBTH/IRB/GS/23*
Your Ref. No.



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13th September, 2023

NAA ADJELEY MENSAH
PHD CANDIDATE
REGIONAL INSTITUTE FOR POPULATION STUDIES (RIPS)
UNIVERSITY OF GHANA
LEGON

SCIENTIFIC AND TECHNICAL COMMITTEE APPROVAL PROTOCOL
IDENTIFICATION NUMBER: KBTH-STC 000152/2023

The Korle Bu Teaching Hospital Scientific and Technical Committee (KBTH-STC), on 13th September, 2023, approved your submitted study protocol.

TITLE OF PROTOCOL: "Religion and Community Perceptions about Infertility in Ablekuma South, Accra" for Review and Subsequent approval by your Committee"

This approval requires that you **forward your approved document to Korle Bu Teaching Hospital –Institutional Review Board (KBTH-IRB) for the ethical aspect of the proposal to be assessed before the project can be initiated.**

PRINCIPAL INVESTIGATOR: NAA ADJELEY MENSAH

This STC approval is valid till 30th June, 2024

You may, however, request extension of the approval period, or renewal as the case may be, should the study extend beyond the stated period.

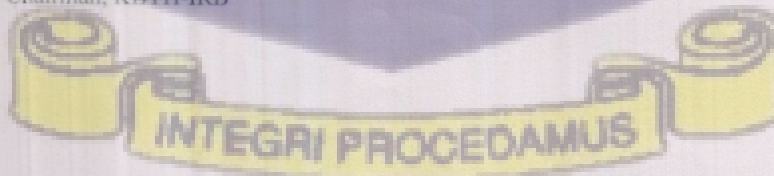
Upon completion, you are required to submit a final report on the study to the STC. This is to enable the STC ensure **among others that, the project has been implemented as per the approved protocol.** You are also required to inform the KBTH-STC and Research Directorate of any publications that may emanate from the research findings.

Kindly note that, should the need arise, the KBTH-STC or IRB may institute appropriate measures to satisfy itself that study is being conducted according to the highest scientific and ethical standards.

Please note that any modification to the study protocol without Scientific Technical Committee (STC) approval renders this approval invalid.

me
Prof. G. Obeng Adjei
Chairman, KBTH-STC

Cc: The Chairman, KBTH-IRB



In case of reply the number
And the date of this
Letter should be quoted.

My Ref. No. KBTH/IRB/193/23
Your Ref. No.



KORLE BU TEACHING HOSPITAL
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Fax: +233 302 667759
Email: Info@kbth.gov.gh
pr@kbth.gov.gh
Website: www.kbth.gov.gh

28th September, 2023

NAA ADJELEY MENSAH
PHD CANDIDATE
REGIONAL INSTITUTE FOR POPULATION STUDIES (RIPS)
UNIVERSITY OF GHANA
LEGON

**RELIGION AND COMMUNITY PERCEPTIONS ABOUT INFERTILITY IN
ABLEKUMA SOUTH, ACCRA**

KBTH-IRB 000152/2023

Investigator: NAA ADJELEY MENSAH

The Korle Bu Teaching Hospital Institutional Review Board (KBTH IRB) reviewed and granted approval to the study entitled: "Religion and Community Perceptions about Infertility in Ablekuma South, Accra"

Please note that the Board requires you to submit a final review report on completion of this study to the KBTH-IRB.

Kindly, note that, any modification/amendment to the approved study protocol without approval from KBTH-IRB renders this certify invalid.

Please report all serious adverse events related to this study to KBTH-IRB within seven days verbally and fourteen days in writing.

This IRB approval is valid till 31st August, 2024. You are to submit annual report for continuing review.

Sincere regards,

DR. DANIEL ANKRAH
VICE CHAIR (KBTH-IRB)
FOR: CHAIR (KBTH-IRB)

Cc: The Chief Executive Officer, KBTH
The Director of Medical Affairs, KBTH



Appendix E
Consent form

UNIVERSITY OF GHANA



Official Use only
Protocol number

Ethics Committee for Humanities (ECH)

PROTOCOL CONSENT FORM -SURVEY

**Section A- BACKGROUND
INFORMATION**

Title of Study:	Religion and community perceptions about infertility in Ablekuma South, Accra.
Principal Investigator:	NAA ADJELEY MENSAH
Certified Protocol Number	ECH198/22-23

**Section B– CONSENT TO PARTICIPATE IN
RESEARCH**

General Information about Research

My name is Naa Adjeley Mensah from the Regional Institute for Population Studies, University of Ghana, Legon. I am conducting a study in your district on the topic “Religion and community perceptions about Infertility in Ablekuma South, Accra”. This study will advance our understanding of Religion and community perceptions about infertility. You are being asked to participate because you are a resident of Ablekuma sub- metropolitan area. We are inviting ever married people (men and women) aged 25 and above in these households to participate in the study. This consent form will give you the information you will need to understand why this study is being done and why you are being invited to participate. It will also describe what you will be asked to do, any known risks, inconveniences, or discomforts that you may have while participating. We encourage you to take some time to think this over. We also encourage you to ask questions now and at any time. If you decide to participate, you will be asked to sign two copies of this form and it will be a record of your agreement to participate. You will be given a copy of this form.

We may conduct further in-depth interviews with some respondents after this interview at another date to fully understand specific issues and findings from this survey. We may contact you to follow up for further interview in the future, but only if you are willing. No research activity is to be conducted until you have had an opportunity to review this consent form, ask any questions you may have, and sign this document if applicable. If you agree to take part in this study, you will be asked to participate in an interview. The interview will collect information about your background, your marital history, your pregnancy history, religious activities, perceptions about infertility and healthcare preferences, and similar topics. We will

try to hold the interview in a part of your residence where other people cannot hear you or at a secure nearby location. We think the interview will take about 30 minutes.

Benefits/Risks of the Study

There will be no direct benefits to subjects for participating in this research. However, the knowledge gained from the study may help improve future management of infertility, refine health programs and policies to benefit society in general. If you agree to participate in this study, the main risk is that someone other than the research team might learn what you answered. The sections that follow will explain what we do to try to reduce the risk that someone else might learn your responses. Some of the possible inconveniences are the time it takes to complete the interview – it will take 30 minutes. You do not have to answer any question that makes you feel uncomfortable, and you can stop the interview at any time.

Confidentiality

The following procedures will be used to protect the confidentiality of your data. The researchers will take all reasonable steps to make sure that your name is kept secret and that you are protected from the risk of someone learning what your answers were. Your name and any other information that might be used to identify you will be kept in a locked file. Nobody except the researchers will be able to access the information and see your responses. For the analysis, your name and the name of the community where you live will be removed and replaced with numbers, so that anyone using the information will not be able to identify you, your family, or anyone else. All electronic files will be stored on computers that have password protection to prevent access by unauthorized users. Data that will be shared with others will be coded as described above to help protect your identity. At the conclusion of this study, the researchers may publish their findings. Information will be presented in summary format and you will not be identified in any publications or presentations.

You should also know that the Ethics Committee for the Humanities of the University of Ghana may inspect study records as part of its auditing program, but these reviews will only focus on the researchers and not on your responses or involvement. The IRB is a group of people who review research studies to protect the rights and welfare of research participants.

Compensation

You will not receive any cash or reward as payment to be in this study.

Withdrawal from Study

You do not have to be in this study if you do not want to. If you agree to be in the study, but later change your mind, you may drop out at any time. There are no penalties or consequences of any kind if you decide that you do not want to participate. You do not have to answer any question that you do not want to answer.

Contact for Additional Information

Take as much time as you like before you make a decision to participate in this study. We will be happy to answer any question you have about this study. If you have further questions

about this study, want to voice concerns or complaints about the research or if you have a research-related problem, you may contact the student investigator, Naa Adjeley Mensah at adjeleybisa@gmail.com or 0244856060

If you have any questions about your rights as a research participant in this study you may contact the Administrator of the Ethics Committee for Humanities, ISSER, University of Ghana at ech@ug.edu.gh or 00233- 303-933-866.

Section C- PARTICIPANT
AGREEMENT

"I have read or have had someone read all of the above, asked questions, received answers regarding participation in this study, and am willing to give consent for me, my child/ward to participate in this study. I will not have waived any of my rights by signing this consent form. Upon signing this consent form, I will receive a copy for my personal records."

Name of Participant

Signature or mark of Participant

Date

If participant cannot read and or understand the form themselves, a witness must sign here:

I was present while the benefits, risks and procedures were read to the volunteer. All questions were answered and the volunteer has agreed to take part in the research.

Name of witness

Signature of witness / Mark

Date

I certify that the nature and purpose, the potential benefits, and possible risks associated with participating in this research have been explained to the above individual.

Name of Person who Obtained Consent

Signature of Person Who Obtained Consent

Date

UNIVERSITY OF GHANA



Official Use only
Protocol number

Ethics Committee for Humanities (ECH)

PROTOCOL CONSENT FORM QUALITATIVE

**Section A- BACKGROUND
INFORMATION**

Title of Study:	Religion and community perceptions about infertility in Ablekuma South, Accra.
Principal Investigator:	NAA ADJELEY MENSAH
Certified Protocol Number	ECH198/22-23

**Section B- CONSENT TO PARTICIPATE IN
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General Information about Research

My name is Naa Adjeley Mensah from the Regional Institute for Population Studies, University of Ghana, Legon. I am conducting a study in your district on the topic “Religion and community perceptions about Infertility in Ablekuma South, Accra”. This study will advance our understanding of Religion and community perceptions about infertility. This consent form will give you the information you will need to understand why this study is being done and why you are being invited to participate. It will also describe what you will be asked to do, any known risks, inconveniences, or discomforts that you may have while participating. We encourage you to take some time to think this over. We also encourage you to ask questions now and at any time. If you decide to participate, you will be asked to sign two copies of this

form and it will be a record of your agreement to participate. You will be given a copy of this form.

If you agree to take part in this study, you will be asked to participate in an interview. The interview will collect some background information, your marital history, your pregnancy history, religious activities, perceptions about infertility and healthcare preferences, and similar topics.

We will try to hold the interview in a part of your residence where other people cannot hear you or at a secure nearby location. The interview will be recorded with your permission and will take about 45-60 minutes. No research activity is to be conducted until you have had an opportunity to review this consent form, ask any questions you may have, and sign this document if applicable.

Benefits/Risks of the Study

There will be no direct benefits to subjects for participating in this research. However, the knowledge gained from the study may help improve future management of infertility, refine health programs and policies to benefit society in general.

If you agree to participate in this study, the main risk is that someone other than the research team might learn what you answered. The sections that follow will explain what we do to try to reduce the risk that someone else might learn your responses. Some of the possible inconveniences are the time it takes to complete the in-depth interview –about 45-60 minutes, and discomfort that you might feel answering some questions. You do not have to answer any question that makes you feel uncomfortable, and you can stop the interview at any time.

Confidentiality

The following procedures will be used to protect the confidentiality of your data. The researchers will take all reasonable steps to make sure that your name is kept secret and that you are protected from the risk of someone learning what your answers were. Your name and any other information that might be used to identify you will be kept in a locked file. Nobody except the researchers will be able to access the information and see your responses. For the analysis, your name and the name of the community where you live will be removed and replaced with numbers, so that anyone using the information will not be able to identify you, your family, or anyone else. All electronic files will be stored on computers that have password protection to prevent access by unauthorized users. Data that will be shared with others will be coded as described above to help protect your identity. At the conclusion of this study, the researchers may publish their findings. Information will be presented in summary format and you will not be identified in any publications or presentations.

You should also know that the Ethics Committee for the Humanities of the University of Ghana may inspect study records as part of its auditing program, but these reviews will only focus on the researchers and not on your responses or involvement. The IRB is a group of people who review research studies to protect the rights and welfare of research participants.

Compensation

You will not receive any cash or reward as payment to be in this study. However, you will be given a bar of soap after the interview.

Withdrawal from Study

You do not have to be in this study if you do not want to. If you agree to be in the study, but later change your mind, you may drop out at any time. There are no penalties or consequences of any kind if you decide that you do not want to participate. You do not have to answer any question that you do not want to answer.

Contact for Additional Information

Take as much time as you like before you make a decision to participate in this study. We will be happy to answer any question you have about this study. If you have further questions about this study, want to voice concerns or complaints about the research or if you have a research-related problem, you may contact the student investigator, Naa Adjeley Mensah at adjeleybisa@gmail.com or 0244856060

If you have any questions about your rights as a research participant in this study you may contact the Administrator of the Ethics Committee for Humanities, ISSER, University of Ghana at ech@ug.edu.gh or 00233- 303-933-866.

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Name of Participant

Signature or mark of Participant

Date

If participant cannot read and or understand the form themselves, a witness must sign here:

I was present while the benefits, risks and procedures were read to the volunteer. All questions were answered and the volunteer has agreed to take part in the research.

Name of witness

Signature of witness / Mark

Date

I certify that the nature and purpose, the potential benefits, and possible risks associated with participating in this research have been explained to the above individual.

Name of Person who Obtained Consent

Signature of Person Who Obtained Consent

Date



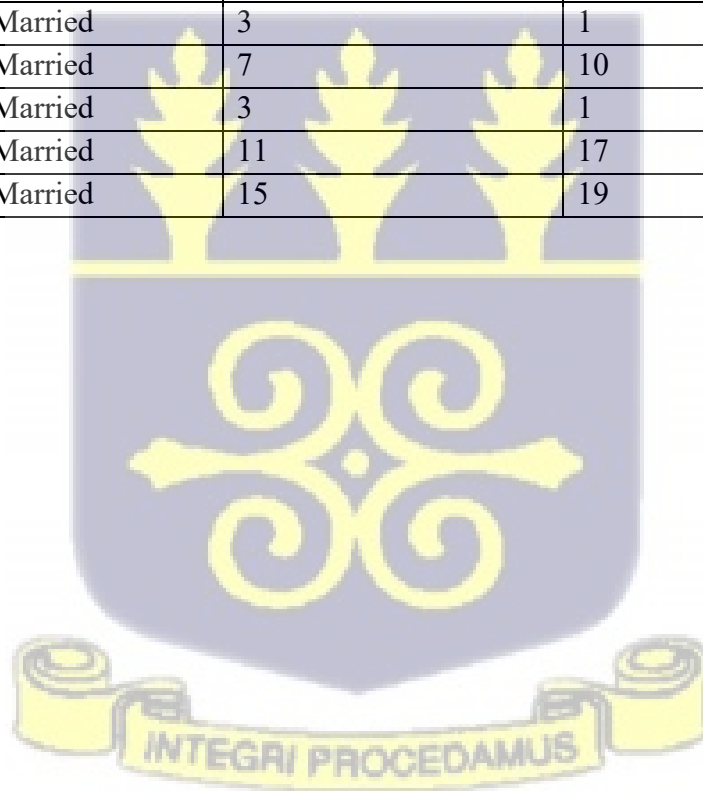
Appendix F
Detailed profile of religious leaders

Variables	Age	Sex	Marital status	Duration of marriage	Years of service	Number of children	Religion
Respondent 1	47	Male	Married	20	14	2	Anglican
Respondent 2	49	Female	Married	17	23	2	Presbyterian
Respondent 3	26	Male	Not Married	-	10	-	Islam
Respondent 4	47	Female	Not Married	-	17	-	Catholic
Respondent 5	65	Female	Married	40	20	3	Charismatic
Respondent 6	62	Male	Married	38	35	4	Charismatic
Respondent 7	58	Female	Married	29	20	7	Spiritual
Respondent 8	52	Female	Married	30	7	6	Traditionalist
Respondent 9	62	Male	Married	40	8	6	Islam
Respondent 10	55	Male	Not Married	-	19	-	Catholic
Respondent 11	46	Male	Married	10	20	2	Charismatic
Respondent 12	66	Male	Married	29	31	6	Islam
Respondent 13	70	Male	Married	40	7	4	Islam
Respondent 14	67	Male	Married	31	34	3	Methodist
Respondent 15	49	Male	Married	22	23	3	Traditional/Spiritualist
Respondent 16	51	Male	Married	16	11	3	Traditionalist/Wulomo
Respondent 17	29	Male	Married	1	4	1	Pentecost



Appendix G
Detailed profile for healthcare workers

Variables	Age	Sex	Marital status	Duration of marriage	Years of service	Number of children	Religion
Respondent 1	53	Male	Married	15	20	1	Pentecost
Respondent 2	49	Female	Married	18	20	2	Charismatic
Respondent 3	38	Female	Married	10	10	1	Catholic
Respondent 4	51	Male	Married	19	18	3	Pentecost
Respondent 5	34	Male	Married	6	1	2	Catholic
Respondent 6	37	Male	Married	3	1	1	Charismatic
Respondent 7	39	Male	Married	7	10	3	Pentecost
Respondent 8	33	Female	Married	3	1	0	Catholic
Respondent 9	46	Male	Married	11	17	3	Charismatic
Respondent 10	51	Male	Married	15	19	3	Catholic



Appendix H
Test for Multicollinearity

Table 1 Test results for multicollinearity for first outcome (Treatment seeking)

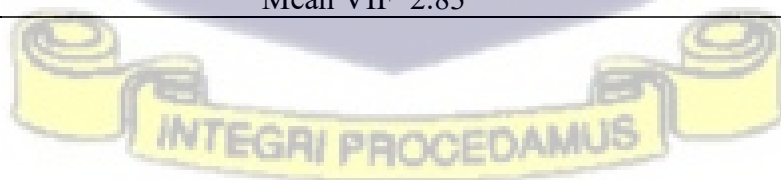
Variable	VIF	1/VIF
Religiosity		
Highly religious (RC)		
Less religious	2.6	0.384764
Moderately religious	2.23	0.449378
Locality		
Mamprobi (RC)		
Korle	1.9	0.527218
Chorkor	1.8	0.554273
Sex		
Male (RC)		
Female	2.81	0.355268
Age		
45+ (RC)		
25 - 34	2.28	0.438135
35 - 44	2.09	0.478411
Age at first marriage		
15 - 22 (RC)		
25 - 30	3.14	0.318516
31+	2.07	0.483378
Number of children		
0 (RC)		
1 - 3	3.16	0.316327
4+	1.81	0.551655
Occupation		
Not working (RC)		
Sales/service	3.24	0.308943
Professional/Technical	2.07	0.482955
Skilled/unskilled manual	2.63	0.379657
Educational status		
Tertiary (RC)		
None	1.74	0.5757
Basic	4.86	0.205812
secondary	3.01	0.33183
Marital status		
Not in union (RC)		
In union	5.14	0.194726
Status of Bride wealth		
Paid (RC)		
Not paid	3.81	0.262612
Ethnicity		
Others (RC)		
Ga/Dangme	3.67	0.272833

Akan	2.5	0.400519
Religion help infertility		
No (RC)		
Yes	5.46	0.183123
Blame for infertility		
Other		
Wife	5.1	0.196038
Purpose of marriage		
Companionship/others		
Procreation	2.18	0.459154
Infertility is a disease		
No		
Yes	1.76	0.568199
Mean VIF 2.92		

Table 2 Test results for multicollinearity for second outcome (Primary solution)

Variable	VIF	1/VIF
Religiosity		
Highly religious (RC)		
Less religious	2.68	0.37324
Moderately religious	2.26	0.44203
Locality		
Mamprobi (RC)		
Korle	2.14	0.46833
Chorkor	2.03	0.49223
Sex		
Male (RC)		
Female	2.98	0.33587
Age		
45+ (RC)		
25 - 34	2.4	0.41723
35 - 44	2.1	0.47617
Age at first marriage		
15 - 22 (RC)		
25 - 30	3.2	0.31295
31+	2.11	0.47398
Number of children		
0 (RC)		
1 - 3	4.85	0.20617
4+	2.44	0.409
Occupation		
Not working (RC)		
Sales/service	3.33	0.30026

Professional/Technical	2.2	0.45373
Skilled/unskilled manual	2.68	0.37292
Educational status		
Tertiary (RC)		
None	1.74	0.57377
Basic	4.9	0.20407
secondary	3.01	0.3327
Marital status		
Not in union (RC)		
In union	5.23	0.19133
Status of Bride wealth		
Paid (RC)		
Not paid	3.84	0.26013
Ethnicity		
Others (RC)		
Ga/Dangme	3.71	0.26973
Akan	2.47	0.40469
Religion help infertility		
No (RC)		
Yes	1.32	0.75633
Blame for infertility		
Other		
Wife	5.13	0.19507
Infertility is a disease		
No		
Yes	1.77	0.56589
Heard of ART		
No (RC)		
Yes	1.92	0.51967
Religion Support ART		
No (RC)		
Yes	1.47	0.68232
Witchcraft major cause		
No(RC)		
Yes	1.96	0.51058
Experience of delayed birth		
No		
Yes	1.92	0.51967
Mean VIF 2.83		



Appendix I Global, organizing and basic themes from perspectives of religious leaders

Global theme	Organizing theme	Basic theme	Description	Sample quotes
Perceptions about infertility		Understanding of the concept	How religious leaders understand and define infertility	“It is biologically when a woman cannot conceive or when the man cannot produce enough sperms to fertilize the woman’s egg. That’s how I will term infertility” (Rel. leader Male Pentecost)
		Perceived causes Spiritual	Causes of infertility which include physiological such as hereditary, lifestyle, cultural etc and spiritual causes	“Then they would abort it using herbs and concoctions. Sometimes not once, but multiple times. Some people are destined to have one or two children so if you don’t exercise patience and jeopardize your chances by aborting all, then that is the end”. Religious leader, Female Traditional Religion (Spiritualist) “So sometimes someone may have lost her womb spiritually without knowing. You would sometimes wonder that newlywed couples after marriage are expected to have children, but the children will not come. It could be that a spell was cast on the wedding cake, so many a time when you are going to get married you should be steadfast in prayer” Religious leader, Female, Charismatic.
	Solutions to infertility	Herbal/Orthodox Medicine	Drugs that are available both traditional and orthodox used for the treatment of infertility	There is a solution, if you see the doctor. When it comes to the problem both of the couple have to seek medical assistance, most often the blame is put on the women. So, when seeking for medical attention there is the need for both male and female to go check.” Religious leader, Male Methodist
		Both Spiritual and Hospital	A combination of care using interventions from both religious and hospital.	“So, if after consultation, I see that it is spiritual it will be dealt with as such. After that, I will be directed in the spirit to know the kind of herbs to prepare for the person. So, after drinking the herbs, God will grant healing.” Religious leader, Male Traditional Religion (Spiritualist).

Global theme	Organizing theme	Basic theme	Description	Sample quotes
Perceptions about infertility	Solutions to infertility	Adoption	Legally taking a child that is not biologically yours and nurturing the child as your own	“So when you adopt an orphan and you take care of him or her, the blessing you get according to the Qur’an it cannot be measured.” Religious leader, Male Islamic religion (Assist. Imam).
		Religious solutions	Religious solutions such as rituals including prayer, faith etc and the psychological benefit that religion provides in the influence in the management of infertility	The basic treatment for infertility is God, because He is the one who gives children. But God has also provided knowledge for us through food and medicine, which are able to correct some of these defects. And also psychologically, if the body is not relaxed, it cannot reproduce. So, one has to relax the brain and the body.” Religious leader, Female, Presbyterian.
	Perceptions about ART	Knowledge about ART	How religious leaders understand ART and the types of ART they are aware of	“Oh well, I have not witnessed such a thing before and I have not heard that someone used that method to have a child. So, all in all, we always wait on God, when He gives to you fine, if it doesn’t come too, we continue to hope for it to come” Religious leader, Male Traditional religion (Spiritualist)
		Stance on ART	What is their viewpoint regarding ART	“Well, the church has taken a stance on that and that is my position as well. Errm, you know children are gifts that God alone endows humanity or couples with so it must not be interfered with. The process must not be interfered with. If you know what goes into us as human beings, think of it that, this small clot will grow into the embryo and eventually [a] human”. Religious leader, Male Catholic



Appendix J
Global, organizing and basic themes from perspectives of healthcare workers (OBGYN)

Global theme	Organizing theme	Basic theme	Description	Sample quotes
Perceptions about infertility	Solutions offered/accepted	Adoption	Legally taking a child that is not biologically yours and nurturing the child as your own.	"Usually the adoption, from my little experience you resort to that as the last. When you have tried everything and then we suggest. Or maybe if somebody comes and has done IVF one, two, three and all that. When you are offering surrogacy you can also chip in adoption, so that they also know that it is an option." R5 Male, OBGYN
		Medical solutions	these include medical counselling, drugs and technologies used to augment conception or assist in conception	"I have never told anyone that this is the end; I always give them the option of IVF". R7 Male, OBGYN
	Barriers to solutions offered/accepted	Couple factors	Issues with regards with the infertile persons finding it difficult to accept the treatment offered	"I think the donor eggs is more difficult for most women to accept and I think it's just that whole sense of not being my child. Yes, so a lot of them are resistant to it, but those who have the money would insist that they would try. That we should try with their eggs and let's see, if it fails then". R3 Female OBGYN
		Financial Constraints	Barrier in relation to cost of treatment	"In our environment, the commonest barrier is cost, I think infertility is not even covered under NHIS. So your tests will come with a lot of costs, just to know the diagnosis of what is causing it comes with a lot of costs. Before you even get to the stage of saying ok let's do IVF". R3, Female

Global theme	Organizing theme	Basic theme	Description	Sample quotes
Perceptions about infertility	Barriers to solutions offered/accepted	Socio-cultural perceptions	Societal and cultural perceptions surrounding fertility treatments.	"Yes, so I think apart from money, it is due to the socio-cultural misconception and perception of it. Some people think that the IVF babies have issues. Maybe a higher increase of let's say or developmental issue or autism, hand malformations a whole lot of anomalies and everything" R9, Male
		Third party influences	The external forces that come into play while treating the client with infertility, which could be people who are significant in their lives or donor sperm or egg for the treatment	"If you have clients who.... I had one client like that, I spoke to her about IVF and she went to discuss it with her mother and then her mother said no, and that she doesn't think that IVF is God made. So it didn't sanction well with her so she shouldn't do it. So there are people with that kind of mentality, once they feel that it is not a natural thing, so it is not God's way that they should do IVF" R4, Male OBGYN
		Religious barriers	Religious beliefs preventing clients from accepting a form of solution given.	"Yes, Assisted Conception Technology, and there are very good reasons for that so, some Catholics would not go beyond that. When you tell them that look, the only option is to go for IVF, then it ends there. Because my religion forbids me, but it is not universal" R10 Male, OBGYN
		Complicated adoption process	Complicated process of adopting a child	"The up and down, I mean we cite that it is straight-line, it is not straight-line. The process may take two, three, four years of you going up and down". R7, Male OBGYN
	Faith Integration	Role of religion	The role religion plays in the care of infertile patients and this is either psychological or behavioural	"Religion has a role; it is our way of life so it has a role in everything". Male OBGYN 3

Global theme	Organizing theme	Basic theme	Description	Sample quotes
	Faith Integration			"So usually, I tell them that what I do is science, you understand. And during my studies, it didn't come up and though I am also a Christian I believe in spiritual aspects and all that. I am going to treat her with the science that I know". R5, Female OBGYN
		Focus on science	OBGYN attention is on explainable things which are facts/science	
		Acknowledging Convergence	Healthcare workers acknowledgement of the fact that religion plays a role in the care of infertility	"Because when we are doing Invitro Fertilization, when we put the eggs and the sperms together, the success is not hundred percent guaranteed. In fact natural conception itself is not hundred percent process, because if a man who has normal sperm quality and a woman who has normal eggs and her tubes are fine, if these people meet and everything is fine, the man ejaculates the chances of pregnancy is twenty percent" R1 Male OBGYN "So it's like a combined effort, you know their pastors are praying along but they did the IVF and they came to see this doctor". R1 Male
		Ethics	Principles governing OBGYN practice of infertility	"Errhm in as much as it is church doctrine, I am not conflicted when it comes to offering my patients family planning or offering them IVF. I don't think I will miss out on heaven because of that. Personally I don't have an issue with it". R3, Female OBGYN

