# INFLUENCE OF SPIRITUALITY AND RESILIENCE ON MANAGING INFERTILITY STIGMA AMONG MARRIED WOMEN IN SELECTED EVANGELICAL CHURCH ASSEMBLIES IN ZOU COUNTY, BENIN

JOCELYNE ANNIE MARIE-CLAIRE HOUNDEBASSO AHOGA

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## DECLARATION

This dissertation is my original work and has not been presented in this University or any other for the award of a degree.

Signed…….Date……
Jocelyne Annie Marie-Claire Houndebasso Ahoga
PMFT/21478/0/21

This dissertation has been submitted for examination with our approval as University supervisors.

Signature…….Date:……
Dr. Anne G. Wambugu, Ph.D
Pan Africa Christian University

Signed…….Date……
Dr. Veronica Kaari Makena, Ph.D
Pan Africa Christian University

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## DEDICATION

I dedicate this dissertation to my husband; Reverend Dr Augustin C. Ahoga to celebrate our shared passion for the pursuit of knowledge as we serve the Lord. I also dedicate this research work to our beloved children; Mrs Carole A. Houndjo, Mr Rodolphe Ahoga, and Ms. Thehilatel Ahoga, for the family bond that enables us to make incredible achievements. I equally dedicate the work to my collaborators at *Ministere pour la Famille (MINIFA)*, for their trust in our struggle for families' well-being.

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## ABSTRACT

Infertility stigma is generally overlooked by policy makers in Africa. In an attempt to helping intervention, this study examined the influence of spirituality in the religious context of the Church, and resilience, as the woman is managing infertility stigma. The study examined the relationship between spirituality and coping with infertility stigma, assessed the role of resilience in managing the psychological effects of infertility stigma, explored the interplay between spirituality and resilience in coping with infertility stigma, identified the support structures for married women managing infertility stigma, and explored potential for faith-integrated intervention at church. The study was anchored on the Satir Model and the Resilience theories. It employed a convergent parallel mixed-methods design. Data was collected from 384 married women with infertility issues and 45 leaders in selected mainstream Evangelical Church Assemblies in Zou County, Benin. A pre-test involved 45 women with infertility and 5 leaders selected in Come and Lokossa, two sub-counties of Mono. Simple random and purposive sampling were applied. All necessary permissions were obtained and ethical procedures were observed throughout the research process. The data was concurrently collected with quantitative and qualitative methods. The quantitative data was gathered using standardized instruments including ASPIRES, CD-RISC-10, COMPI CSS, DASS21, ISS-SF, and RSES. The qualitative data was collected with open-ended questions during the survey, interviews, and focus groups. The data was analysed concomitantly. The quantitative data was analysed using the Statistical Package for Social Sciences (SPSS) version 30.0, while the qualitative data was processed by the reflexive thematic analysis method. The reliability of instruments was determined by the Cronbach alpha. ASPIRES scored 0.90 on Spiritual Transcendence and 0.60 on Religious Sentiments. The value was 0.91, 0.78, 0.90, 0.98, and 0.94, respectively for CD-RISC-10, COMPI CSS, ISS-SF, DASS21, and RSES. The relationships between variables were established through regression and Pearson correlation analysis. The results were triangulated. All findings were presented through tables, charts, and graphs. The results, showed that spirituality explains 20.3% of the variance in the coping strategies. Resilience and infertility stigma together explain 45.8% in the variance of psychological effects. Stigma relates to psychological effects at 45.9%, and self-devaluation and social withdrawal presented as risk factors for these psychological effects. Spirituality and resilience mutually interact at 16.60% and influence infertility stigma coping strategies by an indirect effect. Women were yearning for structures engaged in emotional and social support, and wished that intervention strategies include teaching, training, praying, lobbying for access to subsidized fertility care, facilitating access to mental health services, and support to various extents. The findings in this study are informative for marriage and family therapists who seek to prevent, mitigate and provide effective intervention against infertility stigma. More, they set the ground for researchers and scholars for further studies on infertility and related stigma. Church leaders have in this study a valuable resource for effective intervention against stigma. This study is informative at policy level to provide sensitization on stigma and promote access to mental health services for women with infertility.

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## ABBREVIATIONS AND ACRONYMS

| | |
|---|---|
| ANOVA | Analysis of Variance |
| APA | American Psychological Association |
| ART | Assisted Reproductive Technologies |
| ASPIRES | Assessment of Spiritual and Religious Sentiments |
| CBT | Cognitive Behavioural Therapy |
| CD-RISC | Connor-Davidson Resilience Scale |
| CSS | Copenhagen Multicenter Psychosocial infertility (COMPI) Coping Strategy Scale |
| DASS21 | Depression Anxiety and Stress Scale – Short Form |
| ISERC | Institutional Scientific and Ethics Review Committee |
| ISS | Infertility Stigma Scale |
| ISS-SF | Infertility Stigma Scale Short Form |
| IVF | In Vitro Fertilization |
| IVF-ET | In Vitro Fertilization-Embryo Transfer |
| PACU | Pan Africa Christian University |
| PTSD | Post-Traumatic Stress Disorder |
| RSES | Rosenberg Self-Esteem Scale |
| SPSS | Statistical Package for Social Sciences |
| UK | United Kingdom |
| USA | United States of America |
| WHO | World Health Organisation |

## OPERATIONAL DEFINITION OF TERMS

**"Coping" vs. "Managing".** In literature, coping is used to relate to individual psychological response to stressors, while managing refers to how systems are managed (Schwarzer & Reuter, 2023). Therefore, coping is managing many stressful situations. The term "managing" is in the title of this research instead of "coping" because the research is not only about the woman who will be coping with emotional issues and psychological distress, but also about the support structures in Objective 4 and the faith-integrated interventions from Church policymakers in Objective 5. However, the use of the term "coping" will remain in the document and sometimes used alongside the term "managing", depending on the location's focus.

**Coping Mechanisms.** Coping mechanisms are the behaviours or strategies employed by women to handle and mitigate the emotional and psychological effects of infertility stigma (Wu et al., 2025)

**Evangelical Church.** Treier and Shin (2022) gave a multidimensional definition to "Evangelical Church", characterizing it by the four features of Bebington. Evangelicalism was defined with four framing features, namely, "conversionism", "biblicism", "crucicentrism", and *activism*. From the operationalization of this definition, Evangelical Church is the community where Evangelical Christians believe in the Bible as the inspired word of God, stress the necessity for each person's conversion to Christ; believe in the gift of God's forgiveness in Jesus through His life, death, and resurrection; and believe in the critical call of Christians to invite non-Christians to Christianity.

**Faith-Integrated Interventions.** Faith-integrated interventions are theologically rooted and trauma-informed (Istratii & Ali, 2023). They are all

organised actions taken at personal, community or policy level, seeking to alleviate the effects of infertility and related stigma on the women in this study.

**Infertility.** Infertility is defined as failure to achieve pregnancy after 12 months of regular unprotected intercourse (Bayefsky & Caplan, 2024). In this study, infertility is defined as the absence of the event of having achieved a pregnancy, despite regular unprotected intercourse during one year. It is considered a social issue involving cultural, religious, and spiritual aspects.

**Infertility Stigma.** Infertility entails social discrimination regarding the inability to conceive in due time (Luo et al., 2024). The various types of stigmas experienced by women with infertility because of the cultural non-acceptance of the phenomenon, negatively impact their psychology and generate impairments such as anxiety, depression, stress, hopelessness, fears, feeling of failure, feeling of insufficiency, nervousness, sexual anorexia, among many. The same view of infertility stigma is adopted in this study.

**Married Woman.** In Christian Evangelical theology, marriage is a God-initiated institution consisting of a monogamous and lifelong relationship between one man and one woman (Akinola, 2025). However, due to high occurrence of polygyny in Africa, where one man has several wives (Ahinkorah, 2021), a married woman in this study designates a woman married to, and living with one man. She may be living in a polygamous marriage, given that a polygamous man can join the Evangelical Church. The woman in this study may also be the only Evangelical Christian in her polygamous household.

**Psychological Effects.** Psychological effects are the psychological conditions such as stress, depression or anxiety, induced to the woman in the study by infertility and related stigma (Assaysh-Öberg et al., 2023; Brigance et al., 2021).

**Resilience.** This study uses the psychological resilience. It is the ability to be doing better, in the face of an adverse condition, than would be expected in terms of psychological functioning (Daniels & Bryan, 2021; Liu et al., 2024). This study considers in addition, resilience as a capacity, where the individual can gather the resources needed to navigate infertility stigma, and negotiate their use.

**Spirituality.** Spirituality is the personal divine attributions of meaning and purpose to a given experience (Sena et al., 2021). In this study, the attribution of meaning and purpose is given to the experience of infertility, and stems from individual appropriation of the core concepts of Christian faith. Spirituality participates in the resilience of the individual (Safara et al., 2024).

**Spirituality in Evangelical Christianity.** Christian spirituality is the practice of cultivating a relational union with God in Jesus Christ by the presence of the Holy Spirit, practising one's experience of God within the community of believers as well as in the world (De Beer & Du Rand, 2021). Bashaija et al. (2025) add that Christian spirituality manifests through prayer, worship, service, community life, and personal transformation. In this study, the woman with infertility's experience of God, the cultivation of her relational union with Him, regarding the aspects of procreation and motherhood are of interest.

**Support structures.** The common functions of social support are emotional support, being part of a social community, being respected and valued, getting practical help, and getting information and guidance (Ruihua et al., 2025). The support structures in this study are all the organized actions carried out in the church, serving these functions for the benefit of women in infertility.

# CHAPTER ONE: INTRODUCTION AND BACKGROUND TO THE STUDY

## Introduction

This chapter introduces the research study that aimed to investigate the influence of spirituality and resilience on managing infertility stigma among married women. The background to the study sets the ground for the rationale of the research problem, the purpose of the study, the research objectives, and consequently, the research questions. Accordingly, the assumptions of the study are specified. Next, the justification of the study and its significance as well as the scope are given. Then, limitations and delimitations follow and the chapter closes with a summary.

## Background to the Study

The World Health Organization [WHO] (2024a) defined infertility as failure to achieve conception following 12 months of unprotected, regular sexual intercourse. This definition predominates in mental health research. Infertility classification includes primary infertility meaning never having delivered a live birth, and secondary infertility denoting failure to conceive after previous spontaneous conception and delivery (WHO, 2024a; Zaake et al., 2024). Brigance et al. (2021) and Domar et al. (2021) refined primary infertility criteria by incorporating maternal age, recommending twelve months for women under thirty-four, eleven months for younger women, six months for thirty-five-year-olds, and immediate evaluation for older women. The major feature of primary infertility is the absence of conception in a given time frame and required conditions.

Infertility was classified as a disease condition by the World Health Organization (WHO, 2024a). However, the duo ethnographic study in the United States by the couple Brigance and Brigance (2023) established infertility as a traumatic experience. Dube et al. (2021) documented substantial mental health

impacts across Canadian and American populations, findings corroborated by subsequent research (Abdallah et al., 2024; Assaysh-Öberg et al., 2023). Their qualitative investigation revealed anxiety, mood disruption, identity threats, relationship strains, worried preoccupation, fertility-related avoidance, obsessive fertility focus, emotional volatility, powerlessness, and burnout among affected individuals. These psychological burdens intensified through negative social perceptions and community responses (Bornstein et al., 2023; Kuug et al., 2023; Ofosu-Budu & Hänninen, 2021). Societies emphasizing traditional gender roles particularly target women with diverse stigmatizing experiences (Bornstein et al., 2023; Okantey et al., 2021; Taebi et al., 2021; Thoma et al., 2021). In addition to being a medical disease condition, infertility is challenged by sociocultural beliefs and stigma, and entails mental health issues.

Stigma constitutes a central feature of infertility, disproportionately affecting women (Luo et al., 2024). Cox et al. (2022), conducting systematic review and meta-analysis for the World Health Organization, noted infertility's unique status among health conditions as essentially the absence of an anticipated life event, that is pregnancy or live birth. Hawkey (2023) extended this analysis beyond biomedical frameworks, demonstrating how sociocultural narratives and practices fundamentally shape women's infertility experiences. Stigma itself represents a deeply discrediting attribute that distances individuals from socially accepted norms (Goffman, 1963). In the Netherlands, Aranda et al. (2023) confirmed from literature review, stigma's location within social interaction dynamics between affected individuals and their communities. Stigma is inherent to infertility condition.

Regarding the mental health issues brought by infertility, Brigance and Brigance (2023) in the United States experienced anxiety, depression, shame; and

sociocultural and gender-related expectations generated emotionally and complicated grief and trauma. Temitokpe (2022) synthesized qualitative research across seven African nations – Cameroon, Gambia, Ghana, Mali, Mozambique, Nigeria, and Tanzania – examining infertility's mental health consequences for women. She identified trauma, anxiety, sorrow, isolation, diminished self-esteem, and reduced self-worth as key distress manifestations, consistent with Dube et al.'s (2021) findings. Douvi (2022) explored seventeen married Beninese women experiencing minimum two-year infertility durations within family-centred cultural contexts. Participants reported stigmatization, social exclusion, withdrawal from community, hurtful remarks from acquaintances, relatives, and neighbours, nervousness, despair, depression, humiliation, insecurity, marital discord, polygyny threats, partner unfaithfulness, and in-laws introducing infants purportedly fathered by their husband. These experiences illustrate how cultural factors can intensify infertility stigma, sometimes generating violence. The psychological ramifications prove extensive and complex.

Women's approaches to manage infertility stigma encompass problem-centred, emotion-centred, and meaning-centred strategies. These constitute dynamic processes involving cognitive, behavioural, and emotional responses to stress (Theodoratou & Argyrides, 2024). Iordăchescu et al. (2021), studying Romanian women, identified emotional expression and self-criticism as common emotion-focused coping mechanisms. Expanding this viewing, Halkola et al. (2022) in Finland identified three primary coping dimensions: Internal strengths, healthy relationships, and professional assistance. These manifested as psychological wellness, practical management skills, acceptance of childlessness, constructive future-oriented thinking,

supportive partnerships, and appropriate help-seeking, all contributing to effective infertility coping.

African experiences reveal similar practical managements across cultures. Adane et al. (2024) documented Ethiopian women's reliance on religious/spiritual practices, traditional/cultural approaches, medical interventions, and additional indirect methods to alleviate stress, social pressure, and stigma. Mashaah et al. (2024) similarly found Zimbabwean women utilizing traditional healthcare services while also drawing upon family assistance, foster care, and adoption. Kyei et al. (2022) identified positive reinterpretation and avoidance/escape as predominant strategies among Ghanaian women pursuing assisted reproduction. Traditional, cultural, and religious treatment approaches seem to cohabitate with biomedical health care in African contexts.

Confronting stigma and psychological consequences, women develop adaptive strategies wherein support networks provide crucial protective effects. Idugboe et al. (2024) systematically reviewed perspectives from America, Britain, and Ukraine, finding support systems vital for reducing psychological distress and facilitating coping among women facing infertility stressors. Halkola et al. (2022) similarly identified robust relationship networks as essential coping resources for managing infertility stigma. Janković and Todorović (2021), reviewing Serbian literature, highlighted beneficial support from relatives, friends, especially spouses, and peer connections for women experiencing infertility. Sharma et al. (2024) in India emphasized family solidarity and spousal understanding as fundamental for women confronting infertility-related stigma. Fatima et al. (2023), researching in Pakistan, reached equivalent conclusions advocating supportive social networks for infertile women. Adda et al. (2025) in Ghana similarly positioned social support as

central to alleviating psychological suffering among affected women. Support is essential in managing infertility stigma.

Spirituality is another resource in managing infertility stigma. The concept of spirituality represents a complex, multidimensional construct that has proven challenging for researchers to define through a single operational framework (Jastrzębski, 2022; Johnstone et al., 2021; Sena et al., 2021). Jastrzębski (2022), writing from Canada, identified historical context, cultural background, and religious tradition as key lenses through which spirituality could be approached. Meanwhile, Kuckel et al. (2022) in the United States emphasized the clinical value of spiritual assessment in healthcare settings, particularly regarding end-of-life care. Although infertility differs fundamentally from terminal illness, Summers et al. (2023) advocated for integrating religious and spiritual dimensions into infertility assessments when appropriate for individual patients. Garssen et al. (2021) in the Netherlands further supported this approach, demonstrating that spirituality and religious practice could enhance mental health outcomes. In the experience of Brigance and Brigance (2023), spirituality enabled them to achieve posttraumatic growth. These findings collectively justify incorporating spiritual considerations into infertility care.

Resilience, an extra resource for dealing with infertility-related stigma, just like spirituality, doesn’t have a universal definition, but shares fundamental characteristics across disciplines. Bowling et al. (2022) proposed a framework grounded in theoretical foundations while allowing resilience concepts to emerge organically from research data. They identified essential resilience components including spirituality, social connections, self-worth, hopefulness, and life purpose. Despite definitional debates, the fundamental elements of adversity and positive

adaptation remain widely accepted, as illustrated by Daniels and Bryan (2021). Troy et al. (2023) advanced an affect-regulation model of psychological resilience, premised on adversity being inherent to human experience and individual responses depending substantially on emotional regulation capacities. Their framework incorporated cultural norms, family systems, practices, and values. These components of resilience provide a perspective on how it could intervene when women are dealing with the challenges of infertility.

Infertility is a major life challenge with associated stigma, especially harsh and socially damaging for women in sub-Saharan Africa, as demonstrated by Ofosu-Budu and Hänninen (2021) in Ghana. Infertility presents the same reality in Benin, as evidenced by Douvi's (2022) research among Mono and Couffo Counties' populations. Infertility represents the most extensively studied adverse reproductive event affecting parenthood aspirations (Brigance & Brigance, 2023). However, most studies were skewed towards coping strategies (Bawadi et al., 2024; Çitil Canbay et al., 2022; Dierickx, 2022; Jiang et al., 2025; Naab et al., 2025). Similarly, stigma was investigated in several studies (Azize Diallo et al., 2024; Ekpor et al., 2025; Kiani et al., 2022; Li et al., 2025; Xie et al., 2023).

Psychological impairments equally focused attention in research (Dourou et al., 2023; Fernandes et al., 2023; Kamışlı & Terzioğlu, 2023; Yokota et al., 2022). A few studies looked at social support (Klaus et al., 2023). Some other studies addressed infertility in relation to resilience (Fernandez-Ferrera et al., 2022; Santa-Cruz et al., 2023; Shafierizi et al., 2022; Zhao et al., 2022) or spirituality (Dehghan et al., 2024; Foti et al., 2023; Mpono et al., 2024; Odek et al., 2021). However, no study examined these variables all together in a single study. Consequently, the current

study aiming at the influence of spirituality and resilience in managing infertility stigma sought to fill such gap in research.

**Statement of the Problem**

Globally, infertility has been perceived as a health as well as a social issue (Bourey & Murray, 2022; Islam & Sharmin, 2024; Kyei et al., 2021; Serour & Serour, 2021). In the United States of America, Summers et al. (2023) advocated for a holistic model of defining infertility, despite the potential benefits for fertility care provision and coverage, when it is considered a disease. Attempting to assess whether public attitudes towards fertility treatment coverage were influenced by infertility labels, Mancuso et al. (2021) found 78% of the 1226 study participants preferring the term *condition* to the term *disease* chosen by only 10% of them; this translates a willingness to decrease the potential for disease perception stigma. Bayefski and Caplan (2024) propose to include the significance of the phenomenon for people, and the need to address it for improving their lives. These studies suggest that for fertility care coverage, while stigma is an important part of infertility experience, at policy level it is shadowed by the perception as a disease.

In Europe, Earley et al. (2024) from a literature review on the growing scope of the issue of infertility, deplore the predominance of ART success stories lacking the perspective of the woman with infertility, who can report of emotion and stigma issues. In Asia, numerous empirical works are being conducted on infertility, focusing on stigma, psychological effects, or coping strategies, but not reporting on intervention (Anari et al., 2024; Durgun et al., 2024; Nik-Hazlina et al., 2022). For low-and-middle-income-countries, Gerrits et al. (2023) found only a few publications in a scoping review of interventions targeting the decrease of infertility stigmatization. Similarly, Balen (2023) reported infertility recognised as reproductive

health issue hitting also many countries of the Global South, but largely overlooked by the Global Health Policy makers for reasons such as overpopulation or high sociocultural practices of stigma as response to infertility. These studies indicate that the need for intervention on stigma is globally overlooked.

In Africa, Roomaney et al. (2024) from a scoping review in South Africa focusing on 116 eligible articles, conducted from 2000 to 2022 in Ghana, Nigeria, and South Africa, concluded of the need for more research on psychosocial features of infertility as well as intervention on the continent of Africa. Likewise, Armah et al. (2021) from Ghana reviewed evidence of holistic management of infertility from global databases and found 18 articles written between 2010 and 2018, of which none was reporting experience from Africa. Armah et al. (2021), specifically mentioned the lack of social intervention, like community education and information about different aspects of infertility, as a research gap. Salie et al. (2021) holding the same stance of the necessity of intervention in Africa, reported in addition the situation of little interest in infertility in terms of research and stated the paucity observed in developing countries. These demonstrated a lack of intervention in infertility stigma reduction and a little interest of research on the same on the continent of Africa.

In Benin, the problems identified at continental level are real and represent the areas that this study sought to contribute to. The study considered resilience that plays a role in the experience of infertility (Vatanparast et al., 2022) and spirituality as an analysis standpoint in targeting a holistic approach in fertility care context (Hommens-van de Steeg et al., 2025). Indeed, spirituality in infertility management appears as a source of support and coping (Dehghan et al., 2024; Karakaş et al., 2025) or as a source of confusion (Karakaş et al., 2025). In addition, given that people tend to handle painful experiences through a mechanism inspired by their

culture and meaning-making systems (Crockett et al., 2021), the contribution of spirituality to the perception of infertility in a specific context is crucial. This pioneering work investigated the psychosocial consequences of infertility in the religious context of the Evangelical Church in the County of Zou, Benin with regard to the spirituality and the resilience of women with infertility.

**Purpose of the Study**

The purpose of this study was to establish the influence of spirituality and resilience on managing infertility stigma among married women in selected Evangelical Church Assemblies in Zou County, Benin.

**Objectives of the Study**

The current study was guided by the following objectives:

1. To examine the relationship between spirituality and coping with infertility stigma among married women in selected Evangelical Church Assemblies in Zou County, Benin.
2. To assess the role of resilience in managing the psychological effects of infertility stigma among married women within selected Evangelical Church Assemblies in Zou County, Benin.
3. To explore the interplay between spirituality and resilience in coping with infertility stigma among married women in selected Evangelical Church Assemblies in Zou County, Benin.
4. To identify support structures for married women managing infertility stigma within selected Evangelical Church Assemblies in Zou County, Benin.
5. To find out faith-integrated interventions for married women facing infertility stigma in selected Evangelical Church Assemblies in Zou County, Benin.

**Research Questions**

This research sought to answer the following questions:

1. What is the relationship between spirituality and coping with infertility stigma among married women in selected Evangelical Church Assemblies in Zou County, Benin?
2. What role does resilience play in mitigating the psychological effects of infertility stigma among married women in selected Evangelical Church Assemblies in Zou County, Benin?
3. How do spirituality and resilience influence infertility stigma coping strategies among married women in selected Evangelical Church Assemblies in Zou County, Benin?
4. What support structures exist to assist married women in managing infertility stigma within selected Evangelical Church Assemblies in Zou County, Benin?
5. What are the faith-integrated interventions for married women facing infertility stigma in the selected Evangelical Church Assemblies in Zou County, Benin?

**Assumptions of the Study**

This study assumed that infertility is a known phenomenon in the study area, and specifically, it is experienced by some women in the selected Evangelical Church Assemblies, who experience also the stigma related to infertility. In the study area and specifically in the church, married women with infertility issues develop a personal spirituality involving their belief system, faith practices such as prayer, spiritual support networks and religious coping mechanisms that nurture their overall coping mechanisms in the face of infertility stigma. Their assets and strategies for coping shed light on the role of spirituality.

It was also assumed that psychological resilience does help to explain the ability to cope with infertility stigma and psychological effects, as experienced among married women with infertility in the selected Evangelical Church Assemblies in Zou County, Benin. Resilience strengthens them and enhances their ability to face the adverse effects of infertility. Indeed, the infertility related stigma generates psychological effects in women with infertility issues. In addition, the patterns of stigma management help to highlight the role of resilience in managing infertility stigma.

Another assumption was that there are specific spiritual practices that contribute to resilience in managing infertility stigma, as experienced among the selected Evangelical Church Assemblies in Zou County, Benin. Concomitantly, resilience also influences spiritual growth. In the same line, the interaction of spirituality and resilience generates coping outcomes such as improved mental health, reduced self-blame, or enhanced emotional well-being. A strong support system nurtures the process and the church leadership plays an important role in these dynamics. Peer support groups are also part of the support system, as well as counselling initiatives.

Further, the study assumed that beyond church leadership role, there is a church-based support system made of activities such as pastoral care, prayer groups, and faith-based counselling programs. In addition, there is community involvement which comprises of inclusivity in church activities and peers' encouragement. More, for objective 5, there is effectiveness of support structures measurable by the women with infertility satisfaction, the frequency of use, and the perceived impact. Finally, the church leadership and community are ready to accept and eventually contribute to faith-integrated interventions to improve coping mechanisms of married women living with infertility.

**Justification of the Study**

Addressing infertility stigma is meaningful, judging by the huge population affected worldwide (Xie et al., 2023), the induced psychological suffering (Taebi et al., 2021; Xie et al., 2023), and the need to have more research on psychological aspects of infertility (Chen et al., 2021a; Zhu et al., 2022). The WHO (2024a) from a global perspective, stated that millions of people suffer infertility and approximated this population to one in every six people of reproductive age. Xie et al. (2023) acknowledged the highly spread character of the phenomenon, and performed a review in China as mentioned above. They found negative impact of stigma on psychology and daily life of those women, and came to the conclusion of the necessity for health and mental health professionals to caring for people with infertility and reduce the effect of their stigma. In a similar perspective, F. Zhang et al. (2021) show that in general, women with infertility experience stigmatization, and they conducted a questionnaire-based study with 254 women undergoing fertility treatment. They found moderate to high levels of stigma for such women, in the Province of Zhejiang, China and concluded to the need for psychological interventions to support and alleviate the negative effects of stigma.

Having the association of infertility stigma with psychological issues in the background, Taebi et al. (2021) conducted in Iran, a qualitative content analysis with 17 women in infertility, exploring their experiences and perceptions to derive the concept of infertility stigma. They found verbal stigma, social stigma, same sex stigma, and self-stigma, and consequences of the stigma experienced by the women in the study, as anxiety, depression, low self-esteem, among others. Likewise, Xie et al. (2023) found in their review, anxiety, depression, negative emotions and feelings such as helplessness and sadness, and expressed the need for targeted interventions to

reduce infertility stigma. Similarly, Yokota et al. (2022), from a cross-sectional study with 254 women undergoing infertility treatment in Japan, found stigma as statistically predicting anxiety, depression, and psychological distress. They suggested that further research be undertaken on the link between infertility stigma and psychological impairment, specifically investigating the causal relationship. As shown by Zhu et al. (2022), beyond the evidence that infertility stigma engenders psychological suffering, the need for research is also on the specifics of psychology in the field of infertility.

Zhu et al. (2022) in China, investigated the scientific work in the research on infertility and psychology by a bibliometric analysis, and found a strong link between both, but came to the conclusion that more research was needed. They specified that the status of infertility needs more investigation by scholars, for example, the psychological level of infertility, working on the psychological emotions of stress, distress, and anxiety. Such research perspectives are worthy as the targeted emotions are found in almost all studies on infertility. For example, Bagade et al. (2022) in a longitudinal study on women's health in Australia found infertility as a multidimensional stressor causing depression, anxiety, and stress, with long-lasting consequences on women's mental health. In a perspective of Marriage and Family Therapy, Chen et al. (2021a) in the USA, reviewed articles published between 2000 and 2016 in 12 'Couples and Family Therapy Journals', and found only 19 articles with focus on infertility, representing 0.24% of publications. They therefore concluded there was insufficient scholarly interest on this phenomenon. Their analysis pointed to several shortcomings in the studies reviewed, and they suggested that mixed method approaches might suit the complexities of infertility, to capture valuable details for clinical work.

The present study sought to highlight the stigma of evangelical church married women living with infertility in the Zou County, Benin, in an attempt to raising awareness on the psychological effects of the stigmatization on the mental health of those women. Further, the resilience and the spirituality of these women which informed their coping with the inconvenience of their condition were evaluated. The research provided an opportunity for married women living with infertility to share about their condition and feel valued. In addition, there is little research or interventions to raise awareness on such conditions, to the benefit of married women living with infertility in Zou County, Benin. These perspectives justified the undertaking of the present research.

**Significance of the Study**

In a context of high stigmatization like the County of Zou, getting a clear picture of the influence of spirituality and resilience on managing infertility stigma would be of interest at several levels. The present research could benefit the women with infertility participating to the study as responding to the survey questionnaire may be for them the opportunity to giving voice to their problematic condition and receiving active listening. Most importantly, their infertility stigma experiences were part of the analysis that would lead to recommendations for interventions at the church as well as community level. The findings from the study could improve their condition. The existing body of research will benefit from this study, as it will contribute to knowledge about infertility with regard to the related stigma and psychological impairments in the specific sociocultural context of the study area, the resilience parameters, and the contribution of spirituality.

Specifically, marriage and family therapists and related professionals will get a better insight into the psychological condition of women living with infertility in

that specific context. This could inform their practice and improve efficacy. This research will also add to the list of studies that have addressed the topic in Benin. At policy level, the present study adds to the voices raising awareness against stigmatization in the continent of Africa and suggests ways for effective interventions at community level. Additionally, church leaders will have a valuable source for setting specific caring programs to meet the needs of church members who are living with infertility.

**Scope of Study**

This study addressed the stigma of infertility on the management aspects within the Evangelical Church, by the target women as well as the Church as an institution. The study was framed by the spirituality and the resilience of the target women as experienced in the religious context of the Evangelical Church. The potential factors influencing the women in managing the experienced stigma were also examined at Church level, as church-based support systems and faith-integrated intervention strategies. In this perspective, the variables involved in the study were spirituality and resilience as independents, and the dependent variables counting for managing infertility stigma. The study was conducted in seven purposively selected mainstream Evangelical Church denominations of Zou County, Benin.

The county of Zou presents a good diversity in terms of sociocultural practices, socioeconomic dynamics, access to public services, and political participation. Evangelical Church Assemblies are well spread in the county. Married women living with infertility in the assemblies populated the study frame, and this permitted the study to be inferred to the whole county. Women between the age of 18 to 60 years, married for 2 to 40 years and facing infertility were eligible for the study; the women aged below the age of 18 or above 60 years were excluded. The sample

size for the survey was 384 participants and a convergent parallel mixed-methods design was applied to gather both quantitative and qualitative data for the research in a correlational research framework. A period of one month was envisaged for data collection. Data was finally collected within a period of three months.

**Limitations to the Study**

Limitations are the major challenges or constraints in research that may arise from the methodology and the research design. The limitations of a study have the capacity to influence its outcomes and conclusions and minimize the impact on validity (Zhu, 2024). In this view, the current study faced four major limitations. The first limitation concerns the reluctance of some people to participate in the research. In some couple experiencing infertility, the husband was reluctant to let his wife participate to the study, evoking the privacy of the issue of infertility. Despite explanations on the ethics of the research, specifically about confidentiality, some could not comply, because of some cultural opinion that one should not disclose serious matters to strangers, in this case, the researcher and research assistants. Without consent, these women did not participate to the study.

The second limitation to the study was the social desirability bias due to the sensitive nature of the topic of infertility. It was feared that the participants would shut down to questions and purposefully limit their openness or bias their responses, but as the questionnaire-administrators took time to build the rapport with women before addressing the questionnaire, women shared frankly of their infertility stigma experience. The third limitation was the church being the research setting. Some researchers could assume of biases because of the religious context, which might hinder the validity of the work. To mitigate this limitation, the concept of spirituality in this research was considered at scientific level, and as a variable, the spirituality of

the surveyed women was measured with a standardized tool. One last limitation concerns the generalizability to other church denominations such as the Catholic church, due to doctrinal divergence. However, the study is generalizable because the doctrine of the church didn't dominate the study design and the standardized tool used to measure spirituality is universal.

**Delimitations of the Study**

Delimitations of research are the boundaries set on purpose by the researcher to narrow the scope of the study and make it workable (Coker, 2022). The researcher established four delimitations to this study. First, the study aimed to be inclusive of all socio-economic strata among the participants of the research, unlike common practices in research on infertility, where participants are often recruited from infertility treatment centres, such as in vitro fertilization. The costs of this type of intervention being prohibitive for certain socio-economic groups in the population, a wide range of women are excluded from the sampling. In this study, the church, accessible to all, was then identified as the lieu to meet women living with infertility. This also allowed for the characterization of their spirituality through the religious context of the church.

Second, within the realm of Christianity, the research was constrained to the Evangelical Church Assemblies in Zou County, Benin. Consequently, the generalizability of the results outside the Evangelical Church Assemblies and other areas may be limited. Third, the study focused on married women from the Evangelical Church Assemblies in the County of Zou in Benin, who are living with infertility. Fourth, the research was delimited to the mixed method design and used both qualitative and quantitative data.

## Chapter Summary

In this chapter, the background to the study has been presented, followed by the statement of the problem and the purpose of the study. Then, the study objectives, the research questions, and the assumptions of the study are outlined. Addressed next are the justification of the study, the significance, the limitations as well as the delimitations of the study. The next chapter covers the literature review, the theoretical framework, and the conceptual framework.

# CHAPTER TWO: LITERATURE REVIEW

## Introduction

This chapter reviews the literature relevant to the research on the influence of spirituality and resilience on managing infertility stigma. The general literature review is followed by the empirical review aligned with research objectives. Next, the theoretical orientation of the study is presented followed by the conceptual framework of the study. The chapter ends with a summary.

## General Literature Review

In the literature reviewed, the concept of infertility has not been addressed in connection with the related stigma and the concepts of spirituality and resilience in one same study. Consequently, the general review addresses the topic by sequences including infertility and related stigma, and the concepts of spirituality, resilience, and coping strategies.

### *Infertility, Related Stigma, and Psychological Effects*

Infertility is a worldly known phenomenon as stated by the World Health Organization which specifies that it distresses people and affects their families as well as their communities (WHO, 2024a). From a global perspective, Cox et al. (2022) and WHO (2023) approximate the millions of people with infertility to one in every six people of reproductive age, which is 17.5% of the global population. The rate ranges from 12.6% to 17.5% for the Africa region as delineated by the WHO (2022). The figures depict the high prevalence of infertility at both global and regional level, but data unavailability limits the systematically stating for the country level and evaluating the care efforts at policy level. In Benin, Azombakin et al. (2025) from available data suggested a rising prevalence of infertility in the population. They reported a retrospective study that indicated more than 72% of male partners were

seeking consultation for infertility in 2018, and commented that these alarming figures may still be underestimated due to the challenge of comprehensive data collection. From Cox et al. (2022), validated and reliable estimates of infertility are still needed for fully apprehending its grip on people and consequently enacting fertility care services for their relief as well as for prevention strategies

A large body of empirical work reported infertility generating stigma (Anari et al., 2024; Earley et al., 2024; Jiang et al., 2024; Kucuk & Koruk, 2022; Nik-Hazlina et al., 2022; Safara et al., 2025; Serour & Serour, 2021). In several African societies, stigma is justified by the value given to children and motherhood (Elwell, 2022; Gyan & Kpoor, 2022; Kuug et al., 2023; Kyei et al., 2021). This perception of the value of children is the same in Benin (Aguessivognon, 2023). In the study of Douvi (2022), stigma takes a large proportion of the outcomes. In all the studies reviewed on infertility, stigma appears as a consequence.

Invariably, infertility stigma brings stress, depression, and anxiety in women, and hinders their quality of life (Assaysh-Öberg et al., 2023; Xie et al., 2023; Yokota et al., 2022). Xie et al. (2023) found that both internal and external stigmas can generate social withdrawal or avoidance, negative emotions, anxiety, stress, and depression. Yokota et al. (2022) corroborated this and asserted that stigmatization and psychological symptoms like anxiety and depression were characteristics of women under fertility care. Indeed, in their study aiming at finding quantitatively the relationship between levels of infertility stigma and the severity of depression, anxiety, and psychological distress with 254 study participants, they found stigma as a statistically significant predictor of other variables. All told, psychological impairments are inherent to infertility stigma.

***Spirituality***

Spirituality is a broad concept that is difficult to define (Jastrzębski, 2022). Jeserich et al. (2023) expressed it as defining subjective transcendent attributions of meaning, communicated not necessarily through a religious system of fixed beliefs and practices, but rather the individual-creative and free appropriation of religious concepts and personal experience. Moreover, Rechberger (2024) pointed out that spirituality is connected to culture and social dynamics. In this line, fertility behaviour in traditional Africa was affected by religion, as fertility was viewed as virtue and spiritual approval while reproductive failure was taken for a consequence of sin (Hiadzi et al., 2022). For Amenga-Etego et al. (2021), African values were inseparable from African spirituality and according to Nche and Michael (2024), in Africa, spirituality and religion were inseparable from existence itself and were ingrained in daily life.

Christian spirituality, involves the expressions, values, and reflections on the daily lived experience of Christian faith (Fubara-Manuel & Fretheim, 2023). It is a religious spirituality where the Christian tradition embraces the values and beliefs that turn to meaning and guide practice to wholeness and transcendence (Villegas, 2023). This depicts spirituality as the personal growth that occurs when the faith community meets before God. Thus, it is communal and mutual, God-oriented in the God-established pattern of life known as church where God makes Godself known. Therefore, Christian spirituality encompasses the purposeful living of life on the basis of own reception and interpretation of Christian revelation (Villegas, 2023). Specifically, women express their spirituality through action, prayer, songs, praise, symbols (Amenga-Etego et al., 2021; Fubara-Manuel & Fretheim, 2023). In this perspective, some Christian rituals include church attendance, Bible study, and prayer

(Fubara-Manuel & Fretheim, 2023). Such framework is of interest in this study on the spirituality of women with infertility in the church.

### *Resilience*

Resilience, as defined by the American Psychological Association Dictionary of Psychology [APA] (n.d.), is both the process and outcome of successfully adapting to adverse life experiences by developing mental, emotional, and behavioural flexibility to cope with internal and external challenges. With a slight difference, Hiebel et al. (2021) defined resilience as a multidimensional adaptation process. Masten et al. (2021) stated that it is the way a system responds successfully to important challenges that threaten to destroy or damage its function, viability, or well-being. One common point of consensus in the endless debate on the concept of resilience is that positive adaptation can follow exposition to risk (Pearson et al., 2025). To this regard, infertility as a phenomenon is an adverse condition in the developmental journey of the married women, and consequently, resilience will call for positive adaptation in the face of infertility stigma.

### *Coping Strategies*

The nexus between resilience and coping has been discussed without consensus in literature, in terms of being equated with each other or not (Hallen et al., 2020). In this study, both psychological concepts are considered distinct, despite their interrelatedness. For instance, Wu et al. (2025) referred resilience to the ability to recover from trauma, stress, or adversity, and coping mechanisms to the behaviours or strategies employed to handle and mitigate the emotional and psychological returns of such experiences. In the eighties, psychologist Richard Lazarus and his assistant Susan Folkman (1984, 1987) developed the Transactional Theory of Stress and Coping, conceptualizing coping as a process by which individuals manage the

challenging or threatening situations they were facing (Lazarus & Folkman, 1984). The mechanism of stress affecting human health and functioning works by the two key processes of cognitive appraisal and coping. Situations are first cognitively appraised by the person, and the necessary coping behaviours for meeting the specific demands of the stressful situation are chosen, based on his or her appraisal (Milas et al., 2021; Schmidt et al., 2024). Consequently, coping is engaging in cognitive, followed by behavioural efforts to comply to internal or external demands that are beyond the individual's available resources (Lazarus & Folkman, 1984). Coping mechanisms stem from learned behaviours, moulded by happenings in the family and past traumatic experiences (Bondarchuk, 2024).

Chaaya et al. (2025) reported the most usual categories of coping as problem-focused against emotion-focused and engagement contrasting with disengagement coping. Specifically, Lazarus and Folkman (1984) presented problem-focused coping as the intention to change the situation, remove the stressor or manage the problem, while emotion-focused coping aims to reduce or remove the negative emotions related to the problem. About engagement or approach coping strategies, the aim is at active attempts to manage the ongoing situation or the accompanying emotions, and disengagement or avoidance coping strategies call for distancing oneself from the stressor or any related feelings (Fernández-Barradas et al., 2024). The habitual ways of coping will profile the immediate stress response, and in addition impact on mental health and social functioning (Schmidt et al., 2024). It is critical to promote healthy coping resources in order to avoid harmful response to stress.

**Empirical Literature Review**

Empirical review of studies is where conclusions are exclusively derived from facts, concrete and systematic observation, or experiment, verifiable evidence, rather

than theory or general philosophical principles (Bouchrika, 2024). In this section, the empirical literature is reviewed as per research objectives.

## Relationship Between Spirituality and Coping with Infertility Stigma

Infertility is a stressful condition that necessitates women to develop coping strategies to protect and maintain mental health. Existing literature has considered the mediating role of these strategies for psychological well-being and quality of life (Jing et al., 2021). Some of the coping mechanisms include: emotional regulation, acceptance, social withdrawal, and reliance on divine intervention. Prior to reviewing the relationship between spirituality and infertility stigma, this section addresses infertility-related stigma and infertility coping mechanisms.

### *Infertility-Related Stigma*

Fu et al. (2015) and Li et al. (2025) evaluated infertility sigma in four aspects, namely, self-devaluation, social withdrawal, public stigma, and family stigma. In general, several of them are found mixed in the same study as shown in the studies reviewed hereafter.

**Self-Devaluation.** Women with infertility may experience self-devaluation as a result of stigmatization, family humiliation and social disapproval of infertility (Jing et al., 2021; Klaus et al., 2023). Xie et al. (2023) in China, focusing on stigma in women with infertility and its effects on them, found higher sense of stigma in women and this perceived stigma engendered, in addition to infertility-related stigma, self-judgment, shame, and depression. More, external stigma also was found to cause discrimination, shame, stress and depression. Thus, both internal and external stigmas potentially generating social withdrawal or avoidance, negative emotions, anxiety and depression. Yokota et al. (2022) in their study aiming at finding quantitatively the relationship between levels of infertility stigma and the severity of depression,

anxiety, and psychological distress with 254 study participants, corroborated these findings. Xie et al. (2023) in addition, found that women experience emotional and family violence, which may be participating in their self-devaluation. These various studies evidence self-devaluation leading to mental health issues.

**Social Withdrawal.** Studies have raised some arguments on the consequences of the socially prescribed value of motherhood and childbearing on the mental health of women with infertility, such as negative self-perception or feelings of powerlessness, inadequacy and unfulfillment (Foti et al., 2023). Perceived importance of motherhood was positively associated with psychological distress as well as coping strategies such as spiritual coping, social withdrawal, denial, and negative self-perception (Foti et al., 2023). Consequently, infertility has a negative impact on subjective well-being, quality of life, and global life satisfaction (Bernet et al., 2025; Nagórska, et al., 2022). The domestic, cultural, and social pressure that couples dealing with infertility face affects their sense of dignity and personal identity (Mohammadi et al., 2024). In addition, having internalized the negative labels of stigma, women with infertility experience shame, powerlessness, self-isolation, self-devaluation, discrimination, and all sorts of negative self-perception, and negative feelings leading to psychological distresses. Overall, social withdrawal, in addition to prompt psychological distress, hinders life satisfaction.

**Public Stigma.** In a qualitative research approach, Adane et al. (2024) investigated the sociocultural challenges facing women with infertility and their coping strategies in Ethiopia. They applied a descriptive phenomenological design, used a sample of 30 participants, and performed thematic analysis. In addition to the many cultural challenges, four types of stigmas came out of the analysis as social stigma, perceived stigma, self-stigma, and verbal stigma. Women were stigmatized by

other women. The types of stigmas align with the findings of Taebi et al. (2021) and in the work of F. Zhang et al. (2021) who also named social and perceived stigma in their study. Other social challenges include self- and social isolation, social and family pressure, and marital issues. Due to the pressure induced, public stigma appears a risk factor for social withdrawal.

The negative societal perception of the phenomenon of infertility does affect also the men living with infertility, but little is known on male infertility (Dierickx et al. 2021). Furthermore, Dierickx and colleagues investigated men with infertility in Gambia for their perception and experiences of infertility and reported that male and female infertility were acknowledged and both genders faced stigmatization. In fact, the masculinity of the men was questioned in the community, where they were scorned or mocked. Similarly, male infertility frightened marriage and family dynamics and can lead to extramarital romantic relationships, polygyny, or divorce. Thus, regarding the impacts on mental health, men said that they suffered alone and in silence and felt sad, ashamed, emotionally drained, stressed, unconfident among peers, had poor self-esteem, were isolated from social and religious events around children. Chukwuka (2025) reported similar cultural outcomes of male infertility in the sociocultural context of Nigeria. Male infertility affects the self of the man, humiliate him by public stigmatisation and constitutes a threat for the stability of the couple.

Likewise, Bornstein et al. (2023), in rural Malawi investigated infertility stigma. They found that both men and women experienced stigma as self-stigma, relationship instability, discrimination, separation, social exclusion, social isolation, labialization, discredited identity, and men felt frightened in their masculinity and virility. Chukwuka (2025) reported hinderance of inheritance, loss of social status

and exclusion from roles and responsibilities in the society, as a few consequences of male infertility. Due to social stigma, it was difficult for men in Bornstein et al.'s (2023) study to self-report infertility. To escape humiliation, these men happened to arrange secretly for another man to inseminate their wife. Nevertheless, stigma turned unavoidable for them in the case of secondary infertility. The woman was then suspected of infidelity for the only born child and the man's infertility was established in the public perception. These studies highlight the fact that a man's infertility is a potential source of public stigmatisation for his wife.

**Family Stigma.** Almost all infertility stigma experiences include family stigma, due to the widespread societal perception of the phenomenon. For instance, in China, women with infertility received a lot of pressure from the family, due to the cultural prescription of motherhood as the role of the women (Jiang et al., 2025). Similar experiences were reported in India, where the woman was blamed, pitied, excluded from rituals, experienced marital tensions and emotional violence (Sharma et al., 2024). The pronatalist social norms were also found in Jordan, where the woman received a lot of pressure from the family-in-law, experienced harsh blame for the childlessness of the couple, marital conflict, emotional abuse, and she was even disinherited (Bawadi et al., 2024). Tensed family relationships, especially with the husband were experienced by the woman in Ethiopia (Adane et al., 2024). Family stigma cuts across the experience of infertility in pronatalist cultures.

Various manifestations of family stigma were also found across sub-Saharan Africa. In Uganda, the woman was excluded from decision-making and deprived empathy from family (Asiimwe et al., 2022). In addition to the lack of family support, in Zimbabwe, the woman could even be excluded from the family, be suspected of witchcraft, and mocked for lacking heirs for her assets (Mashaah et al.,

2024). In Gambia, the family and husband's rejection were so strong that the bride price was claimed back (Dierickx et al., 2021). In Senegal, the marital blame and rejection were so strong that this could have led to divorce (Dierickx, 2022). Likewise in Nigeria, divorce and possibly polygamy were likely to happen to women with infertility (Chukwuka, 2025). In Ghana, the woman with infertility experienced strained family relationships, particularly with the husband (Annan-Frey et al., 2023); she was blamed, excluded from rituals, verbally abused, suspected of dissolute activities or witchcraft, insulted and ridiculed by her husband and other wives (Ofosu-Budu & Hanninen, 2021). These study findings suggest that family stigma can destabilise the woman as it is a constant source of adversity and a threat to the vitality of her marriage.

Still in Ghana, Kuug et al. (2023) highlighted the stigmatization of infertility beyond death, in an ethnographic study conducted to investigate cultural perspectives and implications of infertility for men and women in Ghana. Prior to the study, they acknowledged infertility as experienced in silence and deeply affecting the essence of self. The study showed piercing of the dead man's genitals to highlight their uselessness in family generating, and burial of the dead body on an isolated land to avoid him impoverishing their land. In addition, the spouse was denied the family inheritance and sent away from the matrimonial house. This is pointing to stigma transfer that occurs to people in the nexus of the stigmatized person. In daily life, the couple with infertility will face isolation, scorn, and social ridicule, and men feel anxious due to the pressure from extended family to impregnate their wife, while women face humiliation and verbal abuse, mainly from the family-in-law. The findings in Kuug et al.'s (2023) and Ofosu-Budu and Hanninen's (2021) studies, presented childlessness as a curse. All told, the social perception of infertility nurtures

family and other types of stigmas and can lead to traumatic experiences for the woman.

### *Infertility Stigma Coping Mechanisms*

Schmidt et al. (2005) considered four types of strategies in developing the assessment of coping mechanisms for infertility stigma. These include active-avoidance, active-confrontation, passive-avoidance, and meaning-based coping strategies. Often times, two or more of them are highlighted in the same study. For example, in Ghana, Kyei et al. (2022) seeking the basic coping strategies found confrontational, distancing, self-control, social support, acceptance responsibility, escape avoidance, problem solving and positive reappraisal, and the least used was acceptance responsibility, followed by confrontational and distancing. However, the four types of infertility stigma coping strategies are reviewed hereafter according to the Schmidt et al.'s (2005) framework.

**Active-Avoidance.** The active-avoidance behaviour is reported in several studies. In the qualitative phenomenological study engaging 15 women undergoing fertility care, conducted by Asiimwe et al. (2022), some of these women adopted social withdrawal and avoided gatherings, as coping strategies. The same was found in the studies of Bawadi et al. (2024), Çitil Canbay et al. (2022), Dierickx (2022), Jiang et al. (2025), Naab et al. (2025), Ofosu-Budu and Haninnen (2021) and Sharma et al. (2024). Some of these studies mentioned in addition, self-isolation, emotional distancing, disclosure avoidance, conversation avoidance, pretending to have children, applying religious rituals, praying and visiting tombs, and activating their social support system when they are stressed. Hiding their infertility condition was among the coping strategies found by Taebi et al. (2021). In Ghana, Azize Diallo et al. (2024) investigating the impact of infertility on psychological and social health of

women with infertility, identified active-avoidance as coping strategy among others. For Jing et al. (2021), the active-avoidance coping strategy could sustain stigma and hinder fertility quality of life, but Buran and Acar (2024) stated that avoidance may be an efficient strategy in some conditions. Sharing this perspective, González Casas et al. (2025) commented that the adequacy of any coping style was condition-dependent. The active-avoidance is a double edge strategy that nurture stigma but can also protect the woman in given circumstances.

**Active-Confrontation.** O'Connell et al. (2021) assessed the use of an online peer support forum for people with infertility and found that it reduced feelings of isolation for study participants, using samples drawn from Canada. Azize Diallo et al. (2024) got a similar study response in Ghana with an activity labelled united in grief, where women in infertility supported each other. O'Connell et al.'s (2021) study participants testified that the forum helped them to manage their infertility stress, thereby showing connection and communication, sharing, and information seeking, as positive coping strategies. With Azize Diallo et al. (2024), there was also self-motivation, mutual support among peers, active engagement in church and religious activities, as coping strategies. In sum, the study participants in the just reviewed empirical studies chose to actively confront their infertility issue.

A particular active-confronting strategy found in literature is the herbal medication practice. Adane et al.'s (2024) study in Ethiopia engaging 30 participants on exploring coping strategies of women facing infertility found help seeking from traditional practices of referring to herbalists or wizards, conventional medicine and informal foster care. Similarly, the women in Annan-Frey et al.'s (2023) study in Ghana turned to herbal-based and biomedical-based strategies. The same practice of turning to herbalists was found in Asiimwe et al.'s (2022) study. Interestingly, some

women blend herbal and biomedical medicines, but most of the time, financial and structural limitations in access to biomedical care constitutes the motive for turning to traditional herbalist practices. These studies suggest that women engaged in active-confronting strategies tend to seek solution to their problem, regardless of their circumstances.

**Passive-Avoidance.** In Turkey, Çitil Canbay et al. (2022) conducted a study involving 20 women undergoing fertility care and aiming at identifying their experiences of hopelessness. They found some of the coping strategies they developed as crying, and doling out. The study participants used also self-affirmation techniques like dreaming to be feeling better, enduring, thanksgiving and hoping, believing in the power of nature. The coping strategies in the Asiimwe et al.'s (2022) study included self-blame, hiding emotion, distractions, alcoholism, focus on money making, or obeying the husband; and negative self-concept. Similarly, Bawadi et al. (2024) found selective disclosure, and Moutzouri et al. (2024) discussed emotional adjustment.

Meanwhile, Naab et al. (2025) explored spirituality as coping strategies in their studies. Mashaah et al. (2024) found rebellious behaviour, emotional concealment, crying, and alcohol use in their studies. Like others, Smith et al. (2025) specified avoidance mechanisms as denial, disengagement and substance use among others. They reported that such coping strategy may bring to delay in, or inhibit help seeking, and induce exacerbated psychological distress. The passive-avoidance strategy clusters the woman in her own world and appears a risk factor for psychological distress.

**Meaning-Based Coping.** Adane et al. (2024) found that spiritual and religious strategy, where women massaged with holy books and holy cross, served

voluntarily religious institutions and made promises. From Asiimwe et al.'s (2022) study, the strategies found included mental strength for self-belief and acceptance; spiritual coping through prayer, Bible reading, hoping; optimism through belief in self, positive thinking, and concentration on work; acceptance of the situation as the will of God. Religious and faith-based coping were also found in the studies by Akarsu and Beji (2021), Bayoumi et al. (2021), Mashaah et al. (2024), Sharma et al. (2024). Taebi et al. (2021) expressed as coping strategies, acceptance, escaping from stigma, humour, and peer and family support. Overall, the reviewed studies in this section showed that spirituality and religion were also part of the coping assets of women with infertility.

***Spirituality in Coping with Infertility Stigma***

The review in this section brings spirituality alongside religion in the women's coping strategies. Sargeant and Yoxall (2023) stated that discussing spirituality in relation to psychology requires awareness of the fact that spirituality is a broad concept addressing the individual in relation to the sacred. Meanwhile, religion is in the realm of prescriptive approaches taken by communities in their attempt to relate to the sacred, but including also principles of individual differences. Both spirituality and religion contribute to psychological well-being, comforting and entertaining hope in the reported women's experiences (Sargeant &Yoxall, 2023). In their review article in India, Rathore and Kriplani (2023) stressed the individual-focus aspect of spirituality in positioning religion at community level as an organized system of beliefs, and setting spirituality subjectively within the individual dealing with his or her personal beliefs. Therefore, spirituality in this study can be considered as the personal appropriation of the dogmas of evangelical theology by the women in the church.

As conceptualized by authors in the previous paragraph, spirituality can play a role in coping when the individual is dealing with adverse situations such as infertility-related stigma. This may explain why spirituality as a coping strategy was found to be positively associated with quality of life (Amjad & Ahmad, 2023). Specifically, the individual finds meaning to his or her life in his or her spiritual beliefs and values, in addition to gaining a sense of connectedness to God, self and environment (Amjad & Ahmad, 2023). Another reason for spirituality to effect on coping is found in Garssen et al.'s (2021) meta-analysis where they expressed the effect of religion and spirituality on mental health in terms of quality of life, life satisfaction, well-being, and distress. Indeed, the role of spirituality in mental health is well-established (Henderson et al., 2025) and the construct of spirituality can be associated with other variables (Sena et al., 2021). For example, Jing et al. (2021) in a study involving 768 Chinese women undergoing fertility care, found stigma as inversely related to fertility quality of life and the active-avoidance mode as the most important coping strategy that mediates stigma and fertility quality of life. In this section, spirituality is reviewed in the framework of Piedmont (2010), following Spiritual Transcendence including prayer fulfilment, universality and connectedness; and Religious Sentiments comprising religious involvement and religious crisis.

**Spiritual Transcendance.** Jing et al. (2021) showed that the meaning-based coping mode played positively in the relationship between stigma and fertility quality. Thus, prayer or goal shifting could lead to better quality of life and low levels of perceived stigma because there could be transfer of the infertility pressure and the woman with infertility will find a new source of sustenance in spirituality. In this, the protective role of spirituality through prayer in the face of stigma was highlighted. On another hand, during COVID-19 Pandemic, Foti et al. (2023) investigated 193

women undergoing fertility care's psychological distress and their coping strategies with a multidimensional model of infertility stress. Spiritual coping was one of the ten dimensions of the scale used to measure the coping strategies, and importance of motherhood was found positively associated with spiritual coping. These findings suggest that the desire for biological offspring may lead women to turn to, or focus on practices lifting spirituality.

In a similar perspective, Çalışkan and Özkan (2021) conducted a descriptive correlational study in Turkey, including 175 women undergoing fertility care, to investigate their coping strategies against marital violence. These women were facing economic, sexual, emotional and verbal violence, and spirituality was part of their coping strategies. Faith and spirituality were common coping resources in Turkey, and spiritual coping techniques were said to be often used as women with infertility continued to hope. A similar experience of spirituality in Turkey was reported by Akarsu and Beji (2021) who, in a phenomenological study, sought the perceptions of 12 women undergoing fertility care on stigma as well as related religious and spiritual issues. They found social stigma, social isolation, self-stigma, sadness, fear, unhappiness among others, and mainly, spirituality to be part of the women's coping strategies, as they perceived their condition of infertility as the will of God and prayed about it. In addition to the use of spirituality as coping strategy, the dimension of domestic or intimate partner violence was of interest as this study addressed married women engaged in intimate partner relationships.

Still in Iran, Dehghan et al. (2024) acknowledged the potential of religious and spiritual intervention to alleviate the social and psychological stress in women with infertility, and investigated its effectiveness in psychotherapy for enhancing hope and daily spiritual life. The 40 study participants comprising of women

undergoing fertility care, stated that prayer and engagement in spiritual rituals were part of their coping strategies in the face of purposelessness of life and feelings of hopelessness. This perception of spirituality as a coping strategy was also experienced in Kenya, Kisumu County, where Odek et al. (2021) investigated the coping strategies of 200 childless couples with semi-structured questionnaire participants, 12 focus groups, and 36 key-informant interviews. Due to socioeconomic factors, coping mode choices were motivated by traditional and religious beliefs and spiritual intervention was sought as a source of support and coping strategy as well as a potential solution to infertility. Consequently, 20% of participants resorted to prayers. Choosing spirituality as a coping strategy can be motivated by socioeconomic conditions.

Similarly, in Yaoundé, Cameroon, Mpono et al. (2024) explored the coping strategies and support systems of 190 women undergoing fertility care, in a questionnaire-based study. Prayer and keeping busy were found the most used coping strategies. About half of the women using these two strategies were facing specific psychological impairment. This aligns with the findings of Jing et al. (2021) study based on Chinese participants who mentioned prayer and diverting daily attention as coping strategies. The support systems of the participants were reduced to husband and family in the study of Mpono et al. (2024) who commented that lack of social support could generate depression, anxiety, and troubled relationships. Indeed, in such conditions, the women locked in their context of infertility might lack the experience of a larger meaning and drive to life.

In South Africa, Mshayisa et al. (2024) investigating the role of African spirituality in kinship care, stated that spirituality guides people's ways and informs all aspects of their life, and leads them to achieve a higher consciousness of self. It

shapes their worldviews from which stem their values, beliefs and practices, and attitudes. In that perspective, the content analysis conducted in Uganda by Tusasiirwe et al. (2023), on the links between spirituality and social work noted that for people, spirituality was a means for finding meaning in adverse circumstances and coping with these. For Tusasiirwe et al.'s (2023) study participants, spirituality as a source of support in the face of loss, distress, or trauma, was as vital as psychology or medical care. And people's spiritual beliefs sustained their hope and optimism, helped their resilience and perseverance, and strengthened them. These women through their hope and optimism demonstrated belief in meaning and purpose to life beyond their context of infertility.

In the same line, Mwemezi (2024) in Tanzania conducted a study on spirituality and religion and stated that spirituality as the fundamental of life for Africans provides the structures for all guiding principles of life in the community. He noted that religion is engrained in their daily functioning. Accordingly, Tusasiirwe et al. (2023) were of the opinion that religious practices such as prayer and communal worship provide people with a sense of belonging that sustains hope in the face of adverse circumstances. In the present study, viewing spirituality as engrained in daily life may pose a challenge to measuring its influence, as this influence may have spilled over the frame of infertility. However, it expresses connectedness to a reality larger than these women's daily context (Piotrowski et al., 2021), and the ASPIRES scale would capture it.

**Religious Sentiments.** In the study by Gezinski et al. (2021) in Utah, USA, religion and specifically prayer were found comforting, showing that religious practices were part of their coping strategies. In addition to prayer, Dehghan et al. (2024) reported coping strategies as supplication and blessings seeking. They

observed that enforcing spiritual support as a resource for women with infertility could benefit their mental health. In a similar perspective, Abekah et al. (2025) investigating traditional and modern approaches to infertility treatment in Ghana, reported spirituality as a component of good health in the Ghanaian cultural belief system. The practices might include deliverance services, prayer camps, or fasting. From Chamberlain (2022), the traditional rituals could be libation pouring to calm ancestral spirits. Extending belief in spiritual blockages or curses, infertility was sometimes culturally perceived as due to spiritual marriages or covenants that would break only through specific rituals.

The centrality of spirituality and religion to life, shown in these processes of healing, was shared by Ofori and Opoku (2022) who investigated the role of spirituality in the healthcare of aged people in Ghana. They saw spirituality as the way of giving meaning to their presence on earth and the human interconnectedness, and inner peace. The concepts of spirituality and religion in their perception were interchangeable and positively influenced the well-being and quality of life. Specifically, in the Christian context, these study participants named spiritual coping and healing activities as prayer, Bible study, and listening to music meditation, communion, church attendance, and giving. In the same realm, the Annan-Frey et al.'s (2023) descriptive phenomenological study explored experiences and coping strategies of 19 women undergoing fertility care in Kumasi, Ghana.

The Annan-Frey et al.'s (2023) study results reported stress, depression, anxiety, stigma, social withdrawal and isolation, societal pressure, marital issues, and social support alongside religious and spiritual strategies for coping. The women drew upon their religious faith to adapt, relied on their devout conviction as a vital source for spiritual support and developed religious practices like fasting and prayers,

in believing that God would provide a child for them. Likewise, in Cape Coast, Ghana, Azize Diallo et al. (2024) investigated among others, the coping strategies of 10 couples undergoing fertility care and interviewed them together as units. The participants expected spiritual help from the church thus, they engaged in religious activities mainly, prayers. To this point, the women experiencing infertility in the various studies reviewed in this section display high religious involvement.

Spirituality and religion were ascertained as coping mechanisms by Litalien et al.'s (2022) review in Canada that included 128 articles. In addition, the study showed that religion and spirituality can provide a source of social support, and offer an ethical frame for decision-making as individuals or community. More so, the researchers stated that existence or absence of religion could improve the coping mechanisms depending on the circumstances, and spirituality and religion could positively predict mental health. This perspective was found in the in-depth interview by Gezinski et al. (2021) in Utah, USA investigating 10 women undergoing fertility care in a pronatalist and gender role context. In that context, families were large and religion-oriented; and in the church, ART was perceived as not of the will of God. The findings of the study included stigma attributed to the family culture, cultural norms, and religious expectations. The stigma experienced included feelings of sadness, anger, bitterness, social stigma, internalized stigma, perception of self as failure, and isolation as a result of stigma from the religious community. To note, this potential of religion to hinder individuals' coping mechanisms is a scarce stance in the literature reviewed.

When some women facing infertility feel that their prayers went unanswered, they can develop hatred towards God, taking their infertility as a curse or a punishment from Him. Wnuk (2024) presents a contrast thus, while positive religious

coping is trusting God through an open bond with Him, negative religious coping is developing an anxious attachment to God, made of fear of Him, fear of abandonment by Him, expectation of punishment from Him, and fear of potential revenge from Him. Of the same opinion is Gheysari et al. (2023) who showed that the negative religious coping makes the women have a negative appraisal of God whom they consider a punitive force with uncertain ability to answer prayer. Hence, they develop anger towards Him. Wnuk (2024) reported that positive religious coping positively predicted positive affect. In sum, religious coping appears as valuable in the coping asset of the women facing infertility, and negative use may prompt psychological distress.

## The Role of Resilience in Managing the Psychological Effects of Infertility Stigma

Resilience is likely to influence coping strategies (Liu et al., 2024; Xu et al., 2025; Zhao et al., 2022), and when the woman is dealing with the psychological effects of infertility, resilience could be considered as a coping strategy (Wu et al., 2025). Undeniably, infertility is experienced as a crisis generating stigma and psychological effects as shown in a study conducted by Vioreanu (2021). With these notions, the role of resilience is reviewed in this section with regard to infertility stigma management.

### *Resilience in Managing the Psychological Effects of Infertility Stigma*

Fernandez-Ferrera et al. (2022) conceptualized resilience as multidimensional, complex, dynamic, and resulting from the interaction between neurobiological, personal and social factors. For these authors, resilience is a construct that translates the ability to maintain a normal physical as well as psychological functioning through adaptive coping with stress and adversity. Beyond the definitional debate, the

fundamental components shared by the key theorists of resilience include adaptation and environmental factors promoting adaptation (Pearson et al., 2025). This review adopted the shared framework.

**Adaptation.** The study by X. Zhang et al. (2021) underlined the use of positive coping strategies to recover from stressful event and recalled that resilience was a significant predictor of posttraumatic growth, specifically in the case of infertility. Métais et al. (2022) shared the same view on posttraumatic growth. Similarly, Shafierizi et al. (2022) found high level of resilience enhancing posttraumatic growth in a cross-sectional study involving 122 women with infertility. In addition, X. Zhang et al. (2021) highlighted the gender difference and the dyadic effect in the experience of resilience, and found that they were associated with infertility-related stress and posttraumatic growth. Zhao et al. (2022), in their study, expanded this and showed that resilience helped women with infertility to accept their condition, overcome social stigma, maintain positive social orientation, develop less negative emotion, and maintain good functioning. These studies depicted resilience as adaptation in the face of uneven situation.

**Interaction with Environment.** Fernandez-Ferrera et al. (2022) were interested in the way 207 women undergoing IVF in Spain navigate psychological distress at the first attempt and after failures, and found that higher resilience entailed low levels of psychological distress at the first attempt. In a similar study, Santa-Cruz et al. (2023) measured resilience in 229 women undergoing fertility care with ART in Spain, assuming that women with infertility experience high levels of stress, and found that resilience has a protective role against stress and anxiety. Likewise, Yan et al. (2024a) in a study involving 433 women undergoing IVF-ET in China, found anxiety and depression negatively correlated with perceived social support and

psychological resilience. Similarly, from a review engaging 18 articles, Khan et al. (2023) in India found quality of life, posttraumatic growth, social support and coping as psychosocial factors associated with resilience, and stress, anxiety and depression as risk factors associated with resilience. The risk factors associated with resilience are the typical psychological effects of infertility stigma.

Ni et al. (2022) investigated resilience in the role of mediating social support and quality of life of 234 women undergoing fertility care in China and found that resilience completely predicted quality of life. Likewise, in Yan et al.'s (2024b) study, resilience presented a significant mediating effect on the association between several psychological markers such as psychological stress or posttraumatic growth, and quality of life. Zhao et al. (2022) explored and found psychological resilience as mediating between stigma and social avoidance and distress in 266 Chinese women with infertility. From the study, the potential factors of social avoidance and distress in these women with infertility included the infertility condition itself, education level, income level, work and career, level of disease perception and control, and high reproductive pressure. These studies depict the women with infertility adapting through interaction with their specific environment.

Overall, quality of life, posttraumatic growth, social support and coping are some psychosocial and protective factors associated with psychological resilience which play a protective role against psychological distress, stress, anxiety and depression in women with infertility. Moreover, psychological resilience plays a mediating role with social support, psychological markers, stigma, and social avoidance and distress. It also plays a moderating role with stress. The multidimensional perspective of resilience can allow evaluating the infertility-related stress and posttraumatic growth, in addition to the effects of resilience on women

with infertility. In sum, resilience calls for emotional strength, adaptability, perseverance, and self-efficacy, embedded in interaction with environment.

### *Psychological Effects of Infertility Stigma*

The psychological effects of infertility begin with unmet expectations of motherhood. In pronatalist societies, motherhood and childbearing are considered as inevitable fulfilments of the woman's identity, resulting in her stigmatization when she does not conform to this feminine profile (Dierickx et al., 2021; Jiang et al., 2025; Ofosu-Budu & Hänninen, 2021). In those societies, motherhood and child bearing are a sign of higher social status (Foti et al., 2023) since childbearing is a sign of virtue and this becomes a source of prestige for the woman (Azize Diallo et al., 2024). It is a sociocultural duty since childlessness is considered generational discontinuity (Ekpor et al., 2025). Therefore, infertility, as experienced by women, is perceived as being denied and deprived of such valued and desired social status, which appears as a blockage in achieving an important life goal.

Several studies have established the negative impact of stigma on health and quality of life (Jing et al., 2021; Kiani et al., 2022; Luo et al., 2024; Xie et al., 2023). In addition, infertility raises various types of challenges such as suffering from the condition as a major life crisis that leads to stressful experiences and various psychological conditions (Dourou et al., 2023). Women experience several psychological impairments, mostly stress, anxiety and depression as mentioned by several studies (Assaysh-Öberg et al., 2023; Brigance et al., 2021; Fernandes et al., 2023; Kamışlı & Terzioğlu, 2023; Luo et al., 2024; Péloquin, 2024; Taebi et al., 2021; Yokota et al., 2022; X. Zhang et al., 2021). Nevertheless, these women use various coping strategies to mitigate the adverse effects of stigma (Ofosu-Budu & Hänninen, 2021; Taebi et al., 2021). Even though the ability to overcome these

unpleasant effects may vary individual wise, this variation corroborates the notion of resilience in navigating infertility stigma.

In the perspective of the couple, Brigance et al. (2021), and Brigance and Brigance (2023) stated that infertility is a reproductive trauma, a unique traumatic experience that disrupts the relational attachment of the couple, altering the communication patterns and their emotional expression. Subsequently, the couple might face numerous problems including, but not limited to, relationship instability and insecurity (Joseph et al., 2025), marital maladjustment (Chamorro et al., 2022), and unfulfilling sexual life (Boudreau et al., 2024; El Amiri et al., 2023). In addition, within the couple, infertility affects spouses differently, and response to the stressors from the environment occurs gender wise (Chamorro et al., 2024; N. Tang et al., 2024). Despair, guilt, shame, and isolation, were shared by the couple, but the woman experienced them more (Brigance et al., 2021), and their infertility condition hindered the couple's quality of life (Joseph et al., 2025). In sum, as motherhood and childbearing are a culturally sanctioned role, managing infertility deals with related stigma and psychological effects including mainly, anxiety, depression, emotional distress, and self-esteem issues.

**The Interplay between Spirituality and Resilience in Coping with Infertility Stigma**

Resilience as a resource for coping with adversity (Vioreanu, 2021) and enhancing quality of life (Mokhtari et al., 2022) is correlated with spirituality (Schwalm et al., 2022), given that spiritual and religious beliefs strengthen resilience (Seth & Sachdeva, 2023). In addition, spirituality as a guiding factor in navigating life challenges presented as a pathway to resilience in the study by Howard et al. (2023). More, connectedness of spirituality and resilience, was reported in the study

by Schwalm et al. (2022) who found from a review and meta-analysis of 2468 articles, a moderate positive relationship between spirituality and resilience. As the literature consulted has shown scarcity in papers addressing both spirituality and resilience with regard to infertility, the review is made by critical thinking inferring from the case of the health sector.

***Resilience Enhancement with Spirituality***

Bagereka et al. (2023) hypothesised greater resilience for patients demonstrating high psychosocial-spiritual well-being and engaged 200 serious illness patients in a questionnaire-based study in the USA. They found significant relationship between psychosocial-spiritual well-being, mindfulness, and resilience. Even though the focus was on resilience and mindfulness, both constructs showed connections to religion, religious community, and meaning finding in the face of highly stressful situations, for psychosocial and spiritual well-being. This highlighted the good association of resilience and spirituality for the well-being of patients with life-frightening illness. The same is likely to apply to this study focusing on the well-being of women with infertility. The interaction of the two concepts is discussed hereafter.

Safara et al. (2024) evaluated in a questionnaire-based study, the role of spiritual health as predictor of stress and the resilience as mediator, in 105 Iranian women undergoing fertility care, and found that resilience and spiritual health reduced infertility-related stress. They commented that spiritual health gave hope and meaning to people's lives and sustained them in the face of problems, thereby creating a positive attitude towards life, that increased their resilience. This infertility-related study introduces the notion of spiritual health. Najafi et al. (2022) presented spiritual health as the fundamental of human health and a force

coordinating the physical, mental and social dimensions of the individual. It is useful for coping with adverse situations like a disease or infertility. The outcomes of spiritual health are well-being and moral development. Spiritual health is a sub-component of spirituality. The influence of Safara et al.'s (2024) study on this study is the potential of spiritual health in the realm of spirituality to generate increase in resilience of women with infertility.

In a cross-sectional study in Turkey, Üşenmez et al. (2022) explored the effect of spirituality on psychological resilience in 85 women suffering from breast cancer who had been undergoing chemotherapy and found that spirituality positively affected the psychological resilience of the study participants. They commented on spirituality as an important coping strategy in the face of a life frightening disease, and as important for the development of positive feelings towards life and health. Further, spirituality generated a sense of meaning and purpose as the women found in it the power to fight cancer, and this increased their resilience. Similarly, McFadden (2022) explored some coping patterns of older adults during the COVID-19 Pandemic, and found among many that they held their resilience along with their suffering, maintaining connections to their community of faith and holding on to a sense of meaning and purpose. For the interest of this study, the researcher assumes that spirituality positively affects psychological resilience of married women with infertility. More so, it is considered an important coping strategy in navigating infertility stigma and psychological effects. As such, spirituality generates a sense of meaning and purpose and becomes a source of strength that enhances the resilience of the women with infertility.

Shabani et al. (2023) explored spirituality and psychological resilience mediating the prediction of life satisfaction pattern on the basis of anxiety, in a cross-

sectional study with 100 people of age 60 plus with chronic disease in Qom, Iran. They found among others, spirituality, resilience and life satisfaction were all significantly related. They concluded that spirituality and psychological resilience could contravene the negative impact of anxiety on the health-related quality of life for the study participants. Notably, the effect of spirituality was stronger than the one of resilience in the found relationship. In the same trend, Piedmont et al. (2021), investigating the role of the numinous in a sample of 121 homeless men, stated that spirituality and religion were vital sources of resilience, which could provide individuals a way to carry on coping with high stress, hindrance and alienation. Equating these findings to the case of spirituality for the benefit of this study, spirituality and religion constitute a vital source of psychological resilience, which negates the harmful impact of anxiety on infertility-related quality of life.

Pirhadi et al. (2023) conducted a study on the positive association between spiritual intelligence and the individual's adaptation and growth in the face of difficulties, engaged 162 Iranian infertile couples. This was a cross-sectional study to investigate the relationship between resilience and spiritual intelligence. The results show that spiritual intelligence positively correlated with resilience which generated in people the ability to efficiently cope with and psychologically adjust to infertility related problems. Likewise, Mokhtari et al. (2022) turned their investigation to the connections between infertility characteristics and spiritual intelligence and resilience. Working with 162 couples with infertility in Isfahan, Iran on the basis of questionnaires, they commented that dealing with infertility problems seemed to largely depend on personality characteristics; individuals with higher spiritual intelligence and resilience stand more effective in coping with infertility. These studies on infertility introduce the concept of spiritual intelligence which is different

from the one of spirituality, but enables individuals to put spirituality into action in using it to enhance daily interactions and problem solving (Pinto et al., 2024). Spiritual intelligence strengthens resilience and generates the ability to cope effectively with infertility.

Some spiritual practices contributing to resilience are highlighted in the study by Jaeger et al. (2021) examining the relationship between spirituality and resilience among four groups of public first responders, considering spirituality as part of resilience in the face of hardship. They found among others six practices that sustained spirituality as prayer, religious service attendance, participating in religious study groups, exercise to maintain spiritual well-being, outdoor activities to feel part of the world, and spending time in nature. In the same vein, Prazetyo et al. (2024) analysed the impact of religious well-being on family resilience in terms of family spirituality during the COVID-19 Pandemic. The study engaged 243 participants and noted that prayer, relaxation, religious book reading, learning from spiritual guides, and associating with like-minded people, are practices that strengthen one's spirituality. They observed the significant role played by spirituality in enhancing the individual's ability to endure hardship, which increases their resilience.

Campbell and Bauer (2021) examined the nexus of Christianity and resilience within helping professions through a scoping review, and reported spiritual practices among the emerging themes. In several articles, they found among others, spiritual transformation, spiritual coping, as well as commitment to spiritual values and practices as sustaining resilience. They defined spiritual practices as scriptural passages, scriptural contemplation, Bible reading, meditation, religious readings, positive coping scripture, Christian mindfulness, prayer, prayers of adoration, thanksgiving, religious ritual, Church attendance, worship services, Church

involvement, training in learning from spiritual examples, and seeing God as a faith companion. Putting in parallel Campbell and Bauer (2021) and Jaeger et al. (2021), the specific spiritual practices that contributed to resilience could be summarized into prayer, interaction with religious books (example, the scriptures), associating with like-minded people (example, involvement with the church community), learning for growth (example, church or service attendance), relaxation (example biblical meditation), and seeking God as faith companion.

### *Spiritual Growth from Resilience*

In literature, the influence of resilience on spirituality is rather less frequently addressed than the opposite. Agarwal and Sharma (2026) remarked that studying resilience and spirituality is still theoretically complex, due to diverting perceptions. While the positive influence of spirituality on resilience is well recognized, spirituality is only attributed to general developmental processes and not to resilience. Nevertheless, Salgado-Lévano et al. (2024) reported the relationship between spirituality and resilience in both directions, and specifically indicated that resilience helped in spiritual readjustment. In the same vein, the study by Hatami and Shekarchizadeh (2022) found that resilience mediated spiritual health and happiness. On the basis of these studies, it can be concluded that resilience does have a positive effect on spirituality. In such perspective, this study considers spirituality-resilience interaction in coping with infertility stigma as spiritual practices enhancing resilience and resilience nurturing spiritual growth.

## Support Structures for Married Women Managing Infertility Stigma

Social support is a fundamental form of human interaction essential to the human experience (Drageset, 2021). In a study conducted by Ojedokun (2021), it was established that spiritual support influenced the coping ability of couples living with

infertility. In such perspective, to discuss support structures for aiding the coping with infertility stigma, the constructs to examine include, support systems, church-based support systems, community involvement, and effectiveness of support structures. The common functions of social support were emotional support, being part of a social community, being respected and valued, getting practical help, and getting information and guidance (Ruihua et al., 2025). Social support gave account of the cognitive/functional qualitative aspects of human relationships that involved family, friends, colleagues, or an organization (Drageset, 2021). For example, Esan et al. (2022) in Nigeria found in their study, participants testifying of families including in-laws being supportive with prayer, fasting, and encouraging words. Mpono et al. (2024), state of most women turning to work or prayer, when facing a lack of social support due to the perception of infertility.

***Social Support and Mental Health***

Empirical works highlighted the protective role of social support on mental health (Acoba, 2024). On the same, Ruihua et al. (2025) found the positive effect of social support on emotional and psychological wellbeing. Likewise, Bedaso et al. (2021) from a review on social support with regard to mental health problems during pregnancy found that low social support held the risk of depression, anxiety, and self-harm for the women. Similarly, Liu et al. (2021) investigating social support as a moderator in associating risk perception with mental health found social support from family and friend protection against depression and PTSD during the COVID-19 pandemic. In the same line, An et al. (2024) found that family support increased social wellbeing. Thus, social support is crucial for women in critical situations.

### *Church-Based Support Systems*

Church-based social support is a specific social support permitting people who participate in religious activities to gain access to social networks including support from members of the religious organization according to Formoso-Suárez et al. (2022). They distinguished four supportive domains as material, instrumental, emotional and cognitive. In the same perspective, Hou et al. (2023) reported that religious engagement brought people to a platform of interaction where they received emotional or tangible support, particularly beneficial for their well-being. The strong social bonds established during interaction encouraged them to maintain hope in the face of hardship. Thus, Dutra and Rocha (2021) stated that in the face of traumatic events, church-based support could help establish connections between the individuals and their family as well as their faith communities, and benefit their mental health as a result.

In the field of health care, religious support was characterized as spiritual care, religious care, or religious advisement, according to Dutra and Rocha (2021). First, they stated that in the face of traumatic events, religious care involves religious leaders performing rituals using objects and forms of worship, to reconnect the victim with his beliefs and values or with God. Sharing this approach, Fuller (2022) included rituals relating to faith traditions in the practices he suggested for pastoral care for people facing loss and grief. Likewise, from the case of miscarriage as example of reproductive loss, O'Donnell (2023) also shared the idea of rituals as a marker of the loss and in addition, underlined the necessity to set spiritual practices that have the potential to profoundly impact the individual with loss. Second, Dutra and Rocha (2021) stated that when religious care is individualized, it becomes spiritual care, where the individual is accompanied and emotionally supported in

order to reconnect him or her with his or her spiritual beliefs and values, and not necessarily involving religious objects and symbols. Thus, spiritual care helps in resilience. Third, religious advisement refers to religious features that can impact the treatment.

Fuller (2022) suggested some practices for pastoral care in the face of loss and grief, that entitled infertility as a loss (Brigance & Brigance, 2023) for caring pastoral response. Indeed, in the infertility management process, women need support as it is a multifaceted life crisis. Fuller's (2022) suggested practices include lament, where individuals and communities are given room to freely express hurting feelings as well as relational care for the one with loss; meaning-making, where the pastoral caregiver offers compassionate accompaniment; and rituals relating to faith traditions. With regard to infertility, Henkel (2022) pleaded for a merciful accompaniment, where the dignity of the woman and her husband is acknowledged, and her identity preserved, equating infertility to circumstances of life. Meaney (2023) in a similar view, called for compassion and help for the woman with infertility to grieve her issue and initiate the healing process before engaging in addressing any unethical coping strategy. From the perspective of health care providers, Khalajinia et al. (2021) highlighted the necessity to pay attention to the emotional and psychological needs of patients and respect for their human dignity, when providing spiritual care. In addition to pastoral care, the support of the individual with infertility requires faith-based counselling for addressing psychological issues. Nganyu (2025) reported that combining psychological techniques with theological insights in interventions yield improved outcomes in anxiety, depression, relational conflicts, and alike. This faith-based counselling may involve prayer, scriptures, religious symbols, and religious practices.

Engaging in personal prayer and seeking spiritual guidance represented positive coping strategies that yielded decreased levels of distress and anxiety (Ndinelao-Kalomo et al., 2022). Prayer, an important practice in religious practices is a typical coping strategy adopted by many and a type of religious coping strategy for mental health issues (Taylor et al., 2021). In the study by Keten-Edis et al. (2024) in Turkey, women with infertility adopted among others, traditional religion coping strategy using prayer and prayer amulets. Ironson and Ahmad (2023) in a USA nationwide sample study on people with chronic illness found that frequent prayer could help develop a sense of hope, optimism, and peace and promote survival. Prayer, frequency of prayer, and frequency of religious meetings attendance positively influenced the outcome. In church communities, people practiced prayer requests as a sign of great involvement and mutual trust, and equally, emotional investment (Taylor et al., 2021). Thereby, people can build prayer support groups to face their current challenges. In this study, exploring church-based support systems included pastoral care, prayer groups, and faith-based counselling programs in the church.

***Community Involvement***

In the context of the church, the faith community is the family needed for integration of spiritual and emotional health in promoting wellbeing. Taking advantage of the situation of the COVID-19 Pandemic, Joseph and Hyde (2023) explained that church communities were haven of hope and a sense of belonging. Likewise, Hyde and Joseph (2023) reflecting on Sunday service attendance denial during the COVID-19 pandemic, reported that faith leaders played a significant assisting role on spiritual issues and in addition, they influenced people concerning their health issues. Strategies suggested to this end can provide support system for

people in despair as they call for some core beliefs from faith tradition, the faith experience in its structure and practices, and the connectedness within the faith community, as assets in constructing resilience and cope with the mental health challenge. Consequently, church leadership and the community in such role might provide people with infertility with support system.

Engaging in community benefits the individual in several aspects including connection with likeminded others, a sense of belonging, mutual caring in times of need, offering community expectations and social norms (Plante, 2024). It also involves observing life cycle rituals related to births, marriage, coming of age, sickness, and death (Plante, 2024). Religious service attendance may promote health and well-being (Chen et al., 2021b; Ritchie & Speed, 2025). The social bond created then is key for well-being (Brown et al., 2023). A lack of such involvement may expose the individual to the risk of loneliness and other mental health issues, such as expressed by Hutten et al. (2021), who insist on the importance of connectedness to human being, and Mann et al. (2022) who found anxiety and depression stemming from loneliness.

Community involvement can sustain a woman with infertility when she maintains inclusivity in church activities, and as a community member, she would benefit from peer encouragement. Research provides a growing body of evidence on the general medical and mental health benefits of belonging to a faith community (Perez et al., 2025). Even though increasing commitment to religion is associated to better outcome, there exist also negative aspects. Lloyd (2024) in their study identified these negative aspects as teaching, Christian tradition, or community minimizing the meaning systems of study participants, which led to negative affect,

stigma, isolation, and a weakening of their faith. The literature reviewed enlightens the tenets of support structures and a few specifics of the church.

In the literature reviewed, authors specify that faith-based counselling does not replace treatment. Infertility counselling is effective as a coping strategy. For example, infertility counselling has resulted in improved mental health as shown in the study by Golshani et al. (2021). It was an interview-based study with 56 pregnant women with a previous infertility history and who had gone through group CBT counselling, had experienced decrease in levels of the perceived stress and anxiety and improvement in quality of life. With a cognitive-behavioural lenses, Newman et al. (2023) reported that prayer provided to individuals a means of appraising life events and making sense of them, and contributed to their wellbeing (Faiza & Immanuel, 2025). It can be suggested that spiritual leaders should partner with healthcare providers to effectively meet the psychological needs of their patients for holistic care.

**Faith-Integrated Interventions for Married Women Facing Infertility Stigma**

Istratii and Ali (2023) highlighted the importance of faith-based interventions theologically rooted and trauma-informed for victims of adverse situations such as intimate partner violence. Lasek (2023) shared the same view on women with infertility, in exploring a Christian woman's experience from clergy counselling in a local church. In a similar perspective, to recommend faith-integrated interventions in order to improve coping mechanisms for married women facing infertility stigma, there is need to address intervention strategies, community education, and policy recommendation.

***Intervention Strategies***

This study sought to address infertility stigma along with spirituality and resilience. Consequently, the intervention strategies covered the three areas including, raising awareness on infertility stigma, setting programs for enhancing resilience, and promoting faith-based mental health interventions for women with infertility with care to integrate their spiritual needs, based on their Christian faith. In the area of mental health, Humeniuk et al. (2023) from a review of scientific articles on the treatment of emotional consequences of infertility found that the most frequently recommended psychosocial mode of intervention is cognitive behavioural therapy (CBT) and stress reduction techniques. Likewise, Koochaksaraei et al. (2023) found in their systematic review of articles addressing psychological intervention on infertility, the effectiveness of intervention in improving the mental health of study participants in all studies reviewed. Consequently, they suggested the most frequent psychological approach found in their review which were cognitive behavioural therapy (CBT), mind-body interventions (MBI), and stress management skills. Brigance et al. (2021) proposed emotionally-focused couple therapy in order to take the direction of meaning-based coping strategies. A faith-based mental health intervention program would integrate these techniques and Christian faith-related features, as well as pastoral care.

Resilience for women with infertility acts as an undefined protective factor against infertility-related distress that can improve the quality of life (Liu et al., 2024). It is the process of giving positive response and adapting well before a traumatic event; and one that yields self-esteem, self-efficacy, active coping skills against stress, and good quality of life (Ni et a., 2022). Social support positively impacts on resilience (Ni et al., 2022). A resilience training program, would work to

develop mindfulness-based skills and learning coping mechanisms to navigate the emotional turmoil of infertility. This includes accepting the condition of infertility, practicing self-care, building a strong support system, seeking professional as well as pastoral guidance (Ni et al., 2022). A faith-based resilience training program would consider spiritual needs and promote spirituality as coping strategies (Dehghan et al., 2024). In sum, intervention strategies relate to faith-based mental health interventions, resilience training programs, and stigma-awareness workshops.

### *Community Education*

Following the awareness raising, there is need for community education to correct misconceptions around infertility and promote empathy towards women with infertility (Gerrits et al., 2023). On a specific aspect, Gezinski et al. (2021) raised the question of faith-based institutions which were supposed to be a source of support for individuals and couples with infertility, but meanwhile promoted traditional gender role and genetic parenthood. Consequently, there is also a need for informing, training, engaging, and collaborating with spiritual leaders, but with caution to their sensitivity to the question of ART (Chukwuka, 2025). In addition to addressing misconceptions about infertility, community education should consist of promoting empathy towards people with infertility in church communities.

### *Enhancement of Policies*

The WHO (2024a) stated that policies should seek equity and help ensure that all have access to safe and effective fertility care. In addition, and regarding ART, they called for reduction of the treatment cost in order to facilitate wide access. This study focusing on mental health have checked the existing church policies, the level of integration of mental health services or any mechanisms that facilitate and help with access to care. Faith-based organizations are known to provide mental health

care in Africa, even though the magnitude, the type, and the quality are out of control (Nanji & Olivier, 2024). Consequently, there may be a need for empowerment of the selected churches in the County of Zou to ensure good mental health care. Based on the research work of Mehlig (2021), who highlighted the necessity of pastoral care training, the need was expected to come to shore as church communities require to take new perception of infertility.

## Theoretical Framework

A theoretical framework is a logically settled and connected collection of concepts and constructions developed from one or more theories that a researcher makes to frame a study (Luft et al., 2022). It is a foundation of the research on existing theories to provide the structure and shape the study philosophically, epistemologically, methodologically and analytically (Chukwuere, 2021). The theoretical framework was selected regarding the major concepts in this study, namely, spirituality, resilience, and infertility stigma with the purpose of establishing the influence of spirituality and resilience on managing infertility stigma. To this end, the theory of the Satir Method that is a family system therapy and the Resilience Theory are integrated to mould the study. In the perspective of the two theories contributing collectively to reaching the research objectives, the key concepts useful for this study are discussed hereafter for each theory.

### *The Satir Model Theory*

The Satir Model is a comprehensive model for handling relationships with the self, the family, and the community (Chen et al., 2022). The Satir Model was developed by Virginia Satir from her extensive clinical work with families starting from the fifties (Chee et al., 2025; Piddocke, 2021). She is one of the pioneers in considering the family as a system (Chen et al., 2022; Loeshen, 2020). In addition,

her growth model framework developed in remediation of the Biomedical model was also a pioneering theoretical framework (Loeshen, 2020), as it pointed to the individual's resources for change instead of focusing on pathology for symptom reduction (Xian, 2022). The assumption in the background of this is that people potentially have within themselves the resources needed for change (Satir, 1988; Shao, 2021).

The Satir Model is an experiential family therapy based on a set of beliefs and theoretical assumptions about human nature (Xian et al., 2022). In such a perspective, another major assumption concerning change stated that it occurs within and outside the person (Piddocke, 2021; Xian et al., 2022). Satir believed in the human potential for growth in the perspective of change (Chee et al., 2025). Consequently, she developed her Therapeutic model, the Growth Model, as focusing on three areas for intervention, namely, the intrapsychic, the interactive, and the family-of-origin (Piddocke, 2021; Xian et al., 2022). One major purpose of the Satir's approach to therapy was to increase the self-worth and simultaneously grow the self of the person (Piddocke, 2021). With this purpose, the Satir Model sheds light on this study because self-worth is a critical issue for women living with infertility (Xie et al., 2023).

**The Concept of Self in the Satir Model Theory, Helpful in this Study.** Infertility is a life crisis that affects women's identity, sense of self, as well as meaning and purpose in life (Hommens-van de Steeg et al., 2025). Three key concepts of the Satir approach to therapy help to envision the self of the woman with infertility facing stigma and consequent psychological effects in this study. These include the self-value and the iceberg metaphor.

***Self-Value.*** Self-value is giving value to oneself independently of others' opinion. It expresses the scope of the feelings and thoughts that individuals have about themselves (Erkan et al., 2023; Satir, 1988). Okur (2020) stated that low self-value yields high levels of anxiety and low self-confidence. In addition to anxiety and low self-confidence, Erkan et al. (2023) extended the list of low-level self-worth's characteristics to including the individual been insecure, constantly regretful, past-focused, judgmental, and reluctant to communicate. The communication of low-level self-worth individuals is dysfunctional and uses the survival stances of Satir, namely, blaming, placating, being irrelevant, and being super-reasonable (Erkan et al., 2023; Satir, 1976). The concept of self-value helps to view anxiety as a core psychological consequence of infertility stigma, and lack of self-worth as always present with it. Specifically, with self-stigma, when the woman has internalised the dominant societal discourse on motherhood, she may subordinate her perceived value to others' opinion.

***Personal Iceberg.*** Satir conceptualized human experience as mostly internal as described in the intrapsychic system with the iceberg metaphor (Xian et al., 2022). The Iceberg Model depicts the structure of the self in Satir's perspective (Chee et al., 2025, Piddocke, 2021; Satir et al., 1991; Yalof, 2026). From down to top, the iceberg comprises of self, yearnings, expectations, perceptions, feelings about feelings, feelings, coping, and behaviour (Xian et al., 2022; X. Zhang et al., 2022). At its core, the metaphor holds the meaning that the most of a person is underneath the surface and only communication, verbal as well as non-verbal, emerge (Chee et al., 2025; Xian et al., 2022).

Three key human dimensions steam from the composition of the iceberg, namely, the interpersonal, the intrapsychic, and the universal-spiritual. The

interpersonal above the water line includes communication layers. The intrapsychic dimension includes the feelings, the feelings about feelings, the perceptions and beliefs, and the expectations layers. The universal-spiritual dimension includes the layers of yearnings and self (Chee et al., 2025; Xian et al. 2022; Yalof, 2026). The three dimensions of the iceberg represent the person as a multidimensional system. The harmonious interplay of the three dimensions yield congruence in the person (Piddocke, 2021; Satir et al., 1991).

**Satir Model and Infertility Stigma Management.** From the personal iceberg, the behaviour layer in the interpersonal dimension represents actions and story line (Xian et al., 2022). These are stories that individuals communicate about themselves and others (Piddocke, 2021). In the context of infertility, self-stigma and social stigma occur in the nexus of people in the society, on the basis of beliefs and discourses about gender role and motherhood. The woman then devalues her Self with regard to the perception of inability to reach the level of expectations of the society. Anxiety and low-level of self-worth nurture unhelpful coping strategies and lead the woman with infertility to avoidance attitudes such as self-isolation or social withdrawal. These women also react and respond to social stigma by developing various types of emotion with psychological effects such as stress, anxiety, or depression.

In the intrapsychic dimension, the layer of feelings expresses joy, excitement, enchantment, hurt, anger, fear, sadness (Chee et al., 2025; Xian et al., 2022). Women with infertility have rather feelings of hurt, anger, fear, and sadness in the face of infertility and related stigma. The layer of feelings about feelings depicts decisions about feelings (Chee et al., 2025; Xian et al., 2022). The feelings about the feelings of women with infertility will show in their coping strategies. The layer of perceptions

informs on beliefs assumptions, mind-set, subjective reality, ideas, thoughts, and values (Chee et al., 2025; Xian et al., 2022). The perceptions of women in infertility may lead them to self-stigma and concordant coping strategies, or effect on their resilience.

The layer of expectations expresses expectations of self, of others, and from others (Chee et al., 2025; Xian et al., 2022). Women with infertility mainly expect support from others. The layer of yearnings in the universal-spiritual dimension includes, but is not limited to love, acceptance, belonging, creativity, connection, freedom (Chee et al., 2025; Xian et al., 2022). From the literature reviewed, a woman with infertility is yearning for having a baby, for being loved and accepted and treated with dignity as a person, not as an infertile woman. She is yearning for fully belonging to the society, she is yearning for free and full connection with the society.

The layer of the self refers to life force, spirit, soul, essence, being (Chee et al., 2025; Xian et al., 2022). This tells of the spirituality of the women with infertility. If it is anchored in the life force, the self will achieve congruence. And with a high level of self-worth, the women will adopt positive coping mechanisms and achieve great level of resilience in the face of infertility stigma. It is noteworthy that aligning emotions, self-awareness and behaviour, Xu (2022) commented that the layers underneath the surface in the Satir's personal iceberg are not static, and interactions continuously occur between the adjacent upper and lower layers up to the maximum self-worth of the person within the frame of his ability and cognition. The survival coping mechanisms developed by the woman facing infertility will evolve accordingly.

**Satir Model and Spirituality in this Study.** From the personal iceberg, yearnings and connection with a universal life force constitute the universal-spiritual

dimension of the Satir Model, where Satir called for a connectedness to the person's intrinsic spiritual and essential worth (Satir et al., 1991). For Satir, people are essentially good and dysfunctional behaviour occurs when something in the human being is denied, projected, ignored, or distorted (Satir, 1976). Therefore, people have the ability to grow from an inner strength and motivation (Satir et al., 1991). Satir refining her analysis at later stages of her work, stated that human essence was spiritual and posited spirituality as the people's connection to the universe and basic to existence (Satir, 1988). Satir's implicit philosophical position was humanism that has an essentialist base, as the beliefs in the essence and spiritual nature of humanity were the fundamental principle in her therapeutic system (Piddocke, 2021).

Looking at the Satir Model from the perspective of the Bible, the interest of the theory for this study resides on its stress on the value and uniqueness of persons. For Tam (2006), Satir sees the act of birth as a spiritual phenomenon and human person as from divine origin. Consequently, each person longs for connection with the creative life force. Tam (2006) found Satir's perception of human person in agreement with Christian anthropology and favouring Divine-human relationship. In this study which is framed in the church, the Satir's view of spirituality as the essence of human person represents a potential paradigm in conceptualizing spirituality. The two concepts of yearning and self fully explain the case and set the stage for the meaning making of the woman from the church, living with infertility.

**Strengths and shortfalls of the Satir Model in this Study.** From the discussion above, the Satir Model provides as of the structure of the Self, a clear explanation of the mechanisms of infertility stigma, the self-stigma as well as the social stigma. Consequently, it sheds light on the resulting psychological effects. The effect of spirituality on infertility stigma appears a mitigating one, as the individuals

achieve congruence when spirituality is anchored in the life force. And when congruence is achieved, it will enable the choice of positive mechanisms in managing infertility stigma. The concept of Self supported by the personal iceberg provides a framework for education in prevention and clinical intervention on women for coping with infertility stigma.

Regarding spirituality, the life force could be called by many names including: life energy, universal life force, universal life energy, spirit, essence, inner treasure, spiritual energy, the self, I am (Satir, 1988). Despite this universalist stance of Satir, which is a controversial issue within Evangelical Christianity (Ndzi, 2024), the theory of the Satir Model helps to depict the concept of spirituality in the perspective of marriage and family therapy of this study. Unfortunately, the model failed to provide enough opening for conceptualizing the resilience of the women with infertility. However, critically thinking, from the model, resilience as the capacity to navigate adversity and maintain functioning, would emerge not simply from individual traits, but from congruence across self-dimensions and supportive systemic interactions. Women who maintain connection to life force through spiritual practices, who receive validating support across contextual and interactional dimensions, and who can express feelings and yearnings congruently would thereby demonstrate resilience despite infertility challenges. The Resilience Theory has helped to clarify the tenets of the concept useful in this study.

***Resilience Theory***

The psychological study of resilience trace back to the psychologist Norman Garmezy from his pioneering works on how adversity affects mental illness (Garmezy,1974; Mahdiani & Ungar, 2021). The concept was established to describe differential resistance to psychosocial risk experiences (Rutter, 1999). Later, with

positive psychology, the focus shifted from mental illness and risk factors to mental health and protective factors that support positive outcome in the face of adversity (Pearson et al., 2025). Key contributions to the Theory of Resilience, in addition to the work of Garmezy (1991) who conceptualized recovery and maintained adaptive behaviour subsequent to stress, were provided by Michael Rutter, Norman Garmezy, Emmy Werner, Suniya Luthar, Ann Masten, and Michael Ungar (Pearson et al., 2025).

**Key Concepts of the Resilience Theory Useful in this Study.** For Rutter (2006, 2013) resilience is an interactive concept with positive outcomes despite adversity, presenting variation among individuals. Werner (1997) saw resilience as having good outcome despite risk, demonstrating competence under stress, and recovery from trauma. Luthar et al. (2000) conceptualised resilience as a dynamic process of positive adaptation in significant adversity. Masten (2011, 2014) stated resilience as the capacity of a dynamic system to adapt or recover from threats. Ungar (2011, 2021) critiqued other definitions as narrow, and posited resilience as multisystemic and culturally relative. Key components of resilience shared by these theorists include the possibility of adaptation for individuals exposed to a risk. In addition, resilience is not a singular trait enabling them to bounce back from adversity, but it stems from the interaction between the individuals and their environment, facilitating adaptation.

Rutter (2012) observes that resilience is a common adaptation when individuals access appropriate resources. Luthar et al. (2000) discussed resilience in terms of positive adaptation, thinking of an interaction with the individual's environment. Masten (2014) brought resilience beyond endurance to posit it as adaptation. Ungar (2021) advocated multi-systemic resilience, connecting biological,

psychological, social and ecological adaptations in the face of adversity. Prior to this, four principles from Ungar (2011) gave better insight into the conception of resilience: the shift of focus from the individuals to their environment; the interplay of factors influencing resilience; resilience appraisal as processes rather than individual traits; and cultural relativity meaning that resilience is shaped by cultural and context-specific norms. In sum, resilience results from a dynamic interaction between individuals and their environments with positive outcomes despite adversity, where resilient individuals display adaptive behaviour and strength under stress (Pearson et al., 2025).

**Resilience and Infertility Stigma in this study.** From the review in the previous section, infertility as a phenomenon is an advert condition in the developmental journey of women. The environmental stressors of women with infertility include mainly stigma. Thus, resilience in navigating the stigma of infertility is meant to be a process in which women are responding positively, seeking the outcome of adapting to internal and external constraints and maintaining good functioning.

**Strengths and Shortfalls of Resilience Theory in this Study.** The Resilience Theory helps to envision the mechanism and the process of resilience in the second objective of this study which is to assess the role of resilience in managing the psychological effects of infertility stigma. Equally, resilience is well understood to handle in the third objective, the interplay between spirituality and resilience. Indeed, Wang et al. (2025) show that resilience can be improved by intervention since it is modifiable. There are critiques over the concept of resilience. For example, Mahdiani and Ungar (2021) showed concerns and contemplate the possibility of resilience masking vulnerability and thereby hindering the work on risk. They

referred to the types of resilience, the degrees of risk, and the contexts, to differentiate between functional and less functional adaptation. Nevertheless, the theory of resilience presents no shortfall in this study.

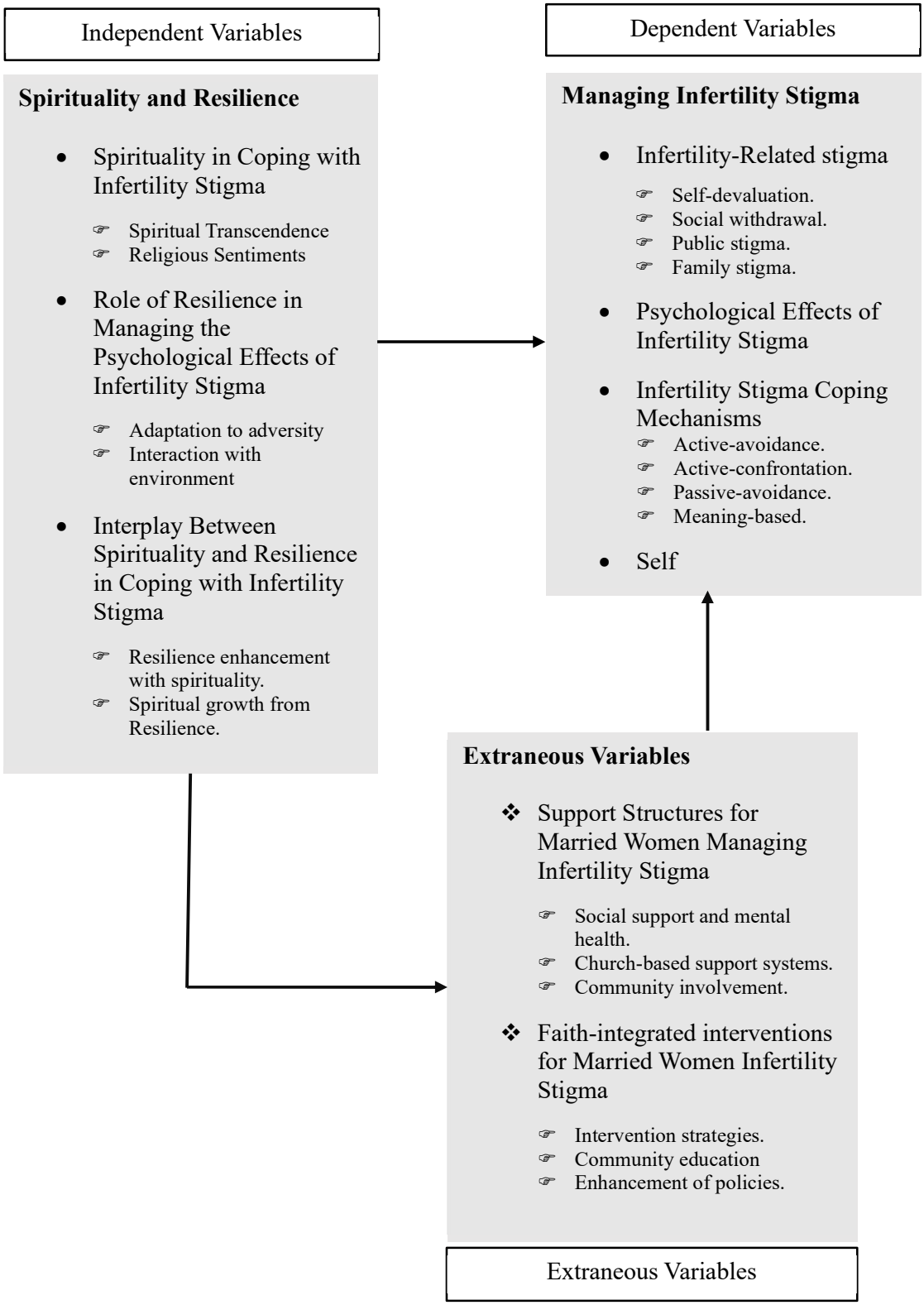
The two theories, the Satir Model theory and the Resilience Theory, help to clarify the five objectives in this study and design a suitable conceptual framework.

**Conceptual Framework**

A conceptual framework is the researcher's consideration of the factors and variables that are involved in the study and the essence of their interrelatedness (Luft et al., 2022). In this study, the concepts are rooted in the Satir Model and the Resilience Theory's frameworks. The study investigated spirituality and psychological resilience as independent variable, and managing infertility stigma as the dependent variable. The relationship between them is depicted in the framework, Figure 1.

**Figure 1**

*Conceptual Framework*




Source: Researcher, 2025

Figure 1 translates the research questions. It shows the independent variable in relation to the dependent one and some extraneous variables affecting the said relationship. An independent variable is the one the value of which has effects on other variables; and the dependant variable is the one the value of which is influenced by other variables (Andrade, 2021). An extraneous variable is an unmeasured variable that affects cause and effects relationship (Kaur & Mittal, 2021). Infertility management support structures and faith-integrated interventions were the extraneous variables in this study.

From the literature reviewed and the insight from the theories on the variables, infertility yields stigma and women develop coping strategies where spirituality takes part. Likewise, women with infertility show resilience that mitigates the psychological effects of infertility stigma. Most of the time, the literature reviewed showed spirituality enhancing resilience, but there was also evidence of resilience impacting spirituality for spiritual growth with anticipated effect on infertility stigma coping strategies. Support structures set the stage for all sort of support, including also spiritual support, which enhance resilience and spirituality. Faith-integrated interventions mitigate mental health issues.

**Synthesis of Research Gaps**

The literature review reveals several gaps: empirical, methodological, conceptual, theoretical, structural, and contextual. The present study is interested mainly in the empirical, the structural, and the contextual aspects. The literature reviewed show the limited number of studies reporting the phenomenon of infertility and the related stigma in African countries. In Benin, the one done by Douvi (2022) explored the topic with 17 married women in the sub-Counties of Mono and Couffo, and commented that the issue is one of the most important affecting women and it

spills far over the geographical limits of her investigation. To the knowledge of the researcher, no study has been conducted on the topic in the present study area, the Zou County, Benin.

In addition, the reviewed literature shows a nation-wide gap about intervention as the issue is understated at continental as well as national levels. More, the women in the study of Douvi (2022) experience this lack of intervention and plead for psychological support. Furthermore, due to the scarcity of the scholarly address of the issue in the research area, there is a need for a qualitative approach allowing for gathering people's perception of the phenomenon of infertility and related stigma in the County of Zou as well as their perspectives. Yet the need of quantifiable information is also great regarding the intention of the study which targeted to widen the potential for intervention. To this end, the context of the church gave ground to the study participants for expressing their spirituality and its relatedness to resilience in informing their coping strategies in the face of infertility stigma.

**Chapter Summary**

This chapter was devoted to literature review on the research objectives, starting with an overview of the topic. The review has shown that the topic has not been explicitly addressed putting together the variables investigated in the present study. The objectives include spirituality and coping with infertility stigma, and the role of resilience in managing the psychological effects of infertility stigma. In addition, the interplay between spirituality and resilience in coping with infertility stigma, the support structure that aid in coping with infertility stigma, and faith-integrated interventions to improve coping mechanisms have been reviewed. The theory and the literature reviewed helped to draw and comment on the conceptual

framework before synthetizing the research gaps. The next chapter focuses on the research methodology.

# CHAPTER THREE: RESEARCH METHODOLOGY

## Introduction

This chapter presents the methodology applied in the research. The strategies in the study design, and the study population of the study are discussed. The sample size and the sampling methods, the types of data collected, the methods and procedures of data collection, as well as data collection instruments are also described. Reliability, validity and instruments pretesting are discussed followed by data analysis strategies and presentation. Ethical considerations relevant to the study are presented and the chapter ends with a summary.

## Research Paradigm

A research paradigm is a set of shared beliefs that are held by a research community as self-evident about the nature of truth and scientific knowledge in their research area (Melozik, 2021). Pragmatism is the paradigm identified for this research. Pragmatism focuses on beliefs that relate to action (Dube et al., 2024). As a paradigm, it has the potential to provide theoretical insight to social work research, as it offers an organizing framework of experience and action for reaching to the knowledge of the world (Dube et al., 2024). The pragmatic worldview allows for pluralistic approach, in order to yield much knowledge on the issue under investigation (Allemang et al., 2022). In addition, the pragmatic view consents for integration of postmodern approach in a mixed-methods perspective, allowing for worldviews, multiple methods, different assumptions, and different ways of data collection and analysis (Allemang et al., 2022).

## Research Design

A research design is the framework or the plan outlined to systematically guide the research in the data collection, the measurement, and analysis (Kouam,

2024). As an appropriate framework for the study, the research design includes, but is not limited to the decision for the research method that will inform on the procedure for gathering information relevant to the research (Ghazinoory et al., 2025). The purpose of this study was to determine the effect of spirituality and resilience on managing infertility stigma in the County of Zou. For such purpose, there is a need for a method that integrates qualitative and quantitative data to reach results and perform interpretations that expand comprehension (Wasti et al., 2022). Consequently, this research was conducted with a convergent parallel mixed-methods design.

Both qualitative and quantitative data were collected simultaneously, analysed separately, before being merged to compare or validate findings (Creswell & Inoue, 2024). The inquiry was based on the assumption that collecting diverse types of data provides, improves, and expands to the best, the insight into the research problem than either qualitative or quantitative data alone (Creswell & Inoue, 2024). The research was framed as correlational, as it sought relationships between variables suspected to influence each other (Slater & Hasson, 2024). The design set the independent variable as spirituality and resilience, and the dependant variable as infertility stigma management.

The quantitative data allowed the researcher to find the general trends in the datasets and the relationships between the variables (Lim, 2025b). These were mainly the influence of spirituality on coping mechanisms in managing infertility stigma; the role of resilience in mitigating the psychological effects of infertility stigma; and the influence of the interaction of spirituality and resilience on coping strategies in mitigating infertility stigma among married women from evangelical church in the County of Zou. The qualitative data helped in the exploration of the subjective

experiences, perspectives, and meanings that women attribute to the phenomenon of infertility (Lim, 2025a). These helped the researcher to characterize the expression of infertility-related stigmatization in the study area and the psychological effects. In addition, the qualitative data gave account of the occurrence and role of support structures and faith-integrated interventions in helping married women in the selected Evangelical Churches managing infertility stigma.

As infertility is a sociocultural issue, the convergent parallel mixed-methods study design proved the best-suited, allowing examination of the management of related stigma, considering spirituality and resilience of the study participants. In sum, the found correlations were deepened by the contextual meaning of infertility and related stigma. In addition, the study participants' perspectives on the findings widened the knowledge of the phenomenon of infertility and related stigma in the study area. Moreover, from unmeasured aspects, new research perspectives were opened (Creswell & Inoue, 2024). Thus, the design using both quantitative and qualitative methods of inquiry helped the researcher to answer the research questions, embedding them in the study area, with the opportunity to position the findings with the literature reviewed and the conceptual theories.

**Study Population**

The research population or target population, is the entire group of individuals, objects, or events that share specific characteristics on which the study is focusing in order to draw conclusion about the said group (Ahmad et al., 2023). The population studied in this research was composed of the married women attending Evangelical Church Assemblies, who were currently in a condition of infertility. Their church leaders were also part of the study. These women were those aged 18 to 60, married for 2 to 40 years, and who had not been able to conceive after 12 months

of regular and unprotected intercourse. The married women aged below the age of 18 or above 60 years were excluded. The study was conducted in the County of Zou, Benin including nine sub-counties, populated with several Evangelical Church Assemblies.

**Sample Size**

A sample is essential in research to address the challenge of studying an entire population. It should be appropriately sized and representative to allow for generalization of the findings (Ezeugwa et al., 2022). Mainly, the projected significance level of the results, the expected effect size, and the structure of the model all helping in power analysis, should guide the determination of the sample size (Ezeugwa et al., 2022). In this line, the sample size for the survey was computed with the Cochran's formula (Ahmed, 2024),

$$n = Z^2 P(1-P)/d^2$$

Where,

n is the sample size,

Z is the Z-score, the statistic corresponding to the level of confidence,

P is the expected prevalence,

d is the margin of error.

In this study, the researcher considered a confidence level of 95%, corresponding to a Z value of 1.96. A value of 5% was considered for the margin of error. P was estimated at 50% (=0.5). Then,

$$n = (1.96)^2*0.5*(1-0,5)/(0.05)^2$$

$$n = 384.16$$

The sample size yielded by the model was 384 participants to keep the study results in the frame of the chosen margin of error and level of confidence.

In addition to the survey, there were two focus groups gathering 15 Church leaders. Another focus group gathered 8 selected women aged 51 to 60. The focus group size was based on Hennink and Kaiser (2022). Else, 16 female leaders and 14 local pastors were interviewed. As in mixed method research, the sample size is considered as the minimum required for both the quantitative and the qualitative features in the research, the sample size in this research was 429 participants.

## Sampling Methods

A sampling method is the process of selecting a subset from the target population (Ahmed, 2024). It is critical for the research regarding external validity and generalizability of the findings (Ahmed, 2024; Makwana et al., 2023). Due to the kind of data required in this study, multiple sampling procedure in three stages was applied.

### *First Stage: Simple Random Sampling and Expert Sampling*

In the first stage, and in order to avoid any stigmatization issue about the study area at the publication of the study results, the County of Zou was selected out of the 12 in the country by simple random sampling. The Evangelical Church group was chosen by expert sampling among the variety of churches in the country. African Evangelical Churches are of two types in Benin: The Trans-Denominational found within Protestantism, including Baptists, Pentecostals, and more (Nkansah-Obrempong, 2016), and African-initiated Independent Churches (Oduro, 2016). Within these two categories, the mainstream groups were selected to participate in the study.

The denominations that were selected for this study were: “Eglise Evangélique des Assemblées de Dieu” (EEAD), “Union des Eglises Baptistes du Benin” (UEBB), “ Eglise Africaine du Réveil” (EAR), “Evangélisation de la Parole

de Christ au Monde" (EPCM), “Mission Evangélique des Affranchis” (MEA), “Mission Evangélique de la Foi” (MEF), “Union Renaissance d’Hommes en Christ” (URHC). The origins of these denominations are shown in Table 1.

**Table 1**

*Church Denomination Sample Size*

| Church origin | Church Name | Number of Women to Survey |
|---|---|---|
| Foreign Western Mission-planted denomination | EEAD | 76 |
| | UEBB | 47 |
| | Total 1 | 123 |
| Local African-Initiated Independent Evangelical Church | EAR | 68 |
| | EPCM | 53 |
| | MEA | 43 |
| | MEF | 40 |
| | URHC | 57 |
| | Total 2 | 261 |
| Total number of women to survey | | 384 |

*Note*. Local African independent Evangelical Churches originate from the study country or a neighbouring country.

***Second Stage: Simple Random Sampling and Snowball Sampling***

In the second phase, starting from the women with infertility found in each randomly selected Church, snowball sampling was applied. Snowball sampling allows for getting a sample starting with an identified voluntary participant who leads the researcher to another known participant, and the referral continues until the sample size is attained (Taherdoost, 2021). In sum, for the recruitment of the women for the survey, the random sampling applied to the local churches in the sub-counties, followed by snowball sampling within congregations. Table 2 displays the survey sampling figures.

***Third Stage: Criterion Sampling for the Qualitative Data***. In the third phase, after the survey, 8 of the surveyed women were selected by criterion sampling for a focus group discussion. The inclusion criterion was the age of the women, 51 to 60 years, and surveyed women aged below 51 or above 60 years were excluded. The

assumption was that between 51 and 60 years, women were at the end of their reproductive life, as the World Health Organization states of 45-55 years for menopause (WHO, 2024b). As well, they were supposed to have gained important experience on the matter of infertility and stigma management. More, they probably have had opportunities to experience church policies on the matter.

In addition to this category of the focus group, the first leaders of some surveyed communities were chosen again by criterion sampling and gathered to constitute two other focus groups of 7 and 8 members. The inclusion criterion was that the identified leader had been in the area, not necessarily at the head of the community, for at least five years, and any other church leader not fitting the criterion was excluded. The assumption for this criterion was that after five years, the church leader probably has a good or acceptable comprehension of the cultural traits and features specific to the area and that mediate worldview, interpersonal relationships, and resilience. Indeed, Ungar (2021) states of importance of the environment including context and culture, for resilience in navigating adversity by negotiating personal resources needed to develop prosocial coping behaviours.

For interviews, the criterion sampling method was applied. This concerned two categories of leaders in the church. Local pastors available and willing to participate were sampled and interviewed without restriction, and those who were not available nor willing to participate were excluded. The benefit of this was that in addition to amplifying qualitative information, they facilitated access to the women with infertility in their church community, as they normally have enough information about most congregants. The second category involved the female leaders of the women's fellowship in the church. Some of them were chosen for interview by criterion sampling with the criterion of belonging to the largest church community of

the considered denomination in a given sub-county, and any other women not fitting the criterion was excluded. The rationale behind their choice was that they were supposed to have interacted with several church women living with infertility, since from the practice of visiting fellow congregants, they are always well informed on women's conditions. In addition, they were supposed to be fully aware of church policies on the matter as well as the effectiveness of their implementation.

**Types of Data**

Information collection methods in research lead to two types of data; primary and secondary data (Ajayi, 2023). This study utilized primary data, incorporating both qualitative and quantitative elements. The qualitative part included women with infertility's subjective experiences in facing infertility and related stigma, their perceptions, meaning attribution, feelings, as well as other people's beliefs, attitudes, and perspectives (Lim, 2025a). The quantitative data give account of spirituality, resilience, and infertility stigma as well as psychological consequences and coping strategies. These two categories of data were integrated to effectively address the research questions (Creswell & Inoue, 2024).

**Data Collection Methods and Procedure**

Prior to data collection, six research assistants with counselling psychology background who were proficient in *Fon*, the primary local language of the study area, were recruited. After recruitment, the project was explained to them and before their involvement in the data collection, an informed consent form including a confidentiality agreement was submitted to their approval by signature after reading (see Appendix 1). The confidentiality agreement form was co-signed by the researcher (Appendix 2). Then, research assistants received training on understanding and administering the questionnaire prepared for data collection. For focus group

discussions, their role included assisting with recording the conversations and taking notes.

The collection of the primary data is the process by which the researcher gather data by herself for the purpose of her study and keeps the data inaccessible to anyone until it is processed with qualitative and/or quantitative approaches in the study and published (Taherdoost, 2021). In the convergent parallel mixed-methods design of this study, three methods were used to collect the data, the survey, the interview, and the focus group. The quantitative data was collected as instrument data, and the qualitative data was collected during the survey, the focus groups discussions and the individual interviews. Both forms of data were collected using the same variables (Creswell & Inoue, 2024). For the survey, the data was collected by researcher-administrated approach, due to the low literacy level of the women studied.

The research instruments were first acquired in French version and the questionnaire was translated from French or English into Fon and back-translated into French, to check for inconsistencies and make refinements until consensus was achieved. During the training, the research team worked on each question and each item to agree on the best way of presenting it to the women. Most of the time, the local church hosted the first gathering with the potential survey respondents. Then, they were duly notified on what was reasonably necessary to inform decision to participate, and guarantee their total freedom in agreeing. Next, a consent form assuring of confidentiality was submitted to their approval by signature after reading or explanation by the questionnaire administrator.

Then, the participants were given the choice of the date and the place for the survey. The women's answers were collected via Google Form. The survey lasted six

weeks and the required 384 responses were obtained. The interviews and focus groups were conducted by the researcher at various moments depending on the availability of participants. The same procedure was observed to guarantee the consent of the participants and their freedom to withdraw from the data collection process at any time without consequences. The discussions went smoothly and participants for the interviews or focus groups were willing to share openly their experiences. Women with infertility were delighted to be listened to, regarding their condition, and more eager to participate in the study.

**Data Collection Instruments**

The standardized instruments used for the quantitative data collection included the Assessment of Spiritual and Religious Sentiment (ASPIRES) to measure the spirituality; the COMPI Coping Strategy Scale (CSS) to measure the coping strategies; the Infertility Stigma Scale Short Form (ISS-SF) to measure stigma; the ten-item Connor-Davidson Resilience Scale (CD-RISC-10) to measure resilience; the short form of the Depression Anxiety and Stress Scale (DASS21) to measure the psychological effects; and the Rosenberg Self-Esteem Scale (RSES) to measure the self of the woman in the study. For the qualitative data, key variables from the scales were adopted and adapted to the research questions with the perspective to attain the research objectives. All instruments were compiled with the questionnaire for the survey (Appendix 4). The questionnaire for the survey included six parts aimed at answering the five research questions. The first part was devoted to the demographics with regard to infertility. The focus groups and the interviews investigated the same subjects.

### *The Standardized Instruments*

For the standardized instruments that were used for the quantitative data collection, the researcher sought permission and licensing from the creators for the Assessment of Spiritual and Religious Sentiment (ASPIRES – see Appendix X for permission agreement); the ten-item Connor-Davidson Resilience Scale (CD-RISC-10 – see Appendix XI for permission agreement); the COMPI Coping Strategy Scales (CSS – see Appendices XII.1 and XII.2 for both the request and the permission); and the Infertility Stigma Scale Short Form (ISS-SF – see Appendices XIII.1 and XIII.2 for both the request and the permission). This helped to have better insight into the tools and their administration through instructions or user manuals. Consequently, data was collected consistently, in accordance with the prescriptions from the instrument developers. Following the standardized instructions helped avoidance of bias in the process. The short form of Depression Anxiety and Stress Scale (DASS21) and the Rosenberg Self-Esteem Scale (RSES) are free of use, and did not require permission for use.

**ASPIRES.** The ASPIRES, a 35-item instrument composed of two subscales, the Spiritual Transcendence (23 items) and the Religious Sentiments (12 items) was developed by Piedmont (2010). Items in the scale are of a Likert type (5-point) ranging from 1 (Strongly Disagree) to 5 (Strongly Agree). Spiritual Transcendence, with 3 subscales namely, the Prayer Fulfilment, the Universality, and the Connectedness measures for example, the ability of the individual to feel part of a wider word. Religious Sentiments with 2 subscales namely, the Religious Involvement and the Religious Crisis, measures for example the individual's commitment and the importance given to religious practices. Age and gender are required for the analysis of the scale

**CD-RISC-10**. The CD-RISC-10, a unidimensional 10-item scale, was developed by Campbell-Sills and Stein (2007), as a measure of stress coping ability with a Likert type item (5-point) ranging from 0 (not true at all) to 4 (true nearly all the time). To administer the scale, the participants answer the items. The responses were coded and summed up. The total score ranges from 0 to 40 and is assessed as per quartile ranges. The scale is influenced by the study region and the nature of the sample (Davidson, 2020).

**COMPI CSS**. The COMPI CSS was developed by Schmidt et al. (2005) and Schmidt (2006). It is a four-dimension and 19-item instrument using a four-point Likert scale expressed by 1 (not used), 2 (used somewhat), 3 (used quite a bit), and 4 (used a great deal) for responses. The scores are summed up scale-wise for analysis. The four subscales were initially developed as part of a set of variables in a wider research design on the topic of infertility in the COMPI Research Programme. The aim was to assess the frequency of use of the subscales under a given fertility-related pressure.

The four coping mechanisms include the active-confronting coping (7 items), where the individual seeks information, talks to others, or express own feelings; the meaning-based coping (5 items), where the individual finds personal growth, re-evaluate priorities, or focuses on other aspects of life; the active-avoidance coping (4 items), where the individual distances himself (turns to work for example) or purposefully avoids triggers like children or pregnant women; and passive-avoidance coping (3 items) where the individual withdraws, feels helpless, or surrenders to the stress of the situation. To administer the scale, each respondent rated how frequently they use each strategy when facing fertility challenges (Schmidt, 2006; Schmidt et al., 2005).

**ISS-SF**. The Infertility Stigma Scale (ISS) was developed by Fu et al. (2015) to assess the perceived stigma and self-stigma – which can be feelings of shame, guilt, or loss of self-esteem – for Chinese women living with infertility. The scale including four subscales and 27 items was found reliable and valid to measure the levels of stigma experienced by Chinese women with infertility. Recently, the short version – the ISS-SF was developed by Li et al. (2025) with the same dimensions but 12 items using a Likert 5-point scale ranging from 1 (strongly disagree) to 5 (strongly agree). The short version of the scale is preferred in this study for practical reasons, since the structure is kept with good psychometric properties.

The 4 subscales include the self-devaluation (4 items) assessing irrational beliefs about self-worth and feelings of inferiority; the social withdrawal (3 items) assessing the fear of social interactions and the tendency to hide one's infertility status; the public stigma (3 items) evaluating the perceived discrimination or devaluation by the general public; and the family stigma (2 items) measuring perceived stigma, pressure, or gossip from family members and relatives. To administer the scale, the study participants responded to the items on the Likert scale. The scores were summed up to assess the perception of stigma by analysis (Fu et al., 2015; Li et al., 2025).

**DASS21**. The short form of the Depression Anxiety and Stress Scale (DASS21) was used. The DASS42 was designed to measure depression, anxiety, and stress as negative emotional states by Lovibond and Lovibond (1995). The DASS21, a shortened version is a three-dimensional instrument comprising 7 items per subscale, measurable with a 4-point severity/frequency scale applied as 0 (did not apply to me at all), 1 (applied to me to some degree, or some of the time), 2 (Applied to me to a considerable degree, or a good part of time), and 3 (applied to me very

much, or most of the time) as experienced over the past week. To administer the scale, the participants responded to the items, based on how they were feeling. Then the sub-scales were scored and summed up for analysis. The results were interpreted based on the recommended cutoff scores for severity assessment. These range from normal to severe.

**RSES**. The RSES, a unidimensional 10-item scale designed to assess the self-esteem of individuals aged 12 years and over was developed by Rosenberg (1965). Items are of a 4-point Likert type ranging from 0 (strongly agree) to 3 (strongly disagree). To administer the scale, participants gave answers to the items. These answers were scored and summed up. The total score of the scale ranges from 0 to 30 which is the highest score achievable. Higher scores indicate greater self-esteem. Cut-off scores are 0-14, indicating low self-esteem; 15-25 representing average self-esteem; and 26-30 pointing to high self-esteem.

***The Researcher-Designed Questionnaire***

The research questionnaire is a means of data collection in research, as a series of questions that serve to collect information from research participants to learn about their knowledge, beliefs, opinions attitudes, and behaviour (Ranganathan & Caduff, 2023). The questionnaire designed for the survey included six parts, beginning with demographics. A demographic questionnaire provides background information giving the description of the research sample (Call et al., 2023; Ziegenfuss et al, 2021). In this study, information collected included age, age of husband, age at marriage, age of marriage, and socioeconomic conditions (Nasrabad et al., 2024). There was also infertility treatment status.

In the succeeding parts of the questionnaire, there was researcher-designed qualitative questions following each scale. These permitted study participants to give

their perception of infertility and related stigma. In addition, they provided the psychological effects of the stigma that they experience as women with infertility. More, as Evangelical Church members, they told of the state and role of their spirituality in coping with infertility stigma. The survey gave them opportunity to share on the way their resilience helped them mitigate the psychological effects of infertility stigma. In addition, the survey was also interested in the interplay of spirituality and resilience in managing infertility stigma. The question of support structures and church policy on the issue of infertility were equally examined in terms of existence, content, implementation, effectiveness, user satisfaction, and yearning for improvement.

***Questionnaire for Focus Group Discussion and Interviews***

A focus group is a means of collecting in-depth qualitative data from research participants' experience, and in a group interaction on the considered topic (Poliandri et al., 2023). The focus groups were conducted through semi-structured questionnaires. The first focus group gathered the sampled church first leaders and set researcher's curiosity on their perception of infertility and related stigma. In addition, women's spirituality and resilience were examined with regard to infertility stigma and psychological effects. Mostly, the discussions with this group focused on the church policy about infertility in terms of existence, implementation, effectiveness, and perspectives of improvement. The second focus group gathered selected surveyed women aged 51 to 60 years. The concentration with this group was on the specifics of the culture perceptible in the church policy and church members' approach of the issue of infertility. Interviews followed the same perspectives.

**Reliability**

Reliability points to the stability and repeatability of an instrument (Olmsted, 2024). The internal consistency reliability measure used in this study is the Cronbach alpha, as it is the most appropriate, due to the use of Likert scale in the measuring of the scales (Bujang et al., 2024). Consequently, after pretesting the research instrument, the Cronbach alpha was calculated for each scale and subscale. The threshold of 0.7 considered acceptable in the most social sciences research (Olmsted, 2024) was adopted in this study. The same applied throughout the analysis.

**Validity**

In this study, the choice to use established scales for measuring the variables was beneficial for the reliability and the validity of the questionnaire since the scales have already been rigorously tested in previous studies. Their psychometric properties confirm that they are both reliable and valid, and using them can minimize the need for extensive validation processes (Hossan et al., 2025). The instruments used in this study illustrate this.

The Cronbach's Alpha values of ASPIRES in the initial development ranged from 0.54 to 0.95. In addition, the instrument showed incremental, construct, discriminant, and convergent validity. More, ASPIRES has been used in several research contexts (Piedmont, 2010; Piedmont, 2020). For example, Simkin & Piedmont (2018) developed the Spanish version (the short form) that sought to assess the reliability and the structural validity of the scale, with a sample of 185 university students of age range, 19-35 years. The Cronbach's alphas ranged from 0.77 to .92, and all items loaded significantly on the planned factors. The empirical data in this study adjusted well to the theoretical model of ASPIRES. Reliability and validity of ASPIRES are secured for this present study.

The CD-RISC-10 has been comprehensively investigated across various cultures, samples, and continents for its structure, reliability, and content validity. Subsequently, it appears to fit people of different demographics and occupations, as well as special samples (Nartova-Bochaver et al., 2021). For example, Tu et al. (2023) successfully tested the psychometric properties of the CD-RISC-10 with 3,129 Chinese military personnel members and concluded that it is a reliable and valid tool for assessing resilience. They found in addition that the scale can also predict mental health in that population. The reliability and validity of the CD-RISC-10 are used in this study from its cross-cultural experience.

For the ISS developed by Fu et al. (2015), the Cronbach's alpha coefficient was 0.94; the split-half coefficient, 0.90; and the test-retest correlation coefficient, 0.91. Associated with other measures, the scale yielded good convergent validity, and the content validity index had a value of 0.92. The Scale has been successfully used in several studies at various places such as Turkey (Kucukkaya & Kilic, 2022), China (Q. Tang et al., 2024; F. Zhang, et al., 2021), Egypt (Abdelhamid et al., 2024), and Ghana (Kyei et al., 2024). For the short form of the ISS developed with the same 4 factors as in the original scale by Li et al. (2025), an exploratory factor analysis returned that the factors accounted for 79.70 % of the total variance. The values of the Cronbach's α, the split-half reliability, and the test-retest reliability where respectively 0.95, 0.93, and 0.91. The scale showed good structural validity, discriminant validity, and convergent validity. The validity and reliability of the scale are established, and it can be aligned with the original to ensure validity and reliability for this study.

The Cronbach's alpha coefficient of the CSS ranged from 0.59 to 0.76 in the original scale, and the entire model showed a goodness-of-fit-index of 0.88 from a

confirmatory factor analysis. Researchers, in the end stated that despite the careful development of the coping measure, validation and testing were still needed for reliability and replicability to other study populations (Schmidt et al., 2005). Nevertheless, the COMPI Coping Strategy Scale has since been applied in various settings and the validity and reliability has been established. Some early experiences include: Martins et al. (2011) in Portugal, Hashim et al. (2012) in Egypt, and Aflakseir and Zarei (2013) in Iran. More recently, Li et al. (2020) translated the scale in Chinese with Cronbach's Alpha ranging from 0.58 to 0.73. Jing et al. (2021) used the scale with the Cronbach's alpha ranging from 0.60 to 0.74 for the subscales (Chen et al., 2026); and the Cronbach's alpha for the entire scale was 0.81 in the study of Chen et al. (2026). This study benefits from the reliability and validity that are thus established for the scale.

In addition to the standardised status of the instruments in this study, validity was established as triangulation of the quantitative and qualitative data was achieved in the analysis (Sharma et al., 2023). Validity is what and how well an instrument measures what it was meant to measure (Noble & Smith, 2025). Face validity and content validity are discussed as important to the study instrument. To achieve both aspects of validity, the questionnaire was reviewed by two scholars in the field of psychology, a sociologist, a linguist, a church minister, and peers. There was a two-folded review of the questionnaire; first, to check whether the variables in their wording were suggesting what they meant to measure. And second, they checked if the variables were actually measuring what they intended to measure. This multiple review permitted the researcher to adjust the questionnaire. It was refined later after the pre-testing.

**Pilot Testing**

A pilot testing was performed in this study to assess the suitability of the instruments. Pilot testing involves running the research instrument with a small pilot sample that is similar to the target population, prior to the data collection (Kalkbrenner, 2021). In this study, the pilot testing was done in the sub-Counties of *Come* and *Lokossa*, County of Mono, for the socioeconomic characteristics in those counties are similar to those in the study area. The sample size for the pilot testing was 45 survey participants, following Bujang et al. (2024), fixing the sample size for testing the reliability of a questionnaire to the minimum of 30 study participants, given an alpha value of 0.05 and a power of 80.0%. Three male and two female church leaders were also interviewed. The pilot test participants were recruited following the procedure described in the sampling method section above.

Potential participants who accepted to sign the consent form were associated to the research in responding to the questionnaire. The data was analysed for its distribution, variability, and correlation to test the validity of the questionnaire (Ranganathan et al., 2024). The pilot testing helped with readjusting practical aspects such as the clarity of the questions, the time allotted, or the participants' perception. The results helped to correct the wrongs in the design of the instruments and the survey before the data collection started, ultimately improving the validity and reliability of the instrument (Hossan et al., 2025). For the Cronbach alpha, ASPIRES scored 0.88 for the Spiritual Transcendence and 0.24 for Religious Sentiments. The CD-RISC-10 scored 0.91, and the value for the ISS-SF was 0.90. The alpha value for the COMPI CSS was 0.80. The DASS21 scored 0.98, and the value for the RSES was 0.78. Apart from Religious Sentiments, the internal consistency reliability of the scales ranged from good to very good.

## Data Analysis

Data analysis provides the researcher with tools for getting better insight into the issue under investigation (Soren, 2023). In this study, the quantitative data analysis was facilitated with the Computer Software Statistical Package (SPSS) version 30.0. The qualitative data was analysed with reflexive thematic analysis method, using coding and focusing on themes and patterns in the collected data.

### *The Quantitative Data*

First, data screening was performed. It is the process of reviewing and cleaning the data, aiming to detect and correct issues such as errors or inconsistencies that could affect the results of the analysis (Sharifnia et al., 2025). It is critical in quantitative research as it helps to ensure accuracy, reliability, and consistency of the data for enabling valid conclusions (Sharifnia et al., 2025). The review and cleaning were done through statistical assumptions testing in correlation and regressions analysis. These included, linearity, homogeneity, normality, heteroscedasticity and multicollinearity checking. For the screening, linearity assumption was tested with Normal P-P plots, where it is usually depicted by a straight-line displaying the relationship between variables. To check for outliers, boxplots were performed and visually observed. For normality, Q-Q plots and histograms were visually observed, hunting for reasonably straight line and bell-shaped curve, followed by inferential tests of Normality.

From visual observation of plots in the figures, the assumption of linearity was met for the data in the five scales and subscales. Boxplots displayed some potential outliers. From Q-Q plots and histograms, normality was not achieved. The Kolmogorov-Smirnov and Shapiro Wilk statistics failed to show normality, as there

was significance of most statistics scores. A logarithmic transformation of the data could not lead to normality.

However, two considerations helped to proceed with the analysis. First, the study was using a large dataset (N=384>30), the central limit theorem indicating that the distribution of sample means approaches normality, whatever the shape of the parent population (Cheng, 2024), was considered. Second, in linear models, the assumption of normality applies to the residuals and not to the observed scores (Midway & White, 2025). It was also decided to keep outliers in the analysis, since they represent study participants' realities in dealing with infertility and related stigma in the study area. Heteroscedasticity was checked for each case during regression analysis in inferential statistic.

The second step in data analysis was descriptive statistics used to summarize the data with measures of central tendency such as frequencies, percentages, minimums, maximums, ranges, means and standard deviations (Saneii & Doosti, 2024). The data was visualized with tables and graphs – pies, bar charts. Next, the relationship between independent and dependent variables was obtained with simple linear and multiple regression analysis and Pearson correlation analysis. Following is the regression model (Qu, 2024):

$$Y = \beta_0 + \beta_i X_i + \varepsilon$$

where,

Y is the dependant variable

$X_i$ are the independent variables, with i = 1, 2, 3, …, n.

$\beta_0$ is the constant or intercept

$\beta_i$ are the regression coefficients with i = 1, 2, 3, 4, …, n

$\varepsilon$ is the error term

The level of confidence was measured with *p*-value at the threshold of less than 0.05 ($p < .05$). For Pearson correlation, the thresholds of 0.25; 0.50; and 0.75 were used to give the strength of the relationship between variables. Finally, the results were interpretated regarding the research objectives.

***The qualitative data***

Participants' responses to the open-ended questions in the survey were first read, sorted, coded, and synthetized before being summarized with frequencies and percentages. This permitted the researcher to quantify the qualitative data for enhancing interpretation (Halevi-Hochwald et al., 2023). It brought to live, the women's experiences of infertility with regard to stigma, culture, spirituality and resilience in the study objectives. In addition, the rest of the data that was from focus groups and interviews went through the process of reading, sorting, coding to shared themes that corresponded with study objectives. The analysis produced a report including participants descriptions of their own experience or their perception of infertility and related stigma in the frame of the research objectives.

**Ethical Considerations**

The ethical aspects considered in the study were the institutional approval, protection of research participants, informed consent to research, the right to withdraw or decline participation, confidentiality of research data and plagiarism that was avoided in this research. The researcher got authorization from the Post Graduate School and Institutional Scientific and Ethics Review Committee (ISERC) of Pan Africa Christian University. Authorization for research was equally acquired from the Beninese National Commission of Ethics for Medical Research. Cover letters were obtained from county authorities of the selected mainstream Evangelical Churches in

the County of Zou in Benin. These facilitated contact and rapport with local Pastors for their consent and collaboration in the data collection in their community.

Ethics in research seeks the protection of the dignity and rights of research participants, and model the conduct of researchers consequently. Due to the ethical sensitivity surrounding the issue of infertility, the researcher ensured that the study itself did not lead to the stigmatization of women identified as infertile. The same applied to the church community to which they belonged. Indeed, such a church could be labelled as one that discloses the intimate and confidential information of its congregants, which could be detrimental to that church community. The choice to rely on the main leaders of the local church and the head of women's fellowship as main informants for identification of women living with infertility was motivated by the knowledge of practices specific to Evangelical Churches in Benin.

The Pastor, the church leader, who receives the woman's confidence during pastoral care, and the female leader of the church's women who also receives the woman's confidence during routine visits were the two sources of information. Even though confidentiality was assured from these two sources, there is the practice of assisting in Sunday worship as family and that of collective prayers for specific needs, which already publicize a couple's and assumably, the woman's infertility in the church. These practices, although widespread in Evangelical communities, cannot be just adopted in the realm of research process because they do not protect the woman. Consequently, when approaching the women to inform them of the research project, the researcher paid attention not to exacerbate the harm of these practices that already weaken the image of the women. To this end, research assistants were recruited with attention to skills in sensitive research.

During the data collection, the researcher and assistants paid attention to show respect to the area and people with regard to their values. They watched for ethical adequacy of any action taken. There was no case of threat to the participants because of their participation in the research, that would have needed referral to appropriate professionals to solve the problem and safeguard the participants' dignity and rights. During analysis, the researcher and the assistants respected and protected anonymity and privacy of participants. They were honest in disclosing results, reporting, sharing, and storing the data. Research assistants were bound by a confidentiality agreement that they signed prior to their participation in the research. At the end of the research, the data would be destroyed.

The informed consent process provided participants with a clear explanation of the nature of the research and their expected participation as well as the right to withdraw from the study at any time they wished to. This enabled them to give their consent voluntarily. The consent form also informed participants about potential risks, including any possible adverse effects that may arise during the study as well as the mitigation strategy. Symmetrically to the risks, the benefits of the study were clarified to participants. The researcher and research assistants made sure that any participation into the study was fully consented to, throughout the research.

Research participants were assured that while their data may be included in the study report, their confidentiality will be safeguarded. In the end of data collection, a debriefing session were conducted to reinforce confidentiality by assuring participants that their identities will remain undisclosed. That is also where research participants were informed of the conclusion of the research. In addition, they were offered the opportunity to ask questions concerning the study and received appropriate response.

## Chapter Summary

This chapter has provided an insight into the journey of the research starting from the research approach. The choice of the mixed method guided the choice of the types of data and the data collection methods which are described in the chapter. The process of the data analysis has been put to fore. Ethical issues relevant for this research have also been clearly outlined. The next chapter focuses the data, its analysis and discussion of the findings.

# CHAPTER FOUR: RESULTS AND DISCUSSIONS

## Introduction

This chapter presents the data collected, the analysis, interpretation, and discussion of the findings on the influence of spirituality and resilience in managing infertility stigma among married women in selected mainstream Evangelical Church Assemblies in Zou County, Benin. A convergent parallel mixed-methods guided the collection and analysis of the data. The quantitative data was obtained with standardised instruments, namely, ASPIRES, COMPI CSS, ISS-SF, CD-RISC-10, DASS21, and RSES. The qualitative data was collected through a researcher-designed questionnaire based on key variables from the scales adopted and adapted to the research questions in pursuit of the research objectives. The quantitative and qualitative data are presented, analysed, interpreted and discussed concomitantly. The quantitative results help to characterise the variables, present the relationship between them, and achieve the research objectives. The qualitative data describes the beliefs, attitudes, and behaviours of women in infertility, based on the variables and study objectives. Both sets of results are merged and triangulated as reported in this chapter. The chapter closes with a summary.

## Response Rate

The survey reached out to the planned 384 married women with infertility issues in selected Evangelical Church Assemblies. Due to the low literacy rate in the study area, the data was collected by interviewer-administered approach, with a response rate of 100%. This made the sample adequate for the study. Evangelical Churches initiated by Western missions and African independent Evangelical Churches participated in the research to the level shown in table 2.

**Table 2**

*Survey Response Rate as per Church Origin*

| Number of women surveyed | | Responses | Percentage |
|---|---|---|---|
| Source | Number | | |
| Western Missions Churches | 123 | 123 | 32.03 |
| African Independent Evangelical Churches | 261 | 261 | 67.97 |
| Total | 384 | 384 | 100 |

*Note*. Number of responses as per church origin.

The study gathered effectively 429 participants. Table 3 displays the composition.

**Table 3**

*Composition of Research Participants*

| Study Participant | Number | Percentage (%) |
|---|---|---|
| Survey and age 51-60 women focus group | 384 | 89.51 |
| Church first leaders' focus groups | 15 | 3.50 |
| Local pastors' interview | 14 | 3.26 |
| Female women leaders' interview | 16 | 3.73 |
| Total | 429 | 100 |

*Note*. Number of study participants as per category.

As shown in Table 3, the surveyed women representing 89.51% of the study participants, a sample of 8 women aged 51 to 60 years was gathered for a focus group. A third sample of 16 major community female leaders (3.73% of participants) responded to personal interviews. The fourth sample comprised of 14 major community Pastors (3.26% of participants) who responded to personal interviews and the fifth sample gathered 15 church first leaders (3.50% of participants) for two focus groups. With such composition, the study sample was meant to provide a glimpse into the woman of interest's context and reality as well as the perception of the people surrounding her in the church, including the community and the leadership

defining and implementing the church policies for her support. To note, female leaders were more eager to participate in the study.

**Demographic Characteristics of Study Participants**

The characteristics of the study participants assessed in this section with descriptive statistics includes the participants' age, socio-economic status, and treatment attempts.

***Marriage-Related Age Profile of Survey Participants***

Marriage-related age details of survey participants assessed with frequency and corresponding percentage are displayed in table 4.

**Table 4**

*Distribution of Age Characteristics of the Surveyed Women*

| Characteristic | Value | Frequency (N=384) | Percentage (%) |
|---|---|---|---|
| Current Age of the Surveyed Women (years) | | | |
| | 18-34 | 260 | 67.71 |
| | 35-50 | 114 | 29.69 |
| | 51-60 | 10 | 2.60 |
| Age of the woman at marriage (years) | | | |
| | 18-34 | 371 | 96.61 |
| | 35-45 | 13 | 3.39 |
| Marriage duration (years) | | | |
| | 2-5 | 200 | 52.08 |
| | 6-10 | 81 | 21.10 |
| | 11-20 | 75 | 19.53 |
| | 21-30 | 24 | 6.25 |
| | 31-45 | 4 | 1.04 |

*Note*. These characteristics help to locate the woman with regard to the fertility window.

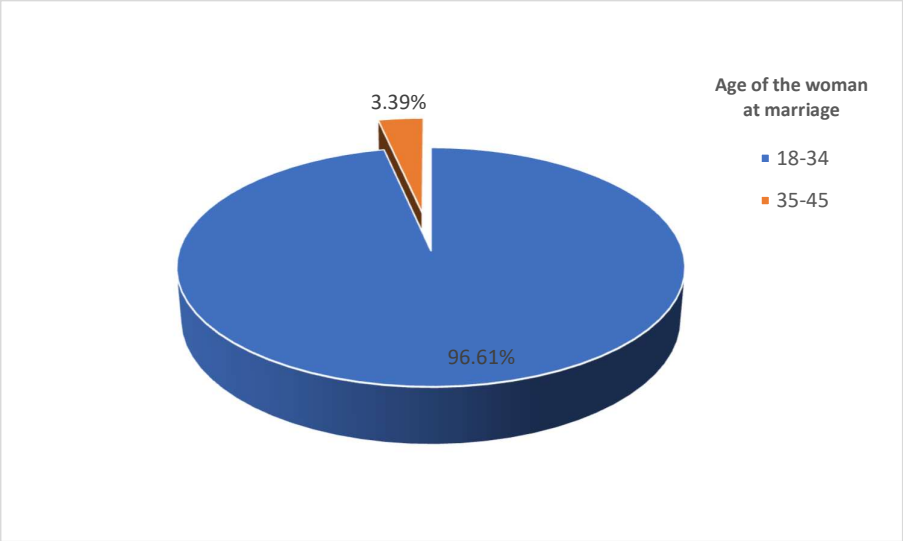
As shown in Table 4, the age of the women ranged from 18 to 60 years with a mean age of 31.95 ± 8.54 years. This characteristic was also noted in three ranges as 18-34 (67.71%), 35-50 (29.69%), and 51-60 (2.60%). In the sample for the survey, most women were still at the best of their fertility-life (below 34 years). Less than the

third of them were in the decline phase (35-50), where the chances to conceive are regressing, as the woman ages towards menopause. The rest of the survey participants were in their menopause time, where most women gain awareness of the term of their race to fertility. The presence of all age categories in the sample presage of a wide view of stigmatization in the study area. They are all likely to give their conscious experience and their own perception of themselves permitting to access their self (Maxey, 2020; Satir et al., 1991). Indeed, more than half of women were in the five first years of their marriage and probably struggling to realise the truth of their condition.

The age of the women at marriage was captured in two ranges as 18-34 (96.61%) and 35-45 (3.39%) as shown in Figure 2.

**Figure 2**

*Age of the Surveyed Woman at Marriage*




*Note*. Range wise age of the women at marriage to visualize their position with regard to the fertility window.
Source: Researcher, 2026.

In Figure 2, the portion of the pie chart evidencing the presence of most women in the high fertility range suggests that sociocultural practices regarding age

at marriage in the study area were in favour of procreation. In the perspective of perceiving how the issue of infertility has settled in the couple, the duration of the marriage was investigated and yielded 2-5 years for 51.82% of the women, 6-10 years for 21.36%, 11-20 years for 19.53%, 21-30 years for 6.25%, and 31-45 years for 1.04% of them. All the women surveyed were eligible for the study as all marriages aged well above the threshold of one year set by the WHO (2024). All of them had more than two years of marriage.

***Marital Threat to the Survey Participants' Fertility***

The survey participants whose husbands were out of the male fertility window were at additional risk of conception issues. Therefore, the age profiles of the spouses of survey participants were investigated to evaluate the threat. Results by descriptive statistics are displayed in Table 5.

**Table 5**

*Marital Threat to the Survey Participants' Fertility*

| Characteristic | Value | Frequency (N=384) | Percentage (%) |
|---|---|---|---|
| Husband's current age (years) | | | |
| | 20-29 | 98 | 25.52 |
| | 30-39 | 156 | 40.63 |
| | 40-49 | 100 | 26.04 |
| | 50-70 | 30 | 7.81 |
| Age of Husband at Marriage (years) | | | |
| | 20-29 | 266 | 69.27 |
| | 30-39 | 93 | 24.22 |
| | 40-49 | 23 | 5.99 |
| | 50-70 | 2 | 0.52 |

*Note*. Distribution of age characteristics of the survey participants' husbands.

Table 5 shows that the age of the husband was 20-29 years for 25.52% of the women with infertility, 30-39 years for 40.63%, 40-49 years for 26.04%, and 50-70 years for 7.81%. Only a quarter of the husbands were at the best of their fertility life.

Two in five were still in a good period of fertility. At marriage, the age of the husband was 20-29 years (69.27% of the surveyed women), 30-39 years (24.22%), 40-49 (5.99%), and 50-70 years (0.52%). From these figures, most of the husbands were in the fertility window when they married. Considering both results from surveyed women and their husband, it can be concluded that the risk of the husband contributing to the woman's declared infertility was not negligeable.

***Family Environment of Survey Participants***

From the cultural context allowing polygamy, there were men who were already married to several wives when they joined the Evangelical Church communities. Sometimes, the husband leaves the church and has an additional marriage because of the infertility of the first wife. In any of these cases, such a home environment is a potential source of more stigma for the surveyed women, especially when there were children from other wives. In a perspective of assessment, the number of co-wives and their children were investigated. Table 6 displays the distribution.

**Table 6**

*Family Environment of Survey Participants*

| Characteristic | Value | Frequency (N=384) | Percentage (%) |
|---|---|---|---|
| Number of other wives | | | |
| | 0 | 246 | 64.06 |
| | 1 | 101 | 26.30 |
| | 2 | 19 | 4.95 |
| | >=3 | 18 | 4.69 |
| Participants' marriage order among co-wives | | | |
| | 1st | 319 | 83.07 |
| | 2nd | 44 | 11.46 |
| | >=3rd | 21 | 5.47 |
| Number of co-wives' children | | | |
| | N/A | 246 | 64.06 |
| | 0 | 13 | 3.39 |
| | 1 | 33 | 8.59 |
| | 2 | 15 | 3.91 |
| | >=3 | 77 | 20.05 |

*Note*. Characteristics of polygamous marriages, when it applies to the surveyed women.

According to Table 6, the family environment was a priori safe for most surveyed women as they were in a monogamous union (64.06%). Two wives were found in 26.30% of households, three wives in 4.95%, and more than three in 4.69%. The high rate of monogamous marriage depicts the custom in Evangelical Churches. The presence of more than one wife in the household might be the effect of infertility, pushing the husband to try another woman for saving the lineage. Indeed, more than 83% of participants ranked as first wife in the household.

The second place was occupied by 11.46%, and 5.47% ranked third or beyond. The number of children was null in some households with more than one wife (3.39%), while it was three or more in other multiple-wife households (20.05%). In such households, the women with infertility are likely to be exposed to more stigma and psychological effects because infertility is culturally female by default

and the presence of children from other women testifies against the one without any child. This was the case in several studies on infertility stigma showing that women received a lot of pressure from the family, due to the cultural prescription of motherhood as compulsory for the women in marriage (Dierickx et al., 2021; Jiang et al., 2025; Ofosu-Budu & Hänninen, 2021). However, when there is no child with a second wife, the man is suspected, and the suspicion extends to cases of only one child from a second wife who is therefore also suspected of infidelity. The findings in this study echo the findings in Bornstein et al. (2023) on secondary infertility where the shame of the husband was established and the woman suspected of infidelity.

***Socioeconomic Status***

The socioeconomic status of surveyed women is shown in Table 7.

**Table 7**

*Socioeconomic Status*

| Socio economic Characteristic | Status | Frequency (N=384) | Percentage (%) |
|---|---|---|---|
| Level of education | | | |
| | Primary | 54 | 14.06 |
| | Secondary | 38 | 9.90 |
| | Tertiary | 4 | 1.04 |
| | Non-formal small-scale professional training | 188 | 48.96 |
| | Uneducated | 100 | 26.04 |
| Employment | | | |
| | Civil servant | 15 | 3.91 |
| | Self-employed | 317 | 82.55 |
| | Housewife | 52 | 13.54 |

*Note*. The socioeconomic status of women indicates the importance of each stratum.

As shown by Table 7, the highest level of formal education of the women with infertility was primary at 14.06% and secondary at 9.90%. The level was tertiary at 1.04% and uneducated were 26.04%. Non-formal small-scale professional training was the level of education of 48.96%. Civil servant employment occupied 3.91% of

the women, 82.55% were self-employed, and 13.54% were housewives. Most of the self-employed women held an activity that can keep them very close to home, such as a small-scale trading (36.72%). Housewives, occasionally sustain the family economy by helping the husband in agricultural works, mostly in rural areas.

Overall, all women were occupied in an economic activity. A quarter of them have formal education, with half of that proportion having only reached the primary level. The obstructive effects of high level of low literacy on understanding the survey questions were mitigated by the interviewer-administration approach in data collection. As a result, the 384 interviewees openly participated and gave rich and meaningful data. The low literacy level also indicated that these women probably had low access to infertility knowledge.

***Treatment Attempts***

Women in the survey as well as some of their husbands had all tried infertility treatments as shown by the characteristics in Table 8.

**Table 8**

*Characteristics of Infertility Treatment Trial*

| Characteristic | | Surveyed women | | Husband of surveyed women | |
|---|---|---|---|---|---|
| | | Frequency (N=384) | Percentage (%) | Frequency (N=384) | Percentage (%) |
| | | With current husband | | - | |
| Conception trial duration (years) | 1-5 | 215 | 55.99 | - | - |
| | 6-10 | 84 | 21.88 | - | - |
| | 11-20 | 68 | 17.70 | - | - |
| | 21+ | 17 | 4.43 | - | - |
| | | | | | |
| Treatment attempts | Yes | 384 | 100 | 186 | 48.44 |
| | No | 0 | 0 | 198 | 51.56 |
| | | | | | |
| Treatment duration (years) | 1-5 | 220 | 57.29 | 113 | 29.43 |
| | 6-10 | 80 | 20.83 | 39 | 10.16 |
| | 11-20 | 67 | 17.45 | 22 | 5.73 |
| | 21+ | 17 | 4.43 | 12 | 3.12 |
| | N/A | - | - | 198 | 51.56 |
| | | | | | |
| Type of treatment (practices) | Indigenous (I) | 31 | 8.07 | 21 | 5.47 |
| | Biomedical (B) | 6 | 1.56 | 23 | 5.99 |
| | Spiritual (S) (prayer) | 35 | 9.11 | 15 | 3.91 |
| | S and B | 16 | 4.17 | 8 | 2.08 |
| | I and B | 20 | 5.21 | 13 | 3.39 |
| | I and S | 64 | 16.67 | 29 | 7.55 |
| | I and B and S | 212 | 55.21 | 77 | 20.05 |
| | N/A | - | - | 198 | 51.56 |

*Note*. N/A means that the characteristic (treatment duration or type of treatment practices) is not applicable to the 198 husbands who did not try any treatment.

From Table 8, the women responding to the survey had been trying to conceive for 1-5 years (55.99%), 6-10 years (21.88%), 11-20 years (17.70%), and more than 20 years (4.43%). All of them had tried treatment and it lasted 1-5 years (57.29%), 6-10 years (20.83%), 11-20 years (17.45%), and more than 20 years (4.43%). Three major types of treatment were found among the women surveyed, as

indigenous practices (8.07%), biomedical practices (1.56%), and spiritual practices (9.11%). There was a set of the three types of treatment (55.21%). Additionally, a mix of indigenous and biomedical practices (5.21%), indigenous and spiritual practices (16.67%), and spiritual and biomedical practices (4.17%) was found in the data.

The surveyed women's husbands sought treatment at 48.44%. The duration was 1-5 years (29.43%), 6-10 years (10.16%), 11-20 years (5.73%), and more than 20 years (3.12%). The types of treatment were the indigenous practices (5.47%), biomedical practices (5.99%), spiritual practices – prayer (3.91%). There was a set of the three types of treatment (20.05%). A combination of indigenous and biomedical practices (3.39%), indigenous and spiritual practices (7.55%), and spiritual and biomedical practices (2.08%) were used by husbands. The indigenous practices also evoked by women was made of various plants. The treatment attempts revealed fertility issues for husbands at 15.63%, of whom 47.14% accepted the verdict and 17.97% opened up freely for treatment.

The husbands attempting treatment was of major encouragement for women as it challenged the cultural belief that infertility was exclusively female. The use of biomedical practices was the lowest among both the women and the husbands. The women interviewed evoked the issue of its high cost in consideration of their socioeconomic power. There were indigenous practices not listed as the target women, born-again Christians, did not use them because of their occult nature. Nevertheless, the findings on treatment resonate with Adane et al. (2024) who found religious/spiritual, traditional/cultural, and biomedical practices; and Mashaah et al. (2024) who found women making use of traditional healthcare services.

**Objective 1: Spirituality and Coping with Infertility Stigma**

The first objective of the research was to examine the relationship between spirituality and coping with infertility stigma among married women in the selected Evangelical Church Assemblies in Zou County, Benin. The variables spirituality and coping strategies, as well as the relationship between them were assessed in the section that follows.

***Spirituality***

The spirituality of church women experiencing infertility was measured with ASPIRES. The 384 responses on the 35 items were given scores, computed and grouped subscale wise for analysis. The scale is summarized in Table 9.

**Table 9**

*ASPIRES Measures of Central Tendency and Dispersion*

| Scale | Mean | Std. Dev. | Min | Max | Range |
|---|---|---|---|---|---|
| Spiritual Transcendence | 82.15 | 10.16 | 61.00 | 107.00 | 46.00 |
| Prayer Fulfilment | 39.89 | 7.42 | 24.00 | 50.00 | 26.00 |
| Universality | 25.59 | 4.05 | 15.00 | 35.00 | 20.00 |
| Connectedness | 16.67 | 3.21 | 9.00 | 30.00 | 21.00 |
| Religious Sentiment | 52.14 | 5.59 | 35.00 | 62.00 | 27.00 |
| Religious Involvement | 35.22 | 4.12 | 20.00 | 44.00 | 24.00 |
| Religious Crisis | 16.91 | 3.09 | 8.00 | 20.00 | 12.00 |

*Note*. Mean values and standard deviations of ASPIRES scales and subscales.

Age and gender are critical for interpreting the values of the scale (Piedmont, 2020). Consequently, age of the woman was added next for analysis. As shown by Table 9, the Cronbach's α was 0.90 for the entire 23-item Spiritual Transcendence. The value was 0.78 for Prayer Fulfilment subscale (10 items). It was 0.75 for Universality subscale (7 items), and 0.63 for Connectedness subscale (6 items).

Internal consistency reliability scores for the Spiritual Transcendence subscales ranged from weak to very good. The items in the Connectedness subscale

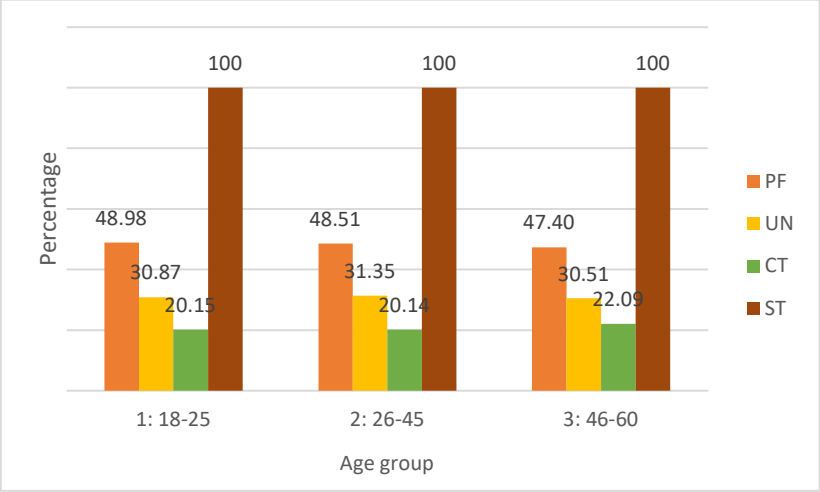
did not reliably measure the same construct among the study participants. Regarding the 12-item Religious Sentiments, the Cronbach's α was 0.60, 0.42 for Religious Involvement subscale (8 items), and 0.71 for Religious Crisis subscale (4 items). Only Religious Crisis presented an acceptable value. Like in the case of Connectedness, the dataset failed to show acceptable internal consistency on Religious Involvement.

This low internal consistency may indicate a severe structural limitation. In addition, the findings in this study deviate from the norms on the Religious Sentiments scales. The nature of the sample (women struggling with the existential crisis of infertility) might also explain the pattern. These women experience identity disruption, connectedness issues, and disappointment, as shown below throughout the analysis. The scale is further presented with subscales for better insight.

**The Spiritual Transcendence scales.** The mean scores of the scale are displayed per subscale and age group in Figure 3.

**Figure 3**

*Spiritual Transcendence Subscales*




*Note*. Visualization of the Spiritual Transcendence scales' mean scores per age range.
Source: Researcher, 2026.

Age groups for analysis of the spiritual transcendence scale are 18-25 years, 26-45years, and 46-60 years (Piedmont, 2020). As Figure 3 shows, the Prayer Fulfilment scores represented respectively, 48,98%, 48.51%, and 47.40% of the total scale, for age groups 1, 2, and 3. The lowest values were on connectedness presenting respectively, 20.15%, 20.14%, and 22.09% for age groups 1, 2, and 3. The visualization of the three subscales revealed the same pattern across all age groups. There might be factors overcoming the influence of age on the scale. Presumably, the culture and affiliation with the Evangelical Church seem to provide a certain uniformity of perspective among the study respondents. This resonates with the opinion of Mwemezi (2024) that spirituality as the fundamental of life for Africans provides the structures for all guiding principles of life in the community. The scale is further presented in Table 10.

**Table 10**

*The Scores of Spiritual Transcendence Scales*

| Age group (years) | Mean scores of Spiritual Transcendence scales | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Spiritual Transcendence (ST) | | Prayer Fulfilment (PF) | | Universality (UN) | | Connectedness (CT) | |
| | N | % | N | % | N | % | N | % |
| 1: 18-25 | 81.53 | 100.00 | 39.93 | 48.98 | 25.17 | 30.87 | 16.43 | 20.15 |
| 2: 26-45 | 82.46 | 100.00 | 40.00 | 48.51 | 25.85 | 31.35 | 16.61 | 20.14 |
| 3: 46-60 | 81.93 | 100.00 | 38.83 | 47.40 | 25.00 | 30.51 | 18.10 | 22.09 |

*Note*. Age group mean scores of Spiritual Transcendence scale and subscales.

Table 10 indicates that the Prayer fulfilment scale scored on average 39.93, 40, and 38.83 for age groups 1, 2, and 3 respectively. The score values were above the threshold in group 1 (31-39), and in group 2 (26-39). Group 3's score fitted in the frame (28-41). Even though groups 1 and 2 seem to be surfing on the lower borders, from Piedmont (2020), women in those groups have settled in the habit of praying and dealing with the word of God. From the qualitative data, it seems that the women

in the survey developed a prayer-focus spirituality. On several aspects of the survey, prayer appeared in their responses as a positive pathway to satisfaction.

For example, prayer was part of treatment strategies for most of women (less than 15% did not mention it). Prayer was the most cited way of nurturing their experience of God (46.61% for general life and 50% for the issue of infertility and motherhood). Prayer was mentioned as a faith practice that helped to maintain their resilience (65.89%). Most of them also cited prayer as a coping strategy (29.17%). However, their emphasis on the word of God was less. Only a few used it to nurture their relationship with Him in general life (5.21%) and on the issue of infertility and motherhood (3.65%).

These findings on prayer align with findings in several previous studies. For example, Dehghan et al. (2024) found prayer and engagement in spiritual rituals as part of the women in their study's coping strategies against the purposelessness of life and feelings of hopelessness. Interpretation of Group 3 in Table 11 scoring within the range is that emotional satisfaction from prayer and interaction with scriptures occurs only sporadically with the surveyed women (Piedmont, 2020). They might have shifted focus as they were aging towards or beyond menopause. A 56-year-old study participant (CST4) said:

"… I leave everything to God".

This echoes Amjad and Ahmad's (2023) comment that individuals find meaning to their life in their spiritual beliefs and values.

The Universality scale scored 24.17, 25.85, and 25 for group 1, group 2, and group 3 respectively. Conferring to the average range of scores, 22-27, 19-28, and 21-29 for groups 1, 2, and 3, respectively in Piedmont (2020), the Universality scale scored high values, pointing to the belief in a shared inner vision that should supplant

external differences. All women in the survey resented stigmatization in the church, yet it is supposed to be a place of shared beliefs. A participant (age 25, CST50) commented:

> "I thought the church would be a safe place; instead, it is at church where there is the most stigma".

They advocated reduction of stigma in the church and pointed to community education to achieve this (92.71%), and named empathy (94.53%) and brotherly love (38.28%) among specific topics to address. This hinderance of women's coping mechanism – confiding in the church as a place of safety against stigma – by developing stigma in the church, echoes Gezinski et al.'s (2021) study where they found the same in Utah, USA. Similarly, participants in the study of Azize Diallo et al. (2024) expected spiritual help from the church.

For Connectedness, the scores were 16.43, 16.61, and 18.1, respectively for age groups 1, 2, and 3. These were to be compared to 20-24, 17-22, and 18-23, respectively. for analysis. Age groups 1 and 2 scored lower than average. From Piedmont (2020), this reflects the self-perception of women as defined in relation to their immediate life history. These women did not separate their selves from their infertility condition. Stigmatization might have contributed to this as women reported to be continuously mocked, insulted, despised and humiliated. The insult that came up very often was 'sieve uterus', which might have made the woman feel inadequately built. This finding aligns with previous studies where women with infertility self-devaluated as a result of stigmatization, family humiliation and social disapproval of infertility (Jing et al., 2021; Klaus et al., 2023; Xie et al., 2023).

Group 3 fitted the average score range, showing that after 45 years, the woman values relationships, however, with awareness of limitations (Piedmont,

2020). Coping strategies mentioned by women distanced them from relationships. However, church leaders pointed out during interviews and focus groups that over time, women relaxed and opened up to relationships – probably around age group 3 time. A woman (age 50, STG301) commented:

"… I no longer do anything in the face of stigma. Because I have let go". This expressed acceptance, which was also found by Taebi et al. (2021), and a sense of connectedness to God, self and environment found by Amjad and Ahmad (2023).

The entire Spiritual Transcendence scale scored 81.53 for group 1, 82.46 for group 2, and 81.93 for group 3. Group 1 fell in the range 74-88, group 2 in the range 64-87, and group 3 in 68-91. From Piedmont (2020) view, this means that the survey respondents were interested in both growing in the knowledge of God, and solving their infertility problem, thus, balancing both perspectives. To the question "how do you nurture your relationship with God regarding infertility and motherhood?", 28.39% of the participants reported of keeping their faith in Him, implying that their spirituality transcends their infertility condition. Half of the respondents named prayer and they added faith, fasting, interacting with the scriptures and church activities. It is meaningful that they focused on prayer since it is the way of making requests to God, and with fasting they could even try to urge Him to head their request. This resonates with the findings in Tusasiirwe et al.'s (2023) where people's spiritual beliefs sustained their hope and optimism, helped their resilience and perseverance, and strengthened them. These women, through their hope and optimism, illustrated belief in meaning and purpose to life beyond their context of infertility.

**The Religious Sentiment Scales.** The scores of the Religious Sentiments' scale are presented in Table 11.

**Table 11**

*The Scores of Religious Sentiments Scales*

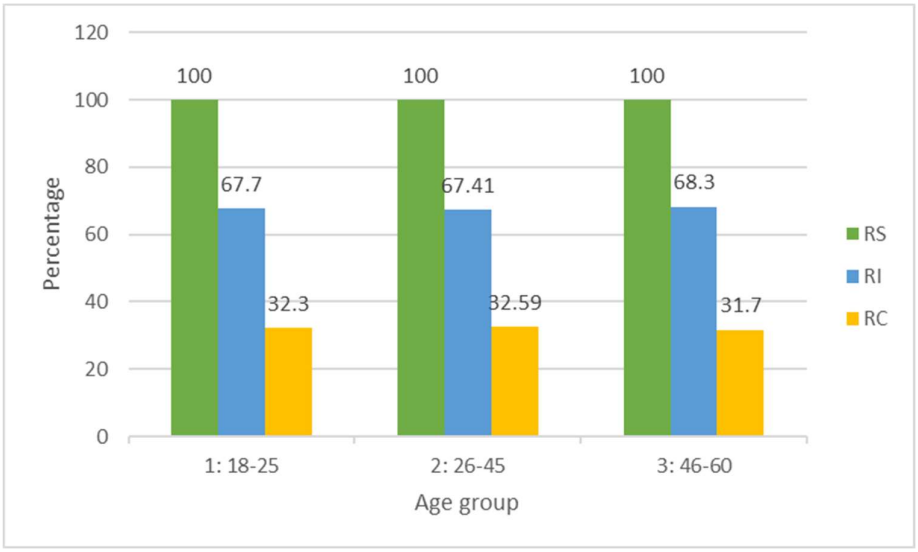
| Age group (years) | Mean scores of the Religious Sentiments | | | | | |
|---|---|---|---|---|---|---|
| | Religious Sentiments | | Religious Involvement | | Religious Crisis | |
| | Mean | Percentage | Mean | Percentage | Mean | Percentage |
| 1: 18-25 | 51.58 | 100 | 34.92 | 67.70 | 16.66 | 32.30 |
| 2: 26-45 | 52.28 | 100 | 35.24 | 67.41 | 17.04 | 32.59 |
| 3: 46-60 | 53.00 | 100 | 36.20 | 68.30 | 16.80 | 31.70 |

*Note*. Age range mean values of the Religious Sentiments scales.

As shown by table11, age groups for the analysis were the same as for Spirituality Transcendence. Religious Involvement represented respectively 67.70%, 67.41%, and 68.30% of the Religious Sentiments Scale for age groups 1, 2, and 3. Religious Crisis scored 32.30, 32.59, and 31.70 respectively. Figure 4 visualizes the scale for more insight.

**Figure 4**

*Religious Sentiments Scales*




*Note*. Visualization of the Religious Sentiments scales' mean values age range wise. Source: Researcher, 2026.

The visualization revealed the same pattern for the two subscales. On the Religious Involvement scale, the mean score for age group 1 was 34.92, above the range 22-31. For group 2, it was 35.24, within the mean values range 27-38. For group 3, the mean score was 36.20, within the range 32-41. Conferring to the benchmark (Piedmont, 2020), group 1 were well involved in religious activities. Attending regularly to church activities is common in the study area's Evangelical Churches. Nevertheless, group 1 women, still in the first years of infertility, might be forcing their involvement in order to attract the favour of God on them. A woman (age 28 participant, EES75) said:

> "It is through my participation in church tasks that I nurture my relationship with God."

To this regard, Groups 2 and 3 may have just come back to normal.

These results show a kind of regression in the involvement of women with infertility in the church. Indeed, most of them said that they avoided gatherings as a coping strategy. In the focus group of women aged 51 to 60 years, they said that after 45 years, they started thinking that only God can make it happen. Therefore, they started experiencing laxity in every respect, but without giving up. Thus, religious practices were always part of their coping strategies, though to varying levels. This religious involvement on purpose was also found in several previous studies. For example, the Annan-Frey et al.'s (2023) study results revealed that women draw upon their religious faith to adapt, rely on their devout conviction as a vital source for spiritual support and develop religious practices like fasting and prayers, in believing that God would provide a child for them.

About Religious Crisis scale, the range values provided by Piedmont (2020) for evaluation were 6-9, 5-8, and 5-8, respectively for age groups 1, 2, and 3. The

mean scores in this study were 16.66, 17.04, and 16.80 respectively for the age groups. Values stood above the ranges and were relatively high, considering that the RC scale could score from 4 to 24. This points to the existential crisis that the women were experiencing. It is as if they continued serving a God who was not answering their prayers. One respondent (age 28 participant, STG262) said:

> "I am discouraged by life. Many judge me, I judge my God since it is He who allowed all of this".

This finding echoes Gezinski et al.'s (2021) view that coping mechanisms could be hindered by religion and lead to religious crisis, when comes the feelings that prayers went unanswered; the women could develop a hatred against God, taking her infertility as a curse or a punishment from Him. Gheysari et al. (2023) put it as a negative religious coping where the women have a negative appraisal of God whom they consider a punitive force with uncertain ability to answer prayer, and they developed anger against Him. Continuing the comments on such high values of the Religious Crisis scale, Piedmont (2020) states of high levels of emotional distress, bitterness, dissatisfaction, and suspicion about others' motivations, as characterizing such individuals. It came out from all interviews and pastors' focus groups that women with infertility developed bitterness over time, and at gatherings, suspected everyone of gossiping about them. This finding resonates with those in Wnuk (2024) where negative coping strategy of being angry at God, taking Him responsible for the infertility condition could present a link with psychological distress.

In summary, ASPIRES gives a consistent measure to the spirituality of the surveyed women and all aspects of the findings were approved by the qualitative data. The spiritual Transcendence scale appeared prayer-focused, and the Religious Sentiments scale showed good values. However, the data set failed to show internal

consistency reliability for the Religious Sentiments and the Religious Involvement scales. The acceptable Cronbach alpha for the Religious Crisis revealed a group in religious crisis. Future analyses could use the Spiritual Transcendence scale, which aligns well with the concept of spirituality in this study: the attribution of meaning and purpose given to the experience of infertility, from individual appropriation of the core concepts of Christian faith (Safara et al., 2024; Sena et al., 2021).

Prayer supplanted any other expression of spirituality and was extensively present in the qualitative data, and in all aspects investigated. The link between infertility and spirituality or prayer has been highlighted in previous studies. For example, Foti et al. (2023) measuring the coping strategies of women under fertility care with spiritual coping in a multidimensional scale, found importance of motherhood positively associated with spiritual coping. Such finding suggested that the desire for biological offspring may lead women to turn to or focus on practices lifting spirituality. In addition, spirituality in daily life has been observed by Mshayisa et al. (2024) in South Africa who, investigating the role of African spirituality in kinship care, stated that spirituality guides people's ways and informs all aspects of their life, and leads them to achieve a higher consciousness of self. It shapes their worldviews from which stem their values, beliefs and practices, and attitudes. This may explain why prayer as a coping strategy was massive in every aspect of the data.

***Infertility Stigma Coping Strategies***

The coping strategies of the women with infertility was measured with COMPI Coping Strategy Scales. The 384 responses to the items in the scale were assigned value and computed. The Cronbach's α was 0.78 for the CSS, 0.85 for the Active-Avoidance subscale (4 items), 0.84 for the Active-Confronting subscale (7

items), 0.93 for the Passive-Avoidance subscale (3 items), and 0.82 for the Meaning-Based Coping subscale (5 items). Internal consistency reliability scores for the items on all four subscales ranged from good to very good. The descriptive statistics of the scale are presented in Table 12.

**Table 12**

*CSS Measures of Central Tendency and Dispersion*

| Scale | Mean | Std. Dev. | Min | Max | Range |
|---|---|---|---|---|---|
| Entire COMPI CSS | 52.13 | 7.70 | 20.00 | 76.00 | 56.00 |
| Active-Avoidance | 7.37 | 3.11 | 4.00 | 16.00 | 12.00 |
| Active-Confronting | 18.14 | 5.07 | 7.00 | 28.00 | 21.00 |
| Passive-Avoidance | 10.88 | 1.89 | 3.00 | 12.00 | 9.00 |
| Meaning-Based Coping | 15.74 | 3.15 | 5.00 | 20.00 | 15.00 |

*Note*. Mean values and standard deviation of coping strategy scales.

Given the values in Table 12, the active-avoidance strategy was the least scoring, and the active-confronting the most. The second best used was the meaning-based strategy, followed by the passive-avoidance. The qualitative data supported these results. An age 26 woman (CST87) said:

"I often leave places where I feel depressed".

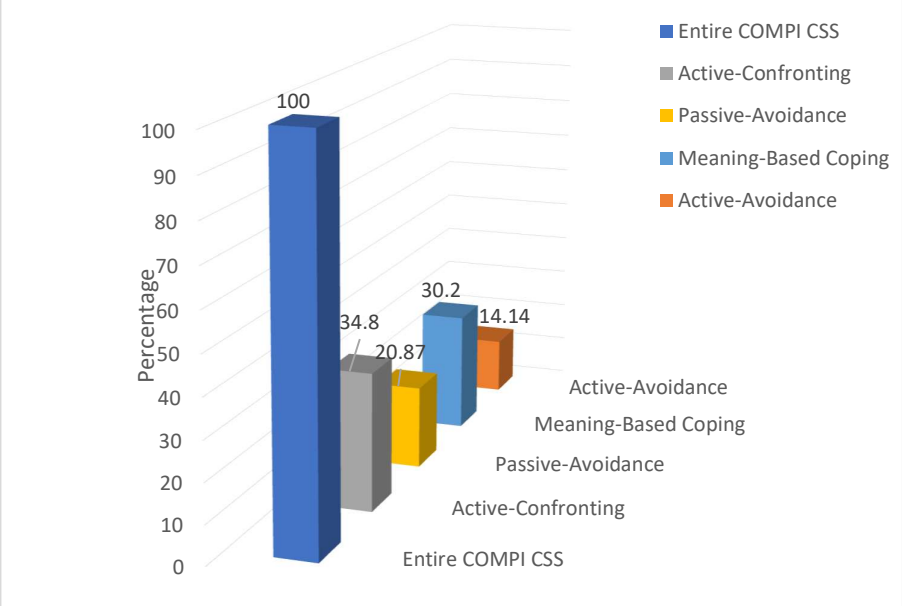
Such active-avoidance examples were few in the data. All women in the survey sought infertility treatment, and 55.11% employed all types of treatment. This supports the high value of active-confronting dimension of the scale. The meaning-based coping scoring second makes sense, considering the study setting which was the church, and the prayer-centred spirituality found in the previous section is supportive.

Passive-avoidance appeared in the qualitative accounts where 9.11% of women just prayed as treatment approached. In the survey, women named specific coping strategies as praying (29.17%), crying (22.92%), self-comfort (15.10%),

indifference (9.11%), calm (8.07%), rumination (5.99%), arguments (3.64%), self-isolation (3.13%), and focus on work (2,87%). One woman named several strategies. Senior women in focus group concurred with these and added that self-isolation may be at play even when the woman is physically present in a gathering as they avoid giving their opinion and reduce interpersonal relationships to the minimum of time. These findings are similar to those in previous studies where several strategies came out in the same study. Examples include Asiimwe et al. (2022), Bawadi et al. (2024), Çitil Canbay et al. (2022), Dierickx (2022), Jiang et al. (2025), Mashah (2024), Naab et al. (2025), Ofosu-Budu and Haninnen (2021), and Sharma et al. (2024). The scale is visualized in Figure 5.

**Figure 5**

*The COMPI Coping Strategies Scales*




*Note*. Visualization of the COMPI CSS and subscale mean values. Source: Researcher, 2026.

As mentioned previously, women moved from one strategy to another. A 38 years old woman (CST224) said:

> "I have been wanting to conceive for 17 years. At first, I used to respond, but now I no longer react to hassles; on the contrary, I pray for those people".

All women applied problem-focus approach, as they all tried treatment. In addition to the 9.11% mentioning prayer as an exclusive coping strategy, 16.67% supplemented herbal approaches, due to socioeconomic limitations.

These findings align with previous research. Odek et al. (2021) in Kenya found that due to socioeconomic factors, coping mode choices were motivated by traditional and religious beliefs. Thus, spiritual interventions were sought as source of support and coping strategy as well as potential solution to infertility. Consequently, 20% of participants resorted to prayers. Similarly, in Cameroon, Mpono et al. (2024) found prayer and keeping busy as the most used coping strategies.

The high level of the meaning-based strategy in the scale might be explained by the study context which is the church, where the inner self of the woman was nurtured with the values of the belief system, thereby growing her spirituality. 53 years old woman (CST244) stated:

> "I often say that God's timing is the best".

All church leaders and senior women in the focus groups stated that women's coping strategies depended on the stage in their experience of infertility. Male participant (FCGCL4) explained:

> "At early stage, they feel shame and despair and hide, self-isolate, and withdraw from some church activities. They avoid any gathering involving children or set about them. They cry a lot and show sadness. Some react vividly to stigmatization before crying on their own. At a middle stage, they show more indifference as they start getting used to their condition and the whole surrounding situation. At a later stage, most of them overcome their

> shame and mingle with the community. They realize that it is at the age of being a grandmother and they let go of everything. They try to be faithful observants to the word of God. They tell themselves that it was God's will for them to go through such a condition. They accept themselves, accept the situation, and hope and some open up to any eventual act of compassion from brothers and sisters in the church".

This echoes Fubara-Manuel and Fretheim's (2023) view that Christian spirituality involves the expressions, values, and reflections on the daily lived experience of Christian faith. And Villegas (2023) point out that Christian spirituality is a religious spirituality where the Christian tradition embraces the values and beliefs that turn to meaning and guide practice to wholeness and transcendence.

In addition, female leaders and senior women evoked some other strategies. Female participant (FCGFCL7) stated:

> "They avoid visiting women with new born, stop going out with their husbands, avoid frequenting areas where they are well known, have just a few highly selected friends. Some of them use prayer as an outlet. Some others foster care for a relatives' child or make donations with hope".

These are supported by previous findings: Jing et al. (2021) found stigma as inversely related to fertility quality of life and the active-avoidance mode as the most important coping strategy that mediates stigma and fertility quality of life. Akarsu and Beji (2021) found social stigma, social isolation, self-stigma, sadness, fear, unhappiness among others, and mainly, spirituality was part of coping strategies, as women perceive their condition of infertility as the will of God and turn to prayer.

***Relation of Spirituality to Coping with Infertility Stigma***

In inferential statistics, a simple linear regression analysis was conducted to evaluate the extent to which the Spiritual Transcendence scale could predict the Coping Strategies scale. The SPSS outputs are shown in Tables 13 to 15.

**Table 13**

*ST / CSS Model Summary*[b]

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate | Durbin-Watson |
|---|---|---|---|---|---|
| 1 | .453[a] | .205 | .203 | 6.87646 | 1.927 |

a. Predictors: (Constant), ST
b. Dependent Variable: CSS

**Table 14**

*ST / CSS / ANOVA*[a]

| Model | | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| 1 | Regression | 4659.103 | 1 | 4659.103 | 98.531 | .000[b] |
| | Residual | 18063.124 | 382 | 47.286 | | |
| | Total | 22722.227 | 383 | | | |

a. Dependent Variable: CSS
b. Predictors: (Constant), ST

**Table 15**

*ST / CSS / Coefficients*[a]

| Model | Unstandardized Coefficients | | Standardized Coefficients | | | 95.0% Confidence Interval for B | |
|---|---|---|---|---|---|---|---|
| | B | Std. Error | Beta | t | Sig. | Lower Bound | Upper Bound |
| 1(Constant) | 23.930 | 2.863 | | 8.359 | .000 | 18.301 | 29.559 |
| ST | .343 | .035 | .453 | 9.926 | .000 | .275 | .411 |

a. Dependent Variable: CSS

Regression assumptions were met as confirmed by the visual examination of the regression standardized residuals' plots. The histogram and Normal P-P plot showed normality and the scatter plot showed homoscedasticity. From the outputs, a significant regression was found $F(1, 382) = 98.531$, $p < 0.000$.

Spirituality (ST) accounted approximately for 20.3% of the variance in coping strategies (CSS) as shown by the adjusted $R^2$ value in Table 13, making the remaining 79.7% to be explained by other factors. The regression equation is:

Coping Strategies = 23.930 +.343*(Spiritual Transcendence).

From Table 15, spirituality had a significant positive influence on coping strategies, since the *p*-value was less than 0.05, which is the selected level of significance. Consequently, an increase in spiritual transcendence will positively influence coping strategies by .343. The confidence interval indicated that we can be 95% certain that the slope to predict Coping Strategy from Spiritual Transcendence is between .275 and .411. Spirituality as coping strategies was also found in qualitative accounts as established in the previous section. It was equally widely addressed in empirical works. In addition to prayer, Dehghan et al. (2024) in Iran reported coping strategies as supplication and blessings seeking. Similarly, Annan-Frey et al. (2023) in Ghana found religious and spiritual strategies for coping. The women in the study drew upon their religious faith to adapt, rely on their devout conviction as a vital source for spiritual support. Consequently, they developed religious practices like fasting and prayers, believing that God would provide a child for them.

From the values of $R^2$ in the regression analysis, Spiritual Transcendence explained less than the quarter of Coping Strategies. The discussions with senior survey participants and leaders showed that coping strategies were multistage, more avoidant in early years of infertility, and moving towards meaning-based during later years. Thus, many other considerations may explain the choice and evolution in the choice of coping strategies. In addition, given that the Prayer Fulfilment subscale was strong in the Spiritual Transcendence scale, suggesting that the spirituality of the women was prayer-centred, it can be considered that whatever the type of coping or

the stage in the use of type, prayer was always part of the strategies and an act of coping.

This corroborates the Pearson correlation coefficient test computed to assess the linear relationship between Spiritual Transcendence scale and the Coping Strategies' subscales. The SPSS Output is in Table 16.

**Table 16**

*Pearson Correlation ST/CSS Scales – SPSS Output*

| Correlations | | | | | | |
|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 |
| 1. ST | Pearson Correlation | 1 | | | | |
| | Sig. (2-tailed) | | | | | |
| | N | 384 | | | | |
| 2. Active Avoidance | Pearson Correlation | -.141** | 1 | | | |
| | Sig. (2-tailed) | .006 | | | | |
| | N | 384 | 384 | | | |
| 3. Active Confronting | Pearson Correlation | .501** | -.034 | 1 | | |
| | Sig. (2-tailed) | .000 | .503 | | | |
| | N | 384 | 384 | 384 | | |
| 4. Passive Avoidance | Pearson Correlation | .404** | .012 | .273** | 1 | |
| | Sig. (2-tailed) | .000 | .812 | .000 | | |
| | N | 384 | 384 | 384 | 384 | |
| 5. Meaning-Based | Pearson Correlation | .198** | -.127* | .111* | .425** | 1 |
| | Sig. (2-tailed) | .000 | .013 | .029 | .000 | |
| | N | 384 | 384 | 384 | 384 | 384 |
| **. Correlation is significant at the 0.01 level (2-tailed). | | | | | | |
| *. Correlation is significant at the 0.05 level (2-tailed). | | | | | | |

*Note*. Pearson Correlation values.

As shown by Table 16, there was a negative correlation between Spiritual Transcendence and Active Avoidance, $r(382) = -.14$, $p = .006$. The correlation was positive between Spiritual Transcendence and active confronting, ($r(382) = .50$, $p = .000$); and passive avoidance, $r(382) = .40$, $p = .000$; and meaning-based coping, $r(382) = .20$, $p = .000$). All correlations were significant at the 0.01 level.

From these results, each coping strategy was positively influenced by the spiritual state of the survey respondent, except the active-avoidant woman who

testified by the choice of coping strategy, of her decreasing spiritual vitality. However, regarding the strength of the relationship, there was almost no relationship between spirituality and active avoidance, and meaning-based coping strategies ($r <$ .25). Passive-avoidance strategy had a weak relationship with spirituality ($r < .50$). Active-confronting had a moderate relationship with spirituality ($r > .50$).

The multistage coping strategy model evoked from the qualitative data showed that the choice of coping style was the individual's condition-dependent. This condition may root in the Evangelical Church context or the sociocultural context or a mixture of both. The finding of prayer-centred spirituality of women is available in literature. For Amenga-Etego et al. (2021), and Fubara-Manuel and Fretheim (2023), women express their spirituality through action, prayer, songs, praise, symbols. As basics, Fubara-Manuel and Fretheim (2023) presented Christian rituals as church attendance, Bible study, prayer, and more. The mention of prayer in coping strategies was found in several previous studies. Examples include Akarsu and Beji (2021), Asiimwe et al. (2022), Dehghan et al. (2024), Mashaah et al. (2024), and Sharma et al. (2024).

In sum, the analysis on objective 1 shows that spirituality related to coping mechanisms in a significant linear relationship. The women in the study prayed all their fertility-life long. Their spirituality was prayer-centred and influenced each coping strategy according to its concept.

**Objective 2: Resilience and Psychological Effects of Infertility Stigma**

The second objective of the research was to assess the role of resilience in managing the psychological effects of infertility stigma among married women within the selected Evangelical Church Assemblies in Zou County, Benin. The

variables resilience, infertility stigma, and psychological effects of infertility stigma were assessed before the examination of the relationships between them.

***Resilience***

The resilience of women with infertility was measured with the CD-RISC-10. The total scores could range from 0 to 40. The higher the score, the greater the resilience. The lower the score the lesser the resilience. Table 17 shows the scale score ranges as per quartile.

**Table 17**

*Descriptive Statistics of CD-RISC-10*

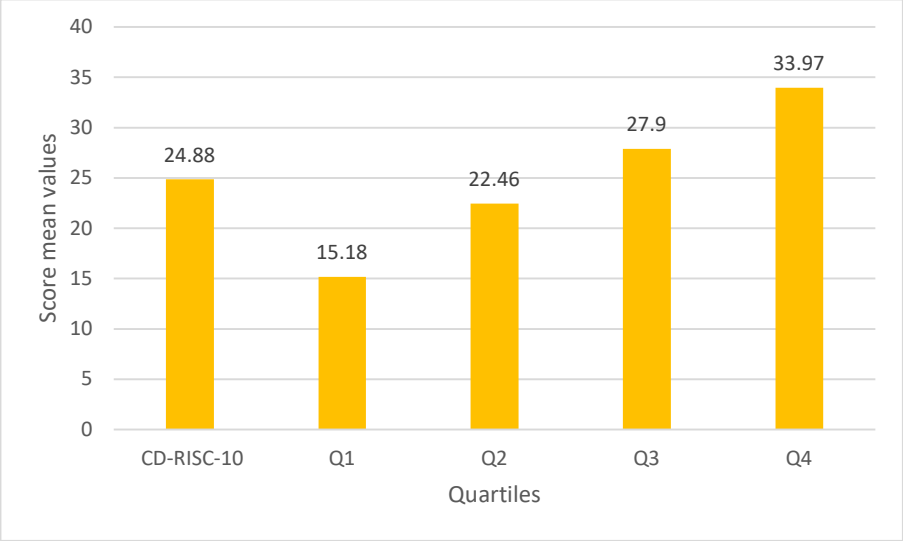
| Quartile | N | (%) | Range | Minimum | Maximum | Mean | Std. Deviation |
|---|---|---|---|---|---|---|---|
| CD-RISC-10 | 384 | 100 | 40.00 | .00 | 40.00 | 24.88 | 7.69 |
| CDRISC-10-Q1 | 96 | 25 | 20.00 | .00 | 20.00 | 15.18 | 5.25 |
| CDRISC-10-Q2 | 96 | 25 | 5.00 | 20.00 | 25.00 | 22.46 | 1.91 |
| CDRISC-10-Q3 | 96 | 25 | 5.00 | 25.00 | 30.00 | 27.90 | 1.51 |
| CDRISC-10-Q4 | 96 | 25 | 10.00 | 30.00 | 40.00 | 33.97 | 3.34 |

*Note*. Descriptive statistics of the scale per quartile.

Table 17 indicates that the lowest 25% of the surveyed women scored from 0 to 20. They were the least resilient, probably those for whom coping with infertility stigma was a great challenge. The second and the third quartiles ranged from 20 to 25, and 25 to 30 respectively. Above 75% of the women, the values 30 to 40 indicated the highest resilience. Figure 6 presents the scale.

**Figure 6**

*Mean Scores of the CD-RISC-10 Scale and Quartiles*




*Note*. Visualization of the mean scores of the CD-RISC-10 per quartile. Source: Researcher, 2026.

The values in Figure 6 appeared low and the ranges larger in comparison to those in Campbell-Sills et al. (2009). The median score was 32 and the lowest to highest quartiles were 0-29, 30-32, 33-36 and 37-40, in a community sample of 764. The Cronbach's α was 0.91 for the scale, pointing to a very good reliability of the scale in the present study. The low score values in this study may be due to the nature of the sample made of women dealing with infertility-related stressors. The qualitative accounts present protective factors and promotors of resilience in the study area as health, financial autonomy, support, and success stories, and various mixtures of the four factors.

About health, women named physical health (27.08%) and mental health (21.88%) among resources necessary for building resilience. Previous studies found resilience associated with better physical and mental health. Fernandez-Ferrera et al. (2022) conceptualized resilience as a construct that translated the ability to maintain a normal physical as well as psychological functioning through adaptive coping with

stress and adversity. In their study, they found that higher resilience entailed low levels of psychological distress with women undergoing IVF. Santa-Cruz et al. (2023) found the protective role of resilience against stress and anxiety in women undergoing fertility care. Similarly, Shafierizi et al. (2022) found resilience enhancing posttraumatic growth in a cross-sectional study.

About financial autonomy, 8.54% of the women in the survey mentioned this factor. An additional 38.28% stated that the woman should have an occupation that directs her far away from home daily. This is justifiable because of hassles from family stigma, as it would help them escape the same and divert attention. Women expressed it in various ways:

29 years old woman (RSL34):

> "… It's mainly keeping busy with something. If you do something that makes you money, you worry less".

Age 36 woman (RSL183):

> "If you have an activity and you focus on it, you somewhat forget about your situation and what people are saying around you".

Age 29 woman (RSL376):

> "Having an activity that gets you out of the house…".

These findings align with previous ones in literature, focusing on prayer and keeping busy, diverting daily attention from the issue of infertility (Jing et al., 2021; Mpono et al., 2024).

Another factor of resilience evoked by women was success stories (66.41%) and testimonies from known women (33.59%). About social support, 9.64% of women just named it as a factor. Further, 61.72% believed that the support of all, and mainly of the husband was a crucial promotor of resilience. These concur with

previous findings. Janković and Todorović (2021) in Serbia found adequate social support by family members and friends and critically the support of the spouse, and peer support as helpful for the woman navigating infertility. Khan et al. (2023) found social support alongside other factors as psychosocial factors associated with resilience.

Further explanations of resilience focusing on culture came out with Church leaders and senior women as they stressed on support. A female participant (FCGSW3) summarized:

> "The support of a comforter can boost resilience. Support from various sources – the family of origin, in rare cases, some members of the family-in-law, or occasionally, the husband – help the woman to develop resilience in the face of infertility stigma".

In addition, senior women stated one culture-specific practice that serves as safeguards, provides the woman with restraint and helps maintain her resilience: the speech of advice of the tradition keepers in the family-in-law. A female participant (FCGSW6) explained:

> "When the woman is first brought to the matrimonial house, she is told that a deity or an ancestor brought her to the in-law-family, and is the one she should address for any issue she may face in her marriage".

To note, such a woman might feel potentially supported, but she would not see a deity, nor an ancestor, unless by faith, whereby, it becomes an invisible resource for her resilience. This resonates with Khan et al. (2023) who mentioned social support as one protected factor of resilience and commented that making use of one's own resources while seeking support enables the woman to successfully deal with infertility-related stressors. In the church, this cultural practice finds an equivalent in

prayer, where the woman can freely and confidently refer to God for inner needs. According to a senior woman (FCGSW7) in a focus group:

> "Securely sharing on our condition can be very comforting, and hope, whether inside or outside the church, is a factor of resilience, similarly to support".

This view echoes Klaus et al. (2023) on the perception of support related to disclosing infertility condition.

Female leaders insisted that resilience nurtures hope. In an interview, INTFL14 said:

> "There is no resilience without faith in this mater, as resilience is rooted in hope, as resilient women are those who know the Lord".

Consequently, faith-based counselling should entertain faith and hope.

***Infertility Stigma***

Infertility stigma was measured with the Infertility Stigma Scale - Short Form. Table 18 displays the descriptive statistics of the scale.

**Table 18**

*Measures of the Central Tendency of the ISS-SF Scales*

| Scale | Mean | Std. Dev. | Min | Max | Range |
|---|---|---|---|---|---|
| Infertility Stigma Scale-Short Form | 39.49 | 11.47 | 15.00 | 60.00 | 45.00 |
| Self-devaluation | 12.14 | 4.98 | 4.00 | 20.00 | 16.00 |
| Social withdrawal | 10.83 | 3.09 | 3.00 | 15.00 | 12.00 |
| Public stigma | 8.03 | 1.95 | 2.00 | 10.00 | 8.00 |
| Family stigma | 8.50 | 4.05 | 3.00 | 15.00 | 12.00 |

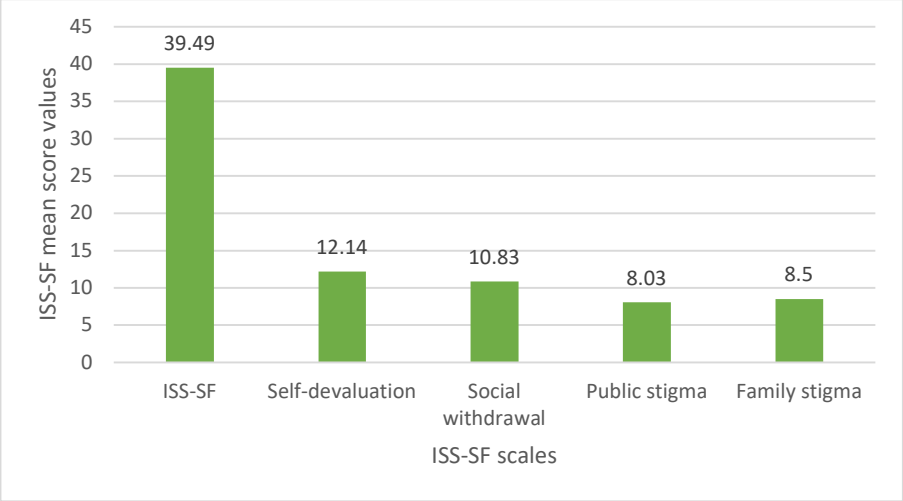
*Note*. Mean values and standard deviation of the ISS-SF scale and subscales.

As displayed by Table 18, the Cronbach's α for the ISS-SF in this study was 0.90, which was very good. The value was good (0.88) for the Self-Devaluation subscale (4 items). It was 0.74 for the Social Withdrawal subscale (3 items), which was acceptable. For the Public Stigma subscale (3 items), α was weak with a value of

0.65. The Family Stigma subscale (2 items), showed a good reliability with a value of 0.88. Even though the Cronbach's alpha values were lower compared to Li et al. (2025), the scale demonstrated a strong reliability in the present study. The scale is visualized in Figure 7.

**Figure 7**

*Mean Scores of the ISS-SF Scales*




*Note*. Visualization of the ISS-SF scale and subscales mean scores. Source: Researcher, 2026.

Self-devaluation received the highest score; followed by social withdrawal; family stigma ranked third, and public stigma presented the lowest values. This pictured well the qualitative data: the self of the woman was highly affected by stigma and social withdrawal appeared like a self-protection strategy. A woman, 46 (CST90), said:

"I don't respond, I don't have any friends, I often stay alone to avoid everything"

In addition, the pressure from husband and family-in-law was incredibly high as expressed by a woman aged 30 (STG107):

> "My husband is the biggest problem, especially since he has other wives who have children and I don't; I feel like I have no value before him".

Another woman (age 35, STG139) said:

> "… Above all, my in-laws. They say that even though we got married in the church, after 12 years there's still nothing. That this marriage is a failure for their son".

From all study participants, infertility stigmatization came out in the study area as mockery, name calling, insults, contempt, humiliation and shame inflicted, judgment, slander, abuse by the in-laws, stress from the community, domestic and intimate partner violence, rejection of society, distancing from children, and more. This expression of stigma aligns with findings in previous studies (Islam & Sharmin, 2024; Jing et al., 2021; Jing et al., 2022; Van Rooij et al., 2021; Xie et al., 2023).

Interviews and focus groups provided better insight into the issue of infertility stigma. From a cultural perspective, the society perceive infertility as abnormal, resulting from a curse, if it is not the result of a behavioural or sexual misconduct. Church leaders see infertility as the will of God, from the biblical perspective. It is socially inconvenient, which justifies stigmatization. A Pastor (FCGCL9) said:

> "At a spiritual level, God is considered the solution to infertility since in the church, focus is on fasting and prayer, and outside the church, one sacrifices to the *Se* (local name of God Creator) through a chosen deity".

Infertility therefore was perceived as metaphysical and children were seen as sacred in cultural perspectives. In addition, they are the blessing of a marriage in Evangelical perspectives. Another Pastor (INTLP12) said:

> "Basing on scriptures such as Psalm 127 or Genesis 1, 28 where God ordered to multiply. Deuteronomy 7, 14 extends the blessings to the absence of

> sterility in the house of the blessed one. Consequently, lack is akin to a curse, and she who does not multiply is not in God's will". [Bible citations are from the *New International Version* (2001)].

Previous studies have also got the sociocultural perception of infertility as a curse (see for example, Okantey et al., 2021). Equally, the church's reaction to infertility was depicted in the study of Gezinski et al. (2021). Stigma was attributed to the family culture and cultural norms as well as religious expectations. Stigma brought feelings of sadness, anger, bitterness; social stigma, internalized stigma, perception of self as failure, and isolation as a result of stigma from religious community.

In this study, the woman in the church, in addition to feeling indebted to her husband whose lineage was put at risk, blamed herself for being the cause of their marriage deprivation of blessings from God. She developed self-stigma and wondered how God created her body so that it did not function just like others'. She felt incomplete, unfinished, and blamed herself for being incapable of the existential duty assigned to all female human beings. This feeling of non-accomplishment put her spirituality at imbalance. Her relationship with God was clouded by unanswered questions. Self-stigmatization extended its tentacles into several areas of the women's life.

Condemnation, not compassion. That is what was found in the church, where the woman was believed by the fellow church members to deserve her condition, due to a hidden sin or lack of faith. They even accused the woman of non-submission to the husband and shirking marital duty to harm him. The church members behaved exactly like others in the community, and did more. Remarkably, stigma was openly attributed outside the church while it was camouflaged and hidden within the church. A male study participant (FCGCL13) said:

"We all stigmatize in one way or another".

Stigma was engrained in the church members' perception of infertility.

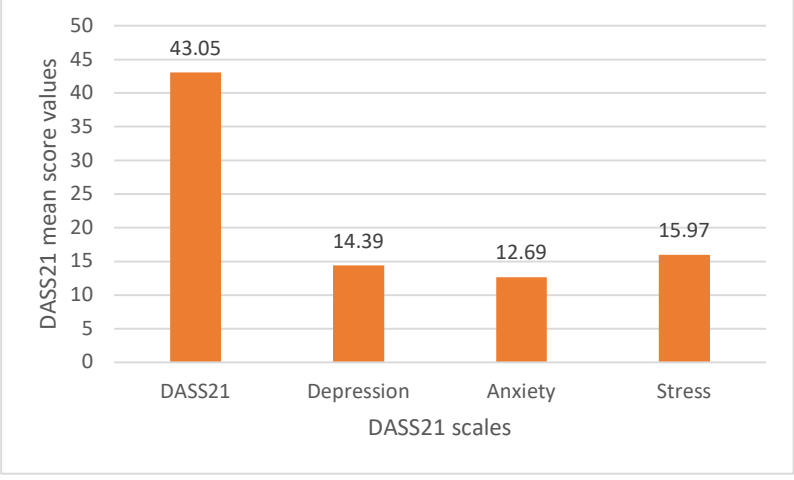
In the case the woman is the pastor's wife, her suffering was heightened whenever a baby was presented to the community – mostly in rural areas – and consecrated to the Lord. In some church communities, the custom was for her to carry the baby while dancing joyfully ahead of the parents and some other church members, to go meet the pastor at the front for the ceremony. It was invariably a trigger for self-stigmatisation. These findings are highly cultural and contextual. However, they fit the model set by Ungar (2021) citing the importance of the environment including context and culture, for resilience in navigating adversity by negotiating personal resources needed to develop prosocial coping behaviours.

***Psychological Effects of Infertility Stigma***

To measure the psychological effects of infertility stigma, the short form of the Depression Anxiety and Stress Scale (DASS21) was used. The scores are shown in Tables 18 and 19. Figure 8 visualize the scales.

**Figure 8**

*Mean Scores of the DASS21 Scales*




*Note*. Visualization of the DASS21 scale and subscales.
Source: Researcher, 2026.

From the Figure 8, stress ranks first, followed by depression, and anxiety is the least felt psychological impairment. Table 19 presents the descriptive statistics.

**Table 19**

*DASS21 – Measures of Central Tendency and Dispersion*

| Scale | Mean | Std. Dev. | Min | Max | Range |
|---|---|---|---|---|---|
| DASS21 | 43.05 | 35.97 | .00 | 126.00 | 126.00 |
| Depression | 14.39 | 12.32 | .00 | 42.00 | 42.00 |
| Anxiety | 12.69 | 11.94 | .00 | 42.00 | 42.00 |
| Stress | 15.97 | 12.56 | .00 | 42.00 | 42.00 |

*Note*. Mean values and standard deviations of the DASS21 and subscales.

From table 19, the three subscales present the same ranges. The Cronbach's α was 0.98 for the entire scale, 0.94 for the Depression scale, 0.93 for the Anxiety scale, and 0.95 for the Stress scale, pointing to a very good reliability. For further insight, the scales were discriminated in normative ranges in Table 20 from the conventional cut-off scores with the concordant severity label (Lovibond & Lovibond, 1995).

**Table 20**

*The DASS21 Severity Label of Scores*

| DASS21 – Severity label | | Range | Frequency | Percentage (%) |
|---|---|---|---|---|
| Depression | Normal | 0-9 | 165 | 42.97 |
| | Mild | 10-13 | 41 | 10.68 |
| | Moderate | 14-20 | 58 | 15.10 |
| | Severe | 21-27 | 44 | 11.46 |
| | Extremely Severe | 28+ | 76 | 19.79 |
| | Total | - | 384 | 100 |
| Anxiety | Normal | 0-7 | 163 | 42.45 |
| | Mild | 8-9 | 25 | 6.51 |
| | Moderate | 10-14 | 66 | 17.19 |
| | Severe | 15-19 | 29 | 7.55 |
| | Extremely Severe | 20+ | 101 | 26.30 |
| | Total | - | 384 | 100 |
| Stress | Normal | 0-14 | 220 | 57.59 |
| | Mild | 15-18 | 26 | 6.81 |
| | Moderate | 19-25 | 27 | 7.07 |
| | Severe | 26-33 | 70 | 18.32 |
| | Extremely Severe | 34+ | 39 | 10.21 |
| | Total | - | 382 | 100 |

*Note*. Severity levels of the DASS21 and subscales.

Table 20 indicates that most of the surveyed women fall in the normal range, 42.97% for depression, 42.45% for anxiety, and 57.79% for stress. They were probably not struggling with these psychological impairments, due to some unknown factors. However, the level is extremely severe for a substantial minority: 10.21% (stress), 19.79% (depression), and 26.30% (anxiety). These women were likely experiencing a clinical level of mental health issue and lack of intervention (Lovibond & Lovibond, 1995). The other values in the table indicated the severity level of the psychological impairment as mild, moderate, or severe.

Qualitative accounts corroborate these findings. One woman (age 46, CRS90) said:

"Society does not recognize you; you are often alone with your thoughts".

Alone with their thoughts they easily developed psychological impairments. More insight into the consequences of infertility and stigma for the woman was got from the leaders in the interviews and focus groups. A male study participant (FCGCL2) commented:

> "Infertility unbalances the women who see themselves diminished and this affects their behaviour in the church. They avoid gatherings involving children, they are excessively wary, they develop difficult social relationships where they believe that everyone gossips about them and resent it. They harbour negative thoughts and sometimes contemplate suicide. They have endless tears, sadness, rumination, mood change. They are constantly stressed, have feelings of depression, and anorexia".

The case of one lady was reported that after an event involving children, when she got home, she would talk to fruit trees in her garden, telling them how fortunate they were to be able to bear fruit every year. She would finish showing them her womb telling them how incapable she was of such a great achievement. These women saw themselves as capable of nothing and finally lacked of self-confidence. Similar consequences of stigma were also found in literature (Bornstein et al., 2023; Kyei et al., 2022; Sharma et al, 2024).

***Relationship between DASS21 and ISS-SF***

As depression, anxiety and stress are known as inherent to psychological effects of infertility, simple linear regression analysis was conducted to evaluate the extent to which the ISS-SF could predict the DASS21 in the study area. The SPSS outputs are shown in Tables 21 to 23.

**Table 21**

*DASS21 / ISS-SF Model Summary*[b]

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate | Durbin-Watson |
|---|---|---|---|---|---|
| 1 | .673[a] | .453 | .452 | 13.31803 | 1.702 |

a. Predictors: (Constant), ISS-SF
b. Dependent Variable: DASS21

**Table 22**

*DASS21 / ISS-SF / ANOVA*[a]

| Model | | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| 1 | Regression | 55818.628 | 1 | 55818.628 | 314.702 | .000[b] |
| | Residual | 67400.610 | 380 | 177.370 | | |
| | Total | 123219.238 | 381 | | | |

a. Dependent Variable: DASS21
b. Predictors: (Constant), ISS-SF

**Table 23**

*DASS21 / ISS-SF Coefficients*[a]

| Model | Unstandardized Coefficients | | Standardized Coefficients | | | 95.0% Confidence Interval for B | |
|---|---|---|---|---|---|---|---|
| | B | Std. Error | Beta | t | Sig. | Lower Bound | Upper Bound |
| 1(Constant) | -20.129 | 2.445 | | -8.233 | .000 | -24.936 | -15.322 |
| ISS-SF | 1.055 | .059 | . 673 | 17.740 | .000 | .938 | 1.172 |

a. Dependent Variable: DASS21

Regression assumptions were met as confirmed by the visual examination of the plots of the regression standardized residuals. The histogram and Normal P-P plot showed normality and the scatter plot showed homoscedasticity. From the outputs, a significant regression was found $F(1, 380) = 314.702$, $p < 0.000$.

Infertility stigma (ISS-SF) accounted approximately for 45.20% of the variance in psychological effects (DASS21) as shown by the adjusted $R^2$ value in Table 21,

making the remaining 54.8% to be explained by other factors. The regression equation is:

$$DASS21 = -20.129 + 1.055*(ISS\text{-}SF).$$

From Table 23, infertility stigma had a significant positive link to depression, anxiety, stress and other consequences as the p-value was less than 0.05, the selected level of significance. Consequently, an increase in ISS-SF will have effect on DASS21 by 1.055. The confidence interval indicated that we can be 95% certain that the slope to predict depression, anxiety and stress from infertility stigma is between .938 and 1.172. From the regression equation, there are factors reducing the linear relationship between psychological effects and infertility stigma.

Further, Pearson correlation coefficient test was computed to check for linear relationship between the ISS-SF, DASS21, and their respective subscales. The SPSS output is in Table 24, showing positive correlation between all variables significant at the 0.01 level. There was a positive moderate relationship between infertility stigma and depression, anxiety and stress, respectively, ($r(382) = .67$, $p = .000$); ($r(382) = .64$, $p = .000$); and ($r(382) = .66$, $p = .000$). Depression moderately related to self-devaluation ($r(382) = .65$, $p = .000$), and social withdrawal ($r(382) = .57$, $p = .000$). It is weakly related to public stigma ($r(382) = .47$, $p = .000$), and family stigma ($r(382) = .44$, $p = .000$). Anxiety moderately related to self-devaluation ($r(382) = .61$, $p = .000$), and social withdrawal ($r(382) = .54$, $p = .000$). It was weakly related to public stigma ($r(382) = .46$, $p = .000$), and family stigma ($r(382) = .44$, $p = .000$). Likewise, stress moderately related equally to self-devaluation and social withdrawal ($r(382) = .61$, $p = .000$). It weakly related to public stigma ($r(382) = .49$, $p = .000$), and family stigma ($r(382) = .41$, $p = .000$).

**Table 24**

*DASS21 / ISS-SF – SPSS Output of Pearson Correlation*

| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|---|---|---|---|---|---|---|---|---|---|---|
| 1. ISS-SF Total | Pearson Correlation | 1 | | | | | | | | |
| | Sig. (2-tailed) | | | | | | | | | |
| | N | 384 | | | | | | | | |
| 2. Self-Devaluation | Pearson Correlation | .890** | 1 | | | | | | | |
| | Sig. (2-tailed) | .000 | | | | | | | | |
| | N | 384 | 384 | | | | | | | |
| 3. Social Withdrawal | Pearson Correlation | .845** | .680** | 1 | | | | | | |
| | Sig. (2-tailed) | .000 | .000 | | | | | | | |
| | N | 384 | 384 | 384 | | | | | | |
| 4. Public Stigma | Pearson Correlation | .730** | .590** | .716** | 1 | | | | | |
| | Sig. (2-tailed) | .000 | .000 | .000 | | | | | | |
| | N | 384 | 384 | 384 | 384 | | | | | |
| 5.Family Stigma | Pearson Correlation | .740** | .488** | .450** | .316** | 1 | | | | |
| | Sig. (2-tailed) | .000 | .000 | .000 | .000 | | | | | |
| | N | 384 | 384 | 384 | 384 | 384 | | | | |
| 6. Stress | Pearson Correlation | .659** | .613** | .613** | .489** | .410** | 1 | | | |
| | Sig. (2-tailed) | .000 | .000 | .000 | .000 | .000 | | | | |
| | N | 382 | 382 | 382 | 382 | 382 | 382 | | | |
| 7. Depression | Pearson Correlation | .671** | .647** | .571** | .467** | .443** | .946** | 1 | | |
| | Sig. (2-tailed) | .000 | .000 | .000 | .000 | .000 | .000 | | | |
| | N | 384 | 384 | 384 | 384 | 384 | 382 | 384 | | |
| 8. Anxiety | Pearson Correlation | .641** | .606** | .542** | .455** | .438** | .908** | .929** | 1 | |
| | Sig. (2-tailed) | .000 | .000 | .000 | .000 | .000 | .000 | .000 | | |
| | N | 384 | 384 | 384 | 384 | 384 | 382 | 384 | 384 | |
| 9. DASS21 Total | Pearson Correlation | .673** | .637** | .590** | .483** | .441** | .976** | .983** | .969** | 1 |
| | Sig. (2-tailed) | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | |
| | N | 382 | 382 | 382 | 382 | 382 | 382 | 382 | 382 | 382 |
| **. Correlation is significant at the 0.01 level (2-tailed). | | | | | | | | | | |

*Note*. The Pearson correlation values.

It comes out of this report in Table 24 that self-devaluation and social withdrawal moderately related to the three states of psychological impairment, and public stigma and family stigma related weakly to them. Infertility stigma related to psychological effects in the same pattern. Therefore, self-devaluation and social withdrawal were more likely to generate depression, anxiety and stress than public stigma and family stigma. Literature provides similar findings from previous research. Foti et al. (2023) found Perceived importance of motherhood positively associated with psychological distress as well as coping strategies such as spiritual coping, social withdrawal, denial, and negative self-perception. Likewise, Xie et al. (2023) found external stigma causing discrimination, shame, stress and depression, and both internal and external stigmas potentially generating social withdrawal or avoidance, negative emotions, anxiety and depression.

***Relation of Resilience to Managing Psychological Effects of Infertility Stigma***

The possible moderating role of resilience on the relationship between infertility stigma and its psychological effects was measured by moderation analysis with simple linear regression in SPSS. The outputs are shown in Tables 25-27.

**Table 25**

*CD-RISC-10 / ISS-SF / DASS21 Model Summary*

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate | Durbin-Watson |
|---|---|---|---|---|---|
| 1 | .679[a] | .461 | .458 | 13.23887 | |
| 2 | .681[b] | .463 | .459 | 13.22913 | 1.695 |

a. Predictors: (Constant), Centred ISS-SF, Centred CDRISC-10
b. Predictors: (Constant), Centred ISS-SF, Centred CDRISC-10, Interaction CDRISC-10-ISS-SF
c. Dependent Variable: DASS21 Total

**Table 26**

*CD-RISC-10 / ISS-SF / DASS21 / ANOVA[a]*

| Model | | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| 1 | Regression | 56792.759 | 2 | 28396.380 | 162.017 | .000[b] |
| | Residual | 66426.479 | 379 | 175.268 | | |
| | Total | 123219.238 | 381 | | | |
| 2 | Regression | 57065.467 | 3 | 19021.822 | 108.690 | .000[c] |
| | Residual | 66153.771 | 378 | 175.010 | | |
| | Total | 123219.238 | 381 | | | |

a. Dependent Variable: DASS21 Total
b. Predictors: (Constant), Centred ISS-SF, Centred CDRISC-10
c. Predictors: (Constant), Centred ISS-SF, Centred CDRISC-10, Interaction CDRISC-10-ISS-SF

**Table 27**

*CD-RISC-10 / ISS-SF / DASS21 Coefficients[a]*

| Model | | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. | 95.0% Confidence Interval for B | |
|---|---|---|---|---|---|---|---|---|
| | | B | Std. Error | Beta | | | Lower Bound | Upper Bound |
| 1 | (Constant) | 21.529 | .677 | | 31.783 | .000 | 20.197 | 22.861 |
| | Centred ISS | 1.048 | .059 | .668 | 17.699 | .000 | .931 | 1.164 |
| | Centred CD-RISC-10 | -.208 | .088 | -.089 | -2.358 | .019 | -.381 | -.035 |
| 2 | (Constant) | 21.488 | .678 | | 31.708 | .000 | 20.155 | 22.820 |
| | Centred ISS | 1.057 | .060 | .674 | 17.729 | .000 | .940 | 1.174 |
| | Centred CD-RISC-10 | -.214 | .088 | -.092 | -2.428 | .016 | -.388 | -.041 |
| | Interaction CD-RISC-10 / ISS | -.009 | .007 | -.048 | -1.248 | .213 | -.023 | .005 |

a. Dependent Variable: DASS21 Total

Assumptions for linear regression were met as confirmed by the visual examination of the regression standardized residuals plots. The histogram and Normal P-P plot showed normality and the scatter plot showed homoscedasticity. In the first model, the coefficients in Table 27 indicated that resilience (B = -.208, β = -.089, t = -2.358, $p$ = 0.019) and infertility stigma (B = 1.048, β = .668, t = 17.699, $p$ = 0.000) had significant effects on psychological effects of infertility stigma. In the second model, both resilience (B -.214=, β = -.092, t = -2.428, $p$ = 0.016) and infertility stigma (B = 1.057, β = .674, t = 17.729, $p$ = 0.000) remained significant but their interaction term (B = -.009, β = -.048, t = -1.248, $p$ = 0.213) failed to significantly predict psychological effects. This indicates that resilience did not moderate the relationship between infertility stigma and its psychological effects, but worked as an independent variable in an influencing role for the relationship.

This finding does not align with the literature reviewed. The resilience moderating effect found in literature was not directly related to stigma, but the association of stress with quality of life for women with infertility. About stigma, it was a mediating role found by Zhao et al. (2022) between stigma and social avoidance and distress in women with infertility. Also, in Yan et al.'s (2024b) study, resilience presented a significant mediating effect on the association between several psychological markers such as psychological stress or posttraumatic growth, and quality of life.

Overall, the study of objective 2 showed that resilience played an influencing role in the management of psychological effects of infertility stigma, which explains 45.2% of the variations in these psychological effects, and its domains of self-devaluation and social withdrawal presented as risk factors for these.

**Objective 3: Spirituality and Resilience's Interaction in Coping with Stigma**

The third objective of the study was to explore the interplay between spirituality and resilience in coping with infertility stigma among married women within the selected Evangelical Church Assemblies in Zou County, Benin. Simple linear regression analysis was conducted between spirituality and resilience to assess their mutual dependence. The SPSS outputs are shown in Tables 28 to 30, and 31 to 33.

**Table 28**

*ST / CD-RISC-10 Model Summary*[b]

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate | Durbin-Watson |
|---|---|---|---|---|---|
| 1 | .410[a] | .168 | .166 | 7.02391 | 1.987 |

a Predictors: (Constant), ST
b Dependent Variable: CD-RISC-10

**Table 29**

*ST / CD-RISC-10 / ANOVA*[a]

| Model | | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| 1 | Regression | 3799.923 | 1 | 3799.923 | 77.022 | .000[b] |
| | Residual | 18846.077 | 382 | 49.335 | | |
| | Total | 22646.000 | 383 | | | |

a. Dependent Variable: CD-RISC-10
b. Predictors: (Constant), ST

**Table 30**

*ST / CD-RISC-10 – Coefficients*[a]

| Model | | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. | 95.0% Confidence Interval for B | |
|---|---|---|---|---|---|---|---|---|
| | | B | Std. Error | Beta | | | Lower Bound | Upper Bound |
| 1 | (Constant) | -.595 | 2.924 | | -.203 | .839 | -6.345 | 5.154 |
| | ST | .310 | .035 | .410 | 8.776 | .000 | .241 | .379 |

a. Dependent Variable: CD-RISC-10

Regression assumptions were met as confirmed by the visual examination of the regression standardized residuals plots. The histogram and Normal P-P plot showed normality and the scatter plot showed homoscedasticity. From the outputs, a significant regression was found F(1, 382) = 77.022, $p < 0.000$.

Spirituality (ST) accounted approximately for 16.60% of the variance in resilience (CD-RISC-10) as shown by the adjusted $R^2$ value in Table 28, making the remaining 83.40% to be explained by other factors. The regression equation is:

CD-RISC-10 = -.595 +.310*(ST).

From Table 30, resilience had a significant positive link to spirituality as the p-value was less than 0.05, the selected level of significance. Consequently, an increase in ST will have effect on CD-RISC-10 by .310. The confidence interval indicated that we can be 95% certain that the slope to predict resilience from spirituality is between .241 and .379.

**Table 31**

*CD-RISC-10 / ST Model / Summary*[b]

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate | Durbin-Watson |
|---|---|---|---|---|---|
| 1 | .410[a] | .168 | .166 | 9.28011 | 1.419 |

a. Predictors: (Constant), CD-RISC-10
b. Dependent Variable: ST

**Table 32**

*CD-RISC-10 / ST / ANOVA*[a]

| Model | | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| 1 | Regression | 6633.210 | 1 | 6633.210 | 77.022 | .000[b] |
| | Residual | 32898.030 | 382 | 86.120 | | |
| | Total | 39531.240 | 383 | | | |

a. Dependent Variable: ST
b. Predictors: (Constant), CD-RISC-10

**Table 33**

*CD-RISC-10 / ST Coefficients*[a]

| Model | | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. | 95.0% Confidence Interval for B | |
|---|---|---|---|---|---|---|---|---|
| | | B | Std. Error | Beta | | | Lower Bound | Upper Bound |
| 1 | (Constant) | 68.688 | 1.605 | | 42.785 | .000 | 65.532 | 71.845 |
| | CD-RISC-10 | .541 | .062 | .410 | 8.776 | .000 | .420 | .662 |

a. Dependent Variable: ST

Regression assumptions were met as confirmed by the visual examination of the regression standardized residuals plots. The histogram and Normal P-P plot showed normality and the scatter plot showed homoscedasticity. From the outputs, a significant regression was found F(1, 382) = 77. 022, $p < 0.000$.

Resilience (CD-RISC-10) accounted approximately for 16.60% of the variance in spirituality (ST) as shown by the adjusted $R^2$ value in table 31, making the remaining 83.40% to be explained by other factors. The regression equation is:

$$ST = 68.688 + .541*(CD\text{-}RISC\text{-}10).$$

From Table 33, spirituality had a significant positive link to spirituality as the p-value was less than 0.05, the selected level of significance. Consequently, an increase in CD-RISC-10 will have effect on ST by .541. From the confidence interval, we can be 95% certain that the slope to predict depression, anxiety and stress from infertility stigma is between .420 and .662.

Spirituality and resilience mutually explained 16.60% of the variance in the other, and predicted each other. Consequently, each of them will manifest an indirect effect on the other in coping with infertility stigma and consequences. This echoes the findings from the qualitative data, where spirituality and prayer were present in every aspect of the women's life. In previous research, for example, Tusasiirwe et al. (2023) found spirituality as a means for finding meaning in adverse circumstances. Spirituality was equally a resource for coping with these circumstances.

The mutual effect of both variables was also found in the qualitative data, where almost all women stated that their spiritual practices reinforced their resilience (95.83%) and their resilience helped their spiritual growth (96.09%). As spirituality boosted their resilience, women felt less depressed and anxious (92.45%). Their resilience helped them to rely more on God and reduce their self-blame (91.93%). They improved emotionally as they grew in resilience and hope (91.93%). The faith-based activities that helped their resilience were prayer (65.89%) along with the scriptures and church activities, and faith (34.11%).

As outcome, women gained more strength and courage (39.84%), inner peace (33.07%), and more resistance (19.79%). Senior women gave the example of Hannah in the Bible (*New International Version Bible*, I Samuel 1). She moved from resilience in the face of Peninnah to high expression of spirituality (Hannah was praying in her heart… – verse 13) in the face of Eli. She got his blessings as the man of God, with the outcome of the desired child, Samuel. From their own experience, they added that spiritual maturity was a promoting factor of resilience, paraphrasing Psalm 34, 5 (*New International Version Bible*, 2001): he who turns his gaze toward Him [The Lord] is radiant with joy, and his face does not become covered with shame.

These findings are supported by the link between spirituality and resilience found in literature. Araya et al. (2025) saw it as both influencing the coping of women in the face of infertility. In addition, Safara et al. (2024) understood resilience as a way for spiritual health to reduce the stress of the woman with infertility. As one can observe in the interplay of both variables in this study, spirituality dominates resilience. This concurs with the comment of Mwemezi (2024) that spirituality as the fundamental of life for Africans, provides the structures for all guiding principles of

life in the community. He situated religion as engrained in the daily functioning, and Tusasiirwe et al. (2023) are of the opinion that religious practices such as prayer and communal worship provide people with a sense of belonging that sustains hope in the face of adverse circumstances.

In sum, on objective 3, it was found that spirituality and resilience mutually affected each other, and ultimately, the women gained more strength and courage, inner peace, and more resistance.

**Objective 4: Support Structures for Managing Infertility Stigma**

Objective 4 was to identify support structures for married women managing infertility stigma within the selected Evangelical Church Assemblies in Zou County, Benin. The self of the woman in the face of these existing support structures was examined afterward.

***Existing Support Structures***

The data on existing support structures was collected from survey participants on the individual as well as community aspects with a 3-point Likert scale of disagree, neutral, and agree. Responses were further categorized into low, moderate and high level of perception for analysis. Findings are presented in Tables 34 to 40. Table 34 presents the responses from the surveyed women.

**Table 34**

*Support from Individual Interactions*

| Item | Agree | | Neutral | | Disagree | |
|---|---|---|---|---|---|---|
| | N | % | N | % | N | % |
| The Church leadership are supportive to me. They pray for me and care for me; they show particular interest. | 277 | 72.14 | 37 | 9.64 | 70 | 18.22 |
| I'm in connexion with other women like me and we support each other by praying together. | 71 | 18.49 | 38 | 9.90 | 275 | 71.61 |
| Counselling initiatives from people of the Church community strengthen me and increase my resilience. | 298 | 77.60 | 25 | 6.51 | 61 | 15.89 |

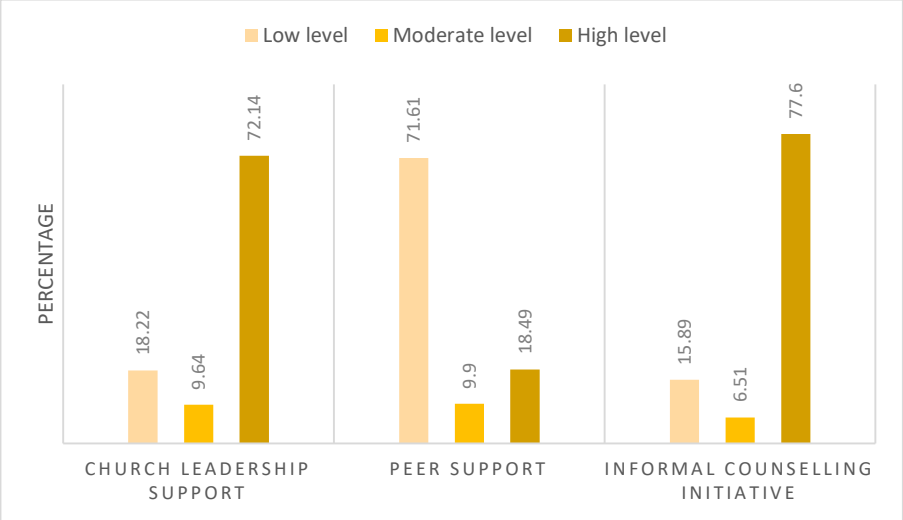
*Note*. Values obtained from the Likert scale answers scoring.

It stems from Table 34 that support from individual interaction came mainly from the pastor (72.14% respondents). For counselling initiative from individuals in the church, 77.60% reported positive perception. However, what they stressed on was more the gain in encouragement and contribution to resilience than the occurrence, since they complained about scarcity. To the question "in which other ways do you get individual support?" 60.61% of women answered "none", and interestingly, 1.82% said that they got the support of women with former fertility issues. This suggests that the lack of support from individuals may be due to their ignorance of the harshness of the infertility condition.

Analysis was furthered to perception of individual support, on three factors: the church leadership support, the support from peers, and informal counselling initiatives (Table 35). Figure 9 visualizes the results.

**Figure 9**

*Level of Individual Support Perception*




*Note*. Visualization of the perceived level of individual support. Source: Researcher, 2026.

As shown in Table 35 in addition to Figure 9, the highest perception of support was on informal counselling initiative, followed by the church leadership.

**Table 35**

*Level of Individual Support Perception*

| Individual support perception | Church leadership support | | Peer support | | Informal counselling initiative | |
|---|---|---|---|---|---|---|
| | Frequency | % | Frequency | % | Frequency | % |
| Low level | 70 | 18.22 | 275 | 71.61 | 61 | 15.89 |
| Moderate level | 37 | 9.64 | 38 | 9.90 | 25 | 6.51 |
| High level | 277 | 72.14 | 71 | 18.49 | 298 | 77.60 |
| Total | 384 | 100 | 384 | 100 | 384 | 100 |

*Note*. Values in Table 34 converted into perception level of the individual support.

The literature reviewed supports the finding on church leadership. Hyde and Joseph (2023) found faith leaders play a significant assisting role on spiritual issues and in addition, influencing people concerning their health issues during the COVID-19 Pandemic. Even if one thinks that the leadership were in their role in the present

study, in the perspective of the Satir Model, the findings suggest that the women in the study had yearnings for recognition in their suffering. They probably felt understood and accepted by individual church members engaging in conversation with them on their condition as in the study by Xian et al. (2022). More insight is got in other literature reviewed: Social support is essential to human experience (Drageset, 2021), and Ojedokun (2021) established that spiritual support influences the coping ability of couples living with infertility. This explains why the women in the survey value support from individuals in the church.

Next in the existing support structures is the church-based support. Answers from the survey are displayed in Table 36.

**Table 36**

*Church-Based Support*

| Item | Agree | | Neutral | | Disagree | |
|---|---|---|---|---|---|---|
| | N | % | N | % | N | % |
| In my church community, pastoral care exists for women like me. The pastor meets with us to pray for my husband and I and encourage us with Scriptures and listen to us from time to time | 274 | 71.35 | 38 | 9.90 | 72 | 18.75 |
| In my church community, prayer groups are bound to pray for us often | 281 | 73.18 | 39 | 10.15 | 64 | 16.67 |
| We benefit from faith-based counselling programs set by the church leadership | 73 | 19.01 | 43 | 11.20 | 268 | 69.79 |

*Note*. Values obtained from the Likert scale answers scoring.

From Table 36, church-based support system was comprised of pastoral care and the performance of the prayer group keeping the women in their prayer list. There was no counselling program. The findings from interviews and focus groups indicated that because of the collective awareness of infertility-related resentment, social support was relative and limited, and it was not in the culture of the church.

Concretely, women with infertility in the church were supported mainly by the Pastor and his wife in informal counselling, prayer, and encouragement from the scriptures, as explained by 71.35% of surveyed women.

Perception analysis was done next on three factors: pastoral care, prayer group support, and faith-based counselling programs. Table 37 shows the results.

**Table 37**

*Level of Perception of Church-Based Support*

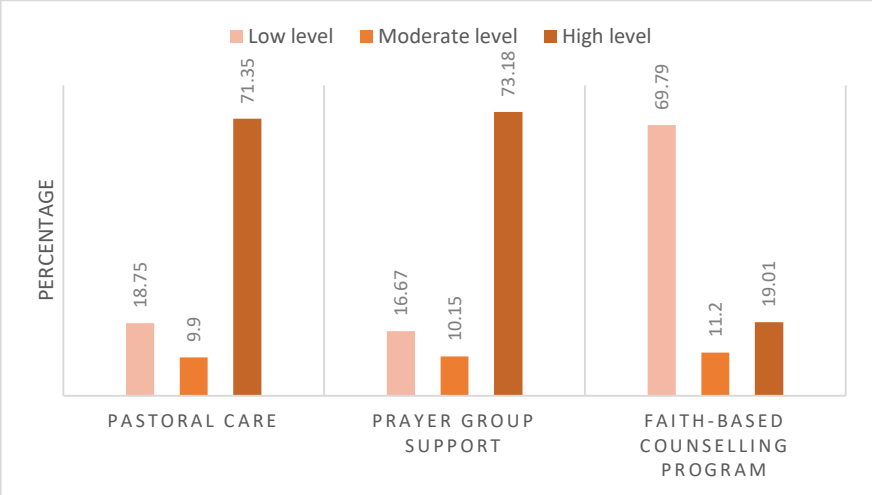
| Church-based support perception | Pastoral care | | Prayer group support | | Faith-based counselling program | |
|---|---|---|---|---|---|---|
| | Frequency | % | Frequency | % | Frequency | % |
| Low level | 72 | 18.75 | 64 | 16.67 | 268 | 69.79 |
| Moderate level | 38 | 9.90 | 39 | 10.15 | 43 | 11.20 |
| High level | 274 | 71.35 | 281 | 73.18 | 73 | 19.01 |
| Total | 384 | 100 | 384 | 100 | 384 | 100 |

*Note*. Values in Table 36 converted into perception level of the Church-based support.

From Table 37, the highest perception was for prayer group before pastoral care. This suggests that the women in the survey were highly sensitive to prayer. Figure 10 visualises these results.

**Figure 10**

*Level of Perception of Church-Based Support*




*Note*. Visualization of the perceived level of Church-based support. Source: Researcher, 2026.

Figure 10 highlights the trends in the perception. The sensitivity to prayer and pastoral care followed by the scarcity of counselling program are the major features on the Figure.

From Satir's personal iceberg (Xian, 2022), women in the study were facing an existential crisis that they were experiencing in their intrapsychic being. It was as if their natural capacity for evolution was questioned. Thus, they needed to connect to the life force through prayer. More insight to this is got from Formoso-Suárez et al. (2022) explaining that church-based social support permits people who participate in religious activities to gain access to social networks including support from the clergy as well as members of the religious organization. Thus, the women's need to connect to the transcendent seems to be directly addressed by the prayer group to which they have a perception of belonging through prayer, and by the Pastor through pastoral care.

Community involvement was the third investigated aspect of support structures. Table 38 shows the responses of the women in survey.

**Table 38**

*Community Involvement*

| Item | Agree | | Neutral | | Disagree | |
|---|---|---|---|---|---|---|
| | N | % | N | % | N | % |
| Twice a year, the Church develop a program for women with infertility. | 175 | 45.57 | 20 | 5.21 | 189 | 49.22 |
| In a year, at least 5 people from the Church community invite me for an encouragement meeting | 140 | 36.46 | 19 | 4.95 | 225 | 58.59 |

*Note*. Values obtained from the Likert scale answers scoring.

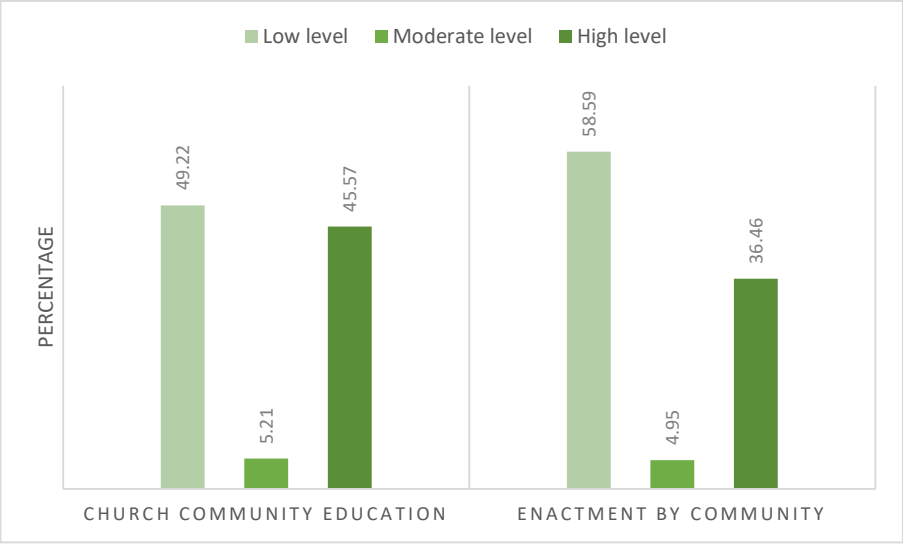
From Table 38, 45.57% of the women positively perceived the involvement of their church community in the management of their infertility issues. However, from interviews and focus groups, until recently, the church community involvement in the

support of women with infertility was very little. But some churches have started raising awareness of their members on the issue of infertility and encouraging them to be compassionate with the target women in the church. In general, churches lack specific church-based support systems for the woman with infertility. At most, the church's prayer group kept childless women and couples on their prayer list, said 73.18% of surveyed women (Table 36 above). However, in rare communities, senior women met juniors for prayer on specific problems, but not just infertility, according to some leaders. From 36.46% of women, the occasional counselling initiatives from other church members were often a source of strength that increased the resilience of women with infertility. Overall, there is a clear lack of church community involvement in the support of women with infertility.

Perception analysis was done next, on two aspects: Church community education and enactment by community (Table 39). Figure 11 visualizes the results.

**Figure 11**

*Level of Perception of Community Involvement*




*Note*. Visualization of the perceived level of community involvement. Source: Researcher, 2026.

As shown in Table 39 in addition to Figure 11, nearly half of the women (49.22%) had low perception of community education on infertility and more than half (58.59%) did not really perceive actions from community.

**Table 39**

*Level of Perception of Community Involvement*

| Community involvement perception | Church community education | | Enactment by community | |
|---|---|---|---|---|
| | Frequency | Percentage | Frequency | Percentage |
| Low level | 189 | 49.22 | 225 | 58.59 |
| Moderate level | 20 | 5.21 | 19 | 4.95 |
| High level | 175 | 45.57 | 140 | 36.46 |
| Total | 384 | 100 | 384 | 100 |

*Note*. Values in table 38 converted into perception level of community involvement.

From the Satir Model perspective (Xian, 2022), these findings in Table 39 suggests that the surveyed women were yearning to belong to the church community; what they missed. To elaborate on community involvement, with input from objectives 1 to 4 outputs, and literature reviewed, women in this study missed emotional support, being recognized as members of a social community, being respected and valued, getting practical help, and getting information and guidance (Drageset, 2021). As they engaged in personal prayer and sought spiritual guidance, with proper community support they would have gotten less distress and anxiety (Ndinelao-Kalomo et al., 2022). The habit of praying was a valuable resource for their mental health (Taylor et al., 2021), since frequent prayer can help develop a sense of hope, optimism, and peace, and promote survival (Ironson & Ahmad, 2023). With an involved church community, granting mutual trust, and emotional investment (Taylor et al., 2021), the women in the present study would have felt supported.

The surveyed women's view of the effectiveness of support structures is shown in Table 40 hereafter.

**Table 40**

*Effectiveness of Support Structures*

| Item | Agree | | Neutral | | Disagree | |
|---|---|---|---|---|---|---|
| | N | % | N | % | N | % |
| I like the functioning of the support structures in my community | 243 | 63.28 | 43 | 11.20 | 98 | 25.52 |
| I often respond to all of the support structures in my Church community | 212 | 55.21 | 42 | 10.94 | 130 | 33.85 |
| With all that is offered, I feel supported in my Church community | 245 | 63.80 | 49 | 12.76 | 90 | 23.44 |

*Note*. Surveyed women's appreciation of support structures.

From Table 40, most of the women found existing support effective. However, they reported impairments in the support. The women stated that pastors did not realize the depth of their problem and failed to have a satisfactory management of it. Some of them showed little wisdom and violated confidentiality rules after counselling sessions, in reporting the case to the Church Board. Some others would use the specific case of the woman as central focus of preaching. Some again would comment from the front that God was answering prayers in this church and the one who fails to get satisfaction must review her own life and examine herself before the Lord. Such kind of sayings or behaviours are stigmatizing and weaken the support given to the woman.

In consequence of impairments in the support, the only source of support for the woman appears a source of more stigmatization and a potential threat to her spiritual growth. It may also affect her resilience. Managing infertility stigma would then be support-free for the woman in the church since they report being afraid to confide in the pastor. More and the most, the psychological effects of infertility may be exacerbated as an outcome of such situation. The impairments in the findings align

with Litalien et al.'s (2022) review highlighting the potential of spirituality and religion to hinder individuals' coping mechanisms.

Next, as shown in Table 41, the perception analysis of the support structures' effectiveness focuses on functioning, frequent use, and satisfaction.

**Table 41**

*Level of Perception of Support Structures' Effectiveness*

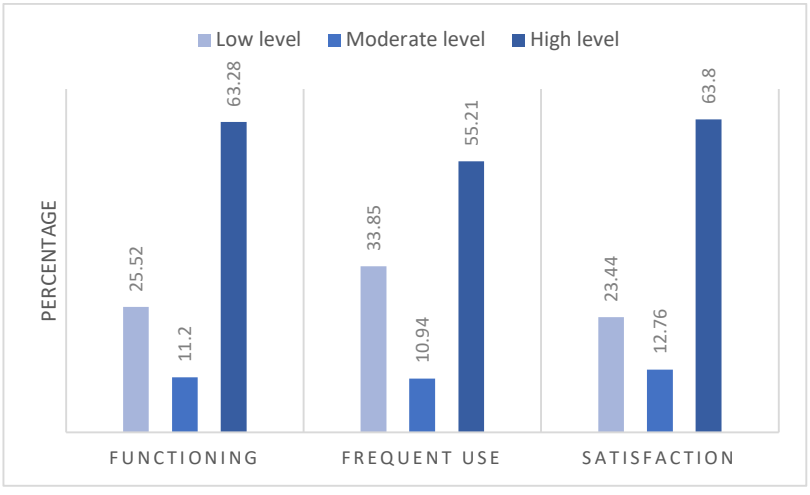
| Perception of Support Structure Effectiveness | Support structure functioning | | Support structure frequent use | | Satisfaction with support structure | |
|---|---|---|---|---|---|---|
| | Frequency | % | Frequency | % | Frequency | % |
| Low level | 98 | 25.52 | 130 | 33.85 | 90 | 23.44 |
| Moderate level | 43 | 11.20 | 42 | 10.94 | 49 | 12.76 |
| High level | 243 | 63.28 | 212 | 55.21 | 245 | 63.80 |
| Total | 384 | 100 | 384 | 100 | 384 | 100 |

*Note*. Values in Table 40 converted into perception level of support structures' effectiveness.

From Table 41, the functioning of support structures was appreciated by 63.28%, frequently used by 55.21% and 63.80% were satisfied. The lowest level of perception was on satisfaction with 23.44%. Figure 12 shows the perception levels.

**Figure 12**

*Level of Perception of Support Structures Effectiveness*




*Note*. Perception level of support structures' effectiveness.
Source: Researcher, 2026.

Figure 12 highlights the trends, showing satisfaction and functioning before frequency of use. However, the qualitative data in comparison to the findings in Table 41 visualised in Figure 12 suggest that support structures might need revisiting to meet the actual expectations and needs of the women. Despite the relatively high number of women expressing their satisfaction with the existing support structures, they enumerated several aspects that were still missing in the support system in their churches. A woman (SPS5) expressed their frustration over the constraints of the support:

> "I wish there were a group made up only of women to guide us because we, women, cannot bring all our problems to the pastor because he is a man".

Another woman (SPS24) like several others, expressed the limits they felt to being in the list of intercession group:

> "I want them to choose special days to pray with us women about the situation of infertility"

Another woman (SPS56) highlighted the limitations in access to knowledge of the basics and also the width of the women's expectations from the church, beyond the spiritual support:

> "I want them to bring in, groups of practitioners or modern health professionals to advise us on how to get pregnant".

Table 42 presents a summary of the women's expressed needs as: Counselling, praying, mentoring, coaching, home visiting, specific church programs, and specific support group in the church.

**Table 42**

*Expressed Needs for Enhancing the Support System in the Church*

| Expressed needs of the women in the survey | Frequency | Percentage |
|---|---|---|
| | N | % |
| Informal individual counselling from senior Church member | 112 | 29.17 |
| Individual accompaniment with prayer on personal issues | 62 | 16.15 |
| To have experienced women as mentors to listen to them as they are limited in what they can disclose to a male leader | 13 | 3.38 |
| A specific support group in the Church | 93 | 24.22 |
| Specific programs to nurture the spirituality and hope of women with infertility | 69 | 17.97 |
| Home visits, necessary for women with infertility to feel part of the community | 13 | 3.38 |
| Support and knowledgeable advice on treatment aspects | 22 | 5.73 |
| Total | 384 | 100 |

*Note*. The needs expressed by women to enhance the church-based support system.

The expressed needs depicted emotional and social support needs of the women in the study. These findings echo previous research findings. Yan et al. (2024a) found the importance of social support for the mental health of the woman with infertility. The missing pieces of the support system expressed by the women reveal the needs that might have affected their self-esteem, their resilience, their spiritual growth and their coping strategies, and contributed to the psychological effects of infertility stigma as measured in objectives 1 to 3. This echoes Sharma et al. (2024) discussing the critical roles of social support along with resilience and personal agency in the course of coping with infertility. The findings were further analysed in this perspective with regard to the self of the women, spirituality, and resilience.

***The Self of the Women and the Support System***

This review of the existing support structures for managing infertility stigma and the perception of the women highlights the low level and the lack of variety of

the support. From An et al. (2024), family support increases social wellbeing, and Bedaso et al. (2021) informed that low social support holds risk of depression, anxiety, and self-harm for the women. Previous results in the current study have highlighted the hinderance of the concept of support by the perception of infertility. Consequently, the Self of the woman in this study is assessed next to further evaluate the impact of the state of support on the women's management of infertility and related stigma. The Self of the women was measured with the Rosenberg Self-Esteem Scale (RSES). Table 43 reports the descriptive statistics of the scale.

**Table 43**

*RSES Measures of Central Tendency and Dispersion*

| Scale | Mean | Std. Dev. | Min | Max | Range |
|---|---|---|---|---|---|
| RSES | 15.0078 | .93241 | 11.00 | 18.00 | 7.00 |

*Note*. The descriptive statistics of the scale.

From Table 43, the data seems to be grouped around the mean. Table 44 discriminates and provides better insight into the data. The Cronbach's α was 0.94, pointing to a very good reliability of the scale. The score values are displayed by normative analysis range in Table 44 hereafter.

**Table 44**

*Scores of the RSES*

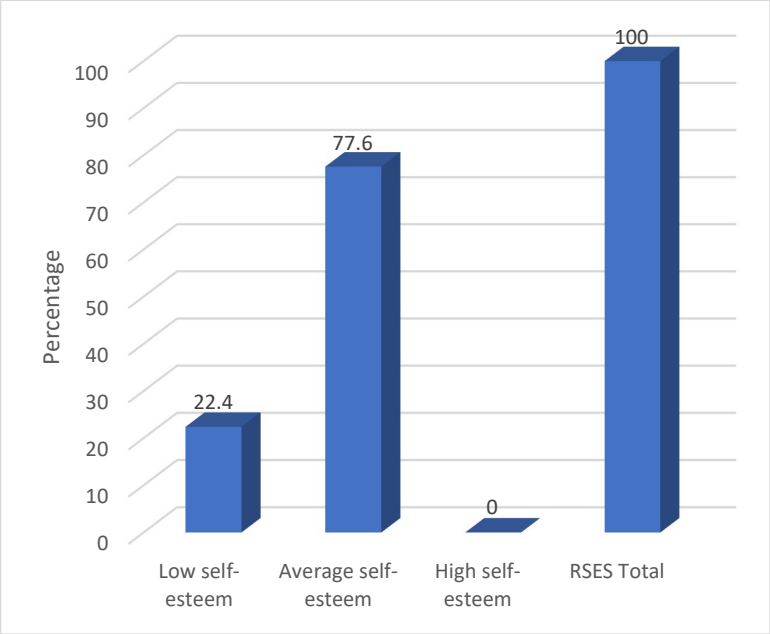
| Range | Scores | |
|---|---|---|
| | Frequence | Percentage |
| 0-14 | 86 | 22.40 |
| 15-25 | 298 | 77.60 |
| 26-30 | 00 | 00.00 |
| Total | 384 | 100.00 |

*Note*. RSES scores discriminated per normative analysis value ranges.

From Table 44, 22.40% of respondents fell in the range 0 to 14, presenting a low level of self-esteem, while 77.60% were in the range 15 to 25, showing a normal level of self-esteem. The scale is further visualized in Figure 13.

**Figure 13**

*The RSES Scores – Levels of Self-Esteem*




*Note*. Levels of self-esteem.
Source: Researcher, 2026.

From Figure 8 and Table 44, most of the surveyed women scored in the 15-25 range. The great number of them presenting an average level of self-esteem may be due to the research setting which was the Evangelical Church, where believing in Jesus makes the woman feel important as a human being, despite the hostility of the cultural environment against her condition. As put by Rosenberg, opposite to others, high self-esteemed people see themselves worthy despite any inconvenient situations, and are self-respecting (Rosenberg, 1979). However, the highest score was 18, and more than half of respondents (57.81%) scored 15, which is not far from the threshold of 14. Even though they were at a normal level of self-esteem, they fell in

the lower part of the range. It is likely that infertility and related stigma did affect the self-esteem of women, even in the Evangelical Church. The slight level difference owes to uncovered factors that probably blurred the perception.

From the Satir Model's perspective (Satir et al., 1991), the woman with infertility's self-esteem is her opinion of a personal value obtained from internal judgment of incompetence to fulfil a metaphysical duty, and social interactions made of social stigma. Therefore, a sound support system would play a pivotal role in her healing process. However, the support system reviewed in the previous section appeared not strong enough to lift up the woman's self-esteem. The expressed expectations and needs of the women in Table 42 shed light on the extent. Having high self-esteem would mitigate negative beliefs about self and situations, but the women in this study being essentially at a low level of self-esteem, needed validation through a sound support system.

***Social Support, Spirituality, Resilience, and Self-Esteem***

It was established from the study of Ojedokun (2021) that spiritual support influences the coping ability of couples living with infertility. The low quality of pastoral care – insufficient, not always effective, and stigmatizing – is unfortunate, as they miss opportunities for spiritual care that could have helped in resilience. Indeed, from Dutra and Rocha (2021), when religious care is individualized, it becomes spiritual care, where the woman is accompanied and emotionally supported in order to reconnect her with her spiritual beliefs and values. The high values found previously on religious crisis in Objective one explains perfectly the low self-esteem found in women in this section. Gabova (2021) helps to explain it in two ways.

First, unhelpful religious coping may promote spiritual unworthiness, which declines the self-perception and the self-esteem. Second, the low self-esteem of

women can lead them to a religious crisis. However, the findings on spirituality – the massive presence of prayer in the dataset – in Objective one does not logically match the low levels of self-esteem, as mediation should promote harmony. A Pearson correlation analysis was performed to evaluate the relationships between Prayer Fulfilment and Rosenberg Self-Esteem Scale. Results are presented in Table 45 hereafter.

**Table 45**

*Correlation Between Self-Esteem and Prayer*

| | | RSES | PF |
|---|---|---|---|
| RSES | Pearson Correlation | 1 | -.066 |
| | Sig. (2-tailed) | | .197 |
| | N | 384 | 384 |
| PF | Pearson Correlation | -.066 | 1 |
| | Sig. (2-tailed) | .197 | |
| | N | 384 | 384 |

*Note*. Correlation between self-esteem and prayer fulfilment.

From Table 45, there was a negative correlation between the two variables, which was not statistically significant, r(384) = - .066, $p$ = .197

As suggested by Gabova (2021), the prayer of the women in this study expressed their dissatisfaction for not getting the needed answer and probably disappointment about their expectations from the whole belief system and the fellow congregants. In sum, about Objective 4, the low level of self-esteem of the women highlighted their need for validation through a sound support system. However, informal counselling from the pastor and intercession by the prayer group were the best actions taken in favour of target women in some churches. This was not strong enough as support structure to lift up the women's self-esteem.

**Objective 5: Faith-Integrated Interventions for Married Women Infertility Stigma**

The fifth objective was to find out faith-integrated interventions for married women facing infertility stigma in the selected Evangelical Church Assemblies in Zou County, Benin. From all study participants, there was lack of systematized intervention for infertility in the church. Thus, the discussions evolved around the perspectives; these were collected from survey participants with a 3-point Likert scale of disagree, neutral, and agree.

***Perspectives of Intervention in the Church***

The perspectives of intervention expressed by women are displayed in Table 46.

**Table 46**

*Perspectives of Intervention in the Church*

| Item | Agree | | Neutral | | Disagree | |
|---|---|---|---|---|---|---|
| | N | % | N | % | N | % |
| I would like to benefit from faith-based counselling | 363 | 94.53 | 8 | 2.08 | 13 | 3.39 |
| I think that resilience training programs will greatly help me | 353 | 91.93 | 10 | 2.60 | 21 | 5.47 |
| Stigma-awareness workshops will help to educate people on the harm of stigmatizing and reduce our burden | 349 | 90.89 | 10 | 2.60 | 25 | 6.51 |
| Addressing misconceptions about infertility will help to reduce stigmatization | 356 | 92.71 | 11 | 2.86 | 17 | 4.43 |
| Promoting empathy in church communities will increase support | 363 | 94.53 | 9 | 2.34 | 12 | 3.13 |

*Note*. Domains of need for intervention expressed by the surveyed women.

Church leaders admitted that there was lack of faith-based formal interventions. This confirmed the survey results where the women named some types of strategies they long for. They would like to benefit from faith-based counselling (94.53%), they believed that resilience training programs would greatly help them

(91.93%), they also thought that activities such as stigma-awareness workshops will help to educate people on the harm of stigmatizing and reduce the load on women with infertility (90.89). More, they indicated several ways to help them manage their condition. These findings concur with previous research. The women in Lasek's (2023) study got satisfaction and better coping from faith-based counselling.

Referring to Table 46, the women living with infertility would like to be listened to by knowledgeable people (29.17%), and 3.38% would prefer female supervisors/advisors. Others claimed effective support groups (24.22%), and 5.73% would like guidance and advice. Women remarked that being on the prayer list of the church was not enough as their needs were very specific (17.97%). Some others claimed prayer from the church (16.15%) – these women were probably from places where absolutely nothing was done for them. Women at 3.38% would appreciate being visited at the place of their living. These aspects of emotional and social support were addressed in previous studies. Social support was found to positively impact on resilience and enhance quality of life (Ni et al., 2022). Resilience training programs would work to develop mindfulness-based skills, learning coping mechanisms to help women navigate the emotional turmoil of infertility and related stigma.

***Church Community Education on Infertility***

The church community, being a major source of stigma (see the comment of a woman in the section above on Spiritual Transcendence), the surveyed women stressed on community education. They believed at 92.71% that addressing misconceptions about infertility would help to reduce stigmatization. More, 94.53% suggested that promoting empathy in church communities would help support them. Further, naming some domains of community education, 45.83% thought the

community must be trained to intercede for them, and 38.28% argued that it would be an act of brotherly love. Women warned at 2.08% about the perception of the youth – that fertility should be tested before engaging in marriage – and suggested that specific training be planned for them.

In addition, 9.90% stated that the pastor should be trained to be more knowledgeable on infertility for better management of cases in the church. Women suggested at 3.91% that public awareness-raising could be organised by the church. Church leaders in interviews and focus groups corroborated the view of women on the necessity to educate the community and train them to manifest the love of God, to be compassionate. Concordantly to these findings, the importance of training on infertility in church community was found in previous studies, for example, in Chukwuka (2025). To banish stigmatization from the church, community education appears crucial.

***Relevance of a Church Policy on Infertility Management***

It emerged from church leaders' focus groups and interviews that in almost all the churches, there was no policy intentionally elaborated to care for members facing the issue of infertility. They suggested that such policies would encourage women, support them, guide them, and help them in several ways. A male participant (FCGCL1) specified:

> "Prayer and the teaching of the word of God would lift them above the fear of witchcraft and occult forces that are believed to cause infertility".

Another male study participant (FCGCL9) added:

> "Stigmatization occurs due to lack of education and may hinder church strategies. Therefore, community education should be part of the policies.

More so, church leaders also should seek training on the topic to be fully helpful to women and couples".

In addition, the group commented on and specified that health care professionals should be associated because infertility and related stigma challenge the women's physical as well as mental health.

***Suggested Intervention strategies.***

Women's recommendations for a church policy were many. They suggested training on various topics for all in the church. In addition to all listed previously, they would want the church to take concrete action for practical aid to them. Thus, 10.42% mentioned lobbying for government-funded healthcare, and 7.28% suggested seeking knowledgeable people to promote and help them with herbal treatments assumably less costly than biomedical, while 4.95% proposed a relief and support fund to help at the first stages of medical diagnosis. The idea of integrating access to mental health services within church policies appeal to all of them.

Indeed, it would enhance support and decrease psychological impairments due to infertility stigma. Church leaders identified three major actions to take: teaching/training, praying, and support. The teaching would concern women, men, couples, the youth, and the entire community with relevant topics. Of importance is the capacity-building of leaders on the topic of infertility and the related stigma. In sum, intervention in the church was meant for women and their church leaders to build a strong support system, and to access professional as well as pastoral guidance.

These findings resonate with previous studies. Istratii and Ali (2023) highlighted the importance of faith-based interventions theologically rooted and trauma-informed for victims of adverse situations such as intimate partner violence. Infertility fitted a similar perspective with Lasek (2023). The point on leader

capacity-building echoes the research work of Mehlig (2021) on the usefulness and the need for specific pastoral care training. About mental health, Nanji and Olivier (2024) reported a practice of faith-based organizations providing mental health care in Africa. The women's call for a lobbying action to improve access to fertility care echoes the WHO (2024a) recommendation on ART, for reduction of the treatment cost in order to facilitate wide access. Overall, the WHO (2024a) recommended policies to seek equity and help ensure that all have access to safe and effective fertility care.

To sum up on Objective 5, the women in the church faced stigma twice over, but received little support, while in their perception, the church was supposed to be the place of all consolation. They claimed tangible actions as major intervention lines.

**Chapter Summary**

This chapter has presented the data and its analysis in an attempt to address the research objectives. The influence of spirituality and resilience on managing infertility stigma has been established from the quantitative data by the means of linear regression analysis of the scales measuring the variables of the study. The qualitative data provided direct view from the field and enriched the findings. These findings will serve to make conclusions of the study in the next chapter.

# CHAPTER FIVE: SUMMARY OF FINDINGS, RECOMMENDATIONS, AREAS FOR FURTHER RESEARCH AND CONCLUSION

## Introduction

This chapter first presents the summary of the overall findings of the research as discussed in Chapter 4, with the guidance of the five research objectives. Next, it draws conclusions and make recommendations based on the findings. Then, implications of these findings are given within the theoretical frame of the research developed in chapter two. Finally, areas meriting further research are highlighted.

## Summary of Findings

The major focus of this study was to establish the influence of spirituality and resilience on the management of infertility stigma as it is experienced by married women in selected mainstream Evangelical Church Assemblies in the County of Zou in Benin. The summary of findings is presented by the research objectives. The first objective sought to examine the relationship between spirituality and coping with infertility stigma. The second, was to assess the role of resilience in managing the psychological effects of infertility stigma. The third, was to explore the interplay between spirituality and resilience in coping with infertility stigma. The fourth, sought to identify support structures for managing infertility stigma. And the fifth was to find out faith-integrated interventions for married women infertility stigma. The research instruments comprised; ASPIRES for measuring spirituality, CD-RISC-10 for resilience, ISS-SF for infertility stigma, COMPI CSS for the coping strategies, DASS21 for psychological effects of infertility stigma, RSES for self-esteem, and a researcher-designed questionnaire for the qualitative data.

Survey participants were aged between 18 and 34 at 67.71%; 29.69% were between 35 and 50, and 2.60% from 51 to 60 years. A majority of 96.61% married

women were between ages 18 and 34 and the rest 3.39% between 35 and 45 years. The marriage had lasted 2 to 5 years for 51.82% of the women; 6 to 10 years for 21.36%; 11 to 20 years for 19.53%; 21 to 30 years for 6.25%; and 31 to 45 years for 1.04%. The highest level of formal education was primary for 14.06%; secondary for 9.90%; and tertiary for 1.04%; while 26.04% were uneducated; and 48.96% had a non-formal small-scale professional training. The surveyed women were civil servants at 3.91%; self-employed at 82.55%, and housewives at 13.54%. Self-employed women work very close to home in activities such as small-scale trading at 36.72%. All women had had infertility treatment attempt.

On Spiritual Transcendence, the ASPIRES subscale used in this study presented a Cronbach's α of 0.90, and a normative group score mean of 81.53 for 18-25 years, 82.46 for 26-45, and 81.93 for 46-60 years. This translated to the women in the study keeping at balance their need for growth in the knowledge of God, and solving their infertility problem. From the qualitative data, prayer was found a major characteristic of survey participants.

The CD-RISC-10 had a Cronbach's α of 0.91; the least resilient surveyed women scored from 0 to 20 and the most resilient scored 30 to 40. Factors promoting resilience in this study were found as physical health (27.08%), mental health (21.88%), financial autonomy (8.54%), social support (9.64%), and various mixture of the four factors. In addition, there was support of the husband (61.72), success stories (66.41%) and testimonies from known women (33.59%).

The ISS-SF had a Cronbach's α of 0.90, and for the subscales, 0.88 for Self-Devaluation, 0.74 for Social Withdrawal, 0.65 for Public Stigma, and 0.88 for Family Stigma. Mean score values were respectively, 39.49, 12.14, 10.83, 8.03, and 8.50. From the findings in the qualitative data, social withdrawal appeared like a self-

protection strategy in the face of the harshness brought by stigma. Stigma was found as mockery, name calling, insults, contempt, humiliation and shame inflicted, judgment, slander, abuse by the in-laws, stress from the community, domestic and intimate partner violence, rejection of society, distancing from children, and more. Due to the perception of infertility as a curse and other factors, the church was found to be a place of high infertility stigmatization.

The COMPI CSS had a Cronbach's α of 0.78, and for the subscales, it was 0.85 for Active-Avoidance, 0.84 for Active-Confronting, 0.93 for Passive-Avoidance, and 0.82 for Meaning-Based Coping. Active-confronting and meaning-based strategies were the most practiced. It was found that spirituality, and specifically prayer was part of all coping strategies and the choice of these depended on the stage in the experience of infertility.

DASS21 had a Cronbach's α of 0.98, and for the subscales, 0.94 for Depression, 0.93 for Anxiety, and 0.95 for Stress. Women presented a normal level of depression at 42.97%, of anxiety at 42.45%, and of stress at 57.79%. The level was extremely severe for stress at 10.21%, for depression at 19.79%, and for anxiety at 26.30%. Infertility unbalances the women who saw themselves diminished and this affected their behaviour in the church, they avoided gatherings involving children, they were excessively wary, developed difficult social relationships, harboured negative thoughts and sometimes contemplated suicide. They had endless tears, sadness, rumination, and mood change.

RSES had a Cronbach's α of 0.94, and the study participants presented with a low level of self-esteem at 22.40% and a normal level at 77.60%, likely distorted by unmeasured factors. For the woman with infertility's self-esteem from the Satir Model's perspective, the growth process was found in the three-stage coping strategy

mentioned above, where the woman in the early years of infertility manifests the wound of the self by isolating and convulsively praying. As the years go, she would show flexibility in relationships, and at the third stage, she would act with more maturity.

In the development of the first objective, it was found that spirituality had a significant positive influence on coping strategies ($R^2$ = .203, F(1, 382) = 98.531, $p$ < 0.000). Likewise, each coping strategy at the 0.01 level of significance, was positively influenced by the spiritual state of the survey participant, except the active-avoidant woman who testifies by the choice of coping strategy, of her decreasing spiritual vitality. Spiritual Transcendence was negatively correlated to active-avoidance (r(382) = -.14, $p$ = .006). It was positively correlated to active-confronting (r(382) = .50, $p$ = .000), passive-avoidance (r(382) = .40, $p$ = .000), and meaning-based (r(382) = .20, $p$ = .000). The spirituality of the women in the study was found as prayer-centred and invading her management of her infertility condition.

The findings on objective 2 showed that resilience played an influencing role in the management of psychological effects of infertility. There was a significant multiple linear regression where resilience (adjusted $R^2$ = .458; B = -.208, β = -.089, t = -2.358, $p$ = 0.019) and infertility stigma (adjusted $R^2$ = .459; B = 1.048, β = .668, t = 17.699, $p$ = 0.000) had significant effects on psychological effects of infertility stigma. Prior to this, a significant linear regression was found between infertility stigma and its psychological effects, adjusted $R^2$ = .452, F(1, 380) = 314.702, $p$ < 0.000. In addition, the infertility stigma domains of self-devaluation and social withdrawal presented as risk factors for these psychological effects.

For objective 3, a significant regression was found between resilience and spirituality, $R^2$ = .166, F(1, 382) = 77.022, $p$ < 0.000. Likewise, a significant

regression was found between spirituality and resilience, $R^2 = .166$, F(1, 382) = 77. 022, $p < 0.000$. Spirituality and resilience mutually effect on each other, explaining each, 16.60% of variance in the other variable. From the surveyed women's experience, spiritual practices reinforce resilience. Faith-based activities that helped to attain such achievement were prayer along with the scriptures and church activities as well as faith. The gain from spirituality boosting resilience is less feeling of depression and anxiety, improving emotionally, growing in resilience and hope. In reciprocity, resilience too helped in spiritual growth, to rely more on God and reduce self-blame. Ultimately, the women gained more strength and courage, inner peace, and more resistance.

In Objective 4, the existing support system was informal counselling by the pastor and intercession by the prayer group. Counselling, praying, mentoring, coaching, home visiting, specific church program, and specific support group in the church, were the needs expressed by the women in the survey for a sound support system. The lack of validation of these women translated into a low-level self-esteem.

Objective 5 follows objective 4 which showed that the women in the church faced stigma twice over, but received little support, only from the pastor and prayer group, while in their perception, the church was the place of all consolation. Faith-based counselling, resilience training programs, stigma-awareness workshops, addressing misconceptions about infertility, promoting empathy in church communities were major intervention lines recommended by the surveyed women. Suggested intervention strategies were based on teaching, training, praying, lobbying, facilitating access to mental health services, and support to various extents.

## Implications

The findings of the study portend some implications for theory and practice. The main implications are discussed hereafter.

### *Theoretical Implication*

The findings support an integrated theoretical model positioning infertility stigma as a multi-dimensional stressor operating through cognitive (self-devaluation), behavioural (social withdrawal), and social (family/public stigma) pathways to produce psychological distress. Resilience represents a partially independent resource pool comprising health, support, spiritual, and occupational elements, influencing psychological outcomes regardless of stigma levels. This model specifies stigma dimensions as pathways to psychological distress in this cultural context; identifies resilience as independent rather than moderating role; documents religious communities' complex role as both resource and stressor sources; and highlights culturally specific resilience mechanisms.

### *Practical Implications*

**Spirituality Clinical and Pastoral Implications.** The results of this study can inform interventions at multiple levels. For mental health practitioners, the high level of ASPIRES Religious Crisis scores suggest the need for routine screening for spiritual struggle among women with infertility. The co-occurrence of high spiritual engagement and high crisis indicates complex spiritual presentations requiring nuanced assessment beyond simple religiosity measures. Cognitive-behavioural family therapy interventions might address maladaptive cognitions ("God is punishing me") while preserving adaptive spiritual practices.

For church-based counsellors, the findings highlight the dual role of religious communities as both stressor and resource. The phenomenon of feeling stigmatized in

church calls for institutional interventions: education challenging pronatalist theologies, support groups normalizing infertility, and pastoral training in reproductive health sensitivity. The three-stage coping model suggests stage-matched interventions: early-stage crisis intervention, mid-stage support groups, and late-stage meaning-centred counselling.

The prayer-centred spirituality profile indicates that interventions engaging women's existing prayer practices – such as prayer journaling, contemplative prayer, and intercessory communities – may prove more acceptable than cognitive or behavioural approaches. Meanwhile, the low level of scriptural engagement suggests opportunities for bibliotherapy with willing women, using with caution infertility narratives from the Bible (e.g. the stories of Sarah and Hannah) to normalize struggle and model faithful endurance.

**Stigma Dimension Intervention Targets.** The results point to critical intervention targets. The findings on self-devaluation dimension indicate that internalized stigma components may be most amenable to psychological intervention, even when external stigma sources remain intractable. Cognitive-behavioural approaches targeting internalized beliefs about womanhood and motherhood may directly reduce depression and anxiety.

Social withdrawal presents intervention dilemmas. While withdrawal protects against immediate stigma exposure, it simultaneously increases isolation and rumination risk, which are established depression predictors. Structured social engagement programs could counter withdrawal's isolation effects while providing peer support from the shared experience of others. However, such programs must navigate cultural sensitivities around infertility disclosure.

Family and public stigma reflect the extended family's central role in the context of Zou County. The intense pressure from in-laws and husbands documented in qualitative accounts, suggests that family-level interventions may be necessary. However, the finding that over 60% of women identified husband support as a crucial resilience factor indicates potential for dyadic interventions strengthening couple communication and mutual support.

**The Church's Double-Edged Role.** The church's simultaneous provision of spiritual resources and infliction of stigma-related harm represents a particularly disturbing finding requiring careful intervention consideration. The "camouflaged" nature of within-church stigma, hidden behind religious language of sin, faith, and divine will, makes it more psychologically damaging than overt community stigma by creating confusion about legitimate spiritual concern and harmful stigmatization.

Specific practices like requiring pastor's wife to participate in baby dedication ceremonies demonstrate how religious customs can systematically traumatize vulnerable individuals. Faith-based counselling must address these institutional stigma sources while preserving genuine spiritual resources that women find meaningful. Training religious leaders to recognize and counter stigma, rather than inadvertently perpetuating it, represents a critical intervention need.

The finding that church members behave "exactly like others in the community, and do more" suggests that religious identity does not protect against stigma participation and may even intensify it through added moral condemnation. This tendency challenges assumptions that faith communities automatically provide supportive environments for members facing reproductive challenges.

**Psychological Distress Patterns and Clinical Needs.** The substantial proportions exhibiting extremely severe depression (19.79%), anxiety (26.30%), and

stress (10.21%) indicate significant unmet mental health needs requiring clinical attention. The pattern that over half showed normal stress levels while higher proportions showed clinical depression and anxiety, suggests that infertility may specifically threaten mood and worry processes beyond general stress reactions.

The qualitative accounts of profound self-devaluation in which women describe themselves as incapable of "such a great achievement" as fruit trees' annual bearing, reveal existential identity disruption extending beyond typical adjustment difficulties. Such presentations may require specialized intervention addressing core identity and meaning-making; not only symptom reduction.

The correlation pattern showing stronger relationships between self-devaluation/social withdrawal and psychological distress, compared to public and family stigma, supports targeting internalized and behavioural stigma components in intervention. Even when external stigma sources prove intractable in traditional cultural contexts, psychological interventions addressing self-concept and social engagement may yield substantial benefit.

**Conclusion**

The findings of the study help to answer the five research questions in this study that established the influence of spirituality and resilience on managing infertility stigma. This conclusion is made in five points, following the research questions. First, spirituality positively influences coping strategies in being responsible of 20,3% of the variance in these strategies. Specifically, the spiritual state of the woman positively influences each coping strategy, except the active-avoidant that points to a decreasing spiritual vitality of the target woman. Second, resilience played an influencing role along with infertility stigma in mitigating the psychological effects of infertility stigma with the ability to explain 45,8% in the

variance of psychological effects, and infertility stigma, 45.9%. However, the infertility stigma domains of self-devaluation and social withdrawal presented as risk factors for these psychological effects.

Third, spirituality and resilience together influence infertility stigma coping strategies by an indirect effect. Spirituality and resilience mutually effect on each other, explaining each, 16.60% of the variance in the other variable. Fourth, the support structures that can aid married women in managing infertility stigma should involve or engage in counselling, praying, mentoring, coaching, home visiting, specific church program, specific support group in the church, pointing to emotional and social support. Fifth, faith-based counselling, resilience training programs, stigma-awareness workshops, addressing misconceptions about infertility, empathy promoting in church communities are the major intervention lines. In church community education, the focus should be on brotherly love, intercession, pastor training, youth education for purity before God, and public awareness raising. Intervention strategies should be based on teaching, training, praying, lobbying, facilitating access to mental health services, and support to various extents.

Overall, the personal iceberg of the Satir Model conceptualizes well the self of the woman in this study. In the metaphor, the layer of the self refers to life force, spirit, soul, essence, being (Xian et al., 2022). This helps to figure out the spirituality of the women with infertility. If it is anchored in the life force, the self will achieve congruence. And with a high level of self-worth, the women will adopt positive coping mechanisms and achieve great level of resilience in the face of infertility stigma. From all results, resilience levels were above average, the use of positive coping strategies by the women in the study was average, the level of self-esteem was

average in general. These results suggest the grounding of the women participant to the study's spirituality in the life force.

## Recommendations

Following the study findings, the recommendations in this section, if implemented and sustained, are meant to alleviate the psychological burden of infertility stigma and enhance the psychological wellbeing of married women in the condition, especially those attending Evangelical Church Assemblies. These recommendations recognize the role of important stake holders including policy makers; Local and National Governments, community organizations; helping, mainly mental health professionals, such as social workers, psychologists, counsellors, marriage and family therapists; scholars, and church leaders.

### *Policy Makers*

Infertility was recognised as a public health issue at global level, but this is little visible on the ground. Some study participants claimed help in the face of the high cost of infertility treatment. Therefore, it is recommended that access to fertility care be more facilitated.

In addition, professional counselling was almost not sought by the study participants for infertility stigma and psychological effects as they merely knew about it. Consequently, the study recommends raising of awareness, accentuating availability of mental health services, and facilitating access to them.

### *National Government*

From this study, it is recommended that the Ministry of Health considers the issue and take the lead for granting visibility to counselling and marriage and family therapy facilities.

In addition, data should be collected on issues of infertility and stigma and access to the data be made easy and possible for research purpose on the issue.

It is recommended that the Ministry of Family Works concomitantly with the Ministry of Health in Benin raise awareness on the harm induced by stigmatisation. They should also plan community education and sensitisation on the issue.

***Local Government***

The study recommends that the authorities in Zou County act diligently to ensure that their population has easy and quick access to mental health services and benefits from community education on the stigma of infertility, in order to improve the mental health and relationship stability of women facing infertility.

***Community Organizations***

It is recommended that community organizations address the stigma of infertility and support populations for informed knowledge and behaviour change.

***Helping Professionals***

The study recommends that helping professionals, specifically marriage and family therapists promote their services and encourage the target population to access these and make use of them.

***Scholars***

The study recommends that scholars shed light on the phenomenon in the study area through research and widen knowledge. Given that the perception of infertility legitimise stigmatization, it is recommended that scholars investigate both the issues of infertility and stigma for example along with resilience and spirituality in its cultural essence. This could help to evaluate the impact of Christian spirituality.

### *Church Leaders*

The study recommends that church leaders should design a policy for managing infertility issue in the church, including teaching, training, praying, lobbying, facilitating access to services, and more. Specifically, it is recommended that there be:

- Pastoral care training with specifics for infertility.
- Capacity building of the leadership on the management of people with infertility in the church.
- Teaching and training addressing misconceptions about infertility, stigma-awareness, resilience gaining, empathy and Christian values of brotherly love, purity before God, and similar topics.
- Lobbying by the church leadership for subsidized access of women to fertility healthcare.
- Faith-based counselling organized by the church leadership in collaboration with marriage and family therapists.
- Support structure in the church set by the church leadership, engaging knowledgeable people from the church, for caring activities such as informal counselling, praying, mentoring, coaching, home visiting, and more.

## Suggestions for Further Study

The scope of this study was limited to the Evangelical Church. Focusing on the form and content of the woman's prayer among other factors, further research could explore the differences on the study variables, within Christianity in general, looking for group characteristic patterns, and the variations in the severity of the psychological effects of infertility stigma.

The independent effects finding does not preclude more complex, contextually responsive resilience processes suggested by qualitative data. Resilience may operate through situation-specific resource deployment not captured by general linear moderation tests. Future research employing intensive longitudinal methods may reveal dynamic, transactional resilience processes obscured in cross-sectional designs.

The present study focused on women with low socioeconomic status with hindered access to fertility care, which may justify the prayer-centred spirituality. Further research could replicate this study in urban area, where the women are better-off socioeconomically, thus have access to fertility information, and have much better access to fertility care. One area of exploration could be her spirituality in the face of wealth of opportunities, and the mitigation of psychological effects.

The population studied is strongly rooted in their culture and it seems to influence the church. Another possible area of research deriving from this study is the exploration of the cultural factors that sustain the stigma of infertility, and the cultural resources eventually exploitable against the stigma of infertility, as well as the cultural meaning given to the psychological effects of infertility stigma and their cultural treatment. This could help to build an intervention model that is culturally anchored.

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# APPENDIX

## APPENDIX I – INFORMED CONSENT FORM

Dear Participant,

My name is Jocelyne Houndebasso Ahoga. I am a Marriage and Family Therapy student conducting research for the award of a Doctor of Philosophy (PhD) at Pan Africa

Christian University in Nairobi, Kenya. My research is addressing the topic, *Influence of spirituality and resilience on managing infertility stigma among married women in selected Evangelical Church Assemblies in Zou County, Benin*.

Thank you as you journey with me in this work by participating freely without any influence or pressure to participate in the study. Please note that you are free to withdraw from the process at any time before and during the data collection process. We value your privacy and will make every effort to guarantee the confidentiality of any information you will be giving. To this end, please do not reveal your identity while filling out the questionnaire form or participating in any other activity related to the research. This will help to keep your anonymity in the study results that will serve only for academic purposes. The risk attached to your participation is minimal, as you may experience mild emotional distress due to the sensitivity of the topic. Although there is no direct benefit, the study findings may help on intervention strategies for reducing infertility stigmatization among women in your area. All ethical protocols will be observed. If you agree, kindly read, complete and sign the Informed Consent Statement below. Should you have any further concern about your participation to this study, I will be pleased to answer your call on +229 0 197 770 408.

Jocelyne Annie Marie-Claire Houndebasso Ahoga

Signature of the Researcher  Date: 1st November 2025_____

**Statement of Informed Consent**

I understand that I am voluntarily participating in this study and that I can withdraw my consent any time before or during the data collection process. I am assured that my withdrawal will not cause any harm to me. I have been given the freedom to seek clarification about the study and been promised they will be attended to. I willingly consent to participate in this study.

Name of Participant _____

Signature of Participant _____ Date: _____

**Confidentiality Agreement**

I, Jocelyne Houndebasso Ahoga, a PhD student at Pan Africa Christian University, conducting the research acknowledged the above, and by my signature, hereby commit to take every necessary measure to protect the confidentiality of the study participant _____ in accordance with the guidelines of the University Ethics Committee and all applicable laws in Benin.

Jocelyne Annie Marie-Claire Houndebasso Ahoga

Signature of the Researcher  Date: 1st November 2025_____

## APPENDIX II – RESEARCH ASSISTANT CONFIDENTIALITY AGREEMENT

This agreement is between:

Jocelyne Annie Marie-Claire Houndebasso Ahoga,

hereafter named Researcher, and

_____

hereafter named Research Assistant.

The research assistant will perform data collection, data screening and qualitative as well as quantitative analysis of the collected research data. Instruments for the data collection will be provided to the research assistant by the researcher. On every aspect of the work, the research assistant will collaborate with peer research assistants and the researcher to complete the data collection, data screening and data analysis. During the research process and after, the research assistant is instructed to value the privacy of research participants and make every effort to guarantee the confidentiality of any information they will be giving. Throughout the process, the research assistant will convey the collected and processed data as well as any related information to the researcher in password protected documents.

Jocelyne Annie Marie-Claire Houndebasso Ahoga

Signature of Researcher  Date: 14th October 2025 _____

**Statement of the Confidentiality Agreement**

I agree to:

1. Keep confidential, any research information shared with me. I will discuss or share research information exclusively with the researcher or peer duly identified research assistants.

2. Keep secure any research information in my possession, complying with instructions from researcher for the purpose.
3. Not let any personally identifiable information to which I have access, to be accessible outside of the research team, unless following written instructions from researcher.
4. Inform the researcher immediately, of any potential data breaches for prompt address of the situation.
5. Return all research information to the researcher upon request, or when I have completed the research tasks.
6. Destroy after completing the research tasks or upon request, all research information that is not returnable to the researcher, after consulting with researcher.

Research Assistant's Name: _____

Research Assistant's Signature: _____ Date: _____

## APPENDIX III – INTRODUCTION LETTER TO CHURCH LEADERS

Jocelyne Houndebasso Ahoga

Baptist Church of Benin / Local Church Godomey PK14

Date: 13 Mars 2025

Union of Baptist Churches in Benin

Region of Zou and Collines

Regional Executive Board

Chair of the Region

Dear Reverend Chair,

I hope this letter finds you well. I am writing to formally introduce myself and share details about my research activities that involve members of our evangelical faith community.

My name is Jocelyne Houndebasso Ahoga. I met the Lord over four decades ago, and I have been an active member of the Church since. I deeply value the spiritual guidance and fellowship this denomination provides.

I am a Marriage and Family Therapy student currently conducting research for the award of a Doctor of Philosophy (PhD) at Pan Africa Christian University in Nairobi, Kenya. My research is addressing the topic, *Influence of spirituality and resilience on managing infertility stigma among married women in selected Evangelical Church Assemblies in Zou County, Benin*. This study aims to shed lights on the lived experiences of women in the Church facing the issue, and provide

directions on their perception as well as expectations of effective support from the Church.

In conducting this research, I am committed to upholding the highest ethical standards, consistent with both academic requirements and our shared values as people of faith. (1) Consent to participate in the study will be voluntary and documented. Every participant will receive complete information about the study's purpose, procedures, risks, and benefits before agreeing to participate. (2) Participation is entirely voluntary. Participants may withdraw at any time without any consequence. (3) All data will be kept confidential, individual responses will not be linked to names in any reports and data will be stored securely and destroyed after the research is completed. (4) Each participant will be treated with respect, honouring their time, perspectives, and right to decline participation. (5) The research has been designed to minimize any potential psychological, social, or spiritual discomfort. (6) I am ready to share a summary of findings with the church leadership upon completion, if desired. (7) This research will be ethically supported by the Post Graduate School and Institutional Scientific and Ethics Review Committee (ISERC) of Pan Africa Christian University, and the Beninese National Commission of Ethics for Medical Research. Authorisation from these two institutions will be submitted to you before the field work started.

I respectfully request your permission to recruit participants from the congregation, and your blessing on this endeavour.

I would welcome the opportunity to discuss this research with you in person and answer any questions you may have. I should be most grateful if you could contact me at +229 0 197 770 408.

Thank you for your time, your leadership, and your consideration of this request. I am grateful for the opportunity to contribute to knowledge while honouring the trust and values of Evangelical Community.

With respect and appreciation,



Jocelyne Annie Marie-Claire Houndebasso Ahoga

Date: 13th March 2025 _____

## APPENDIX IV – QUESTIONNAIRE

Dear study participant, kindly tick (√) or fill in the space provided as accurately and completely as possible with the information required.

Sub-County_____ Date_____

**1.** Denomination _____Local Church_____

Code_____

**Section A: Demographic Information**

**Age-related information (years)**

**2.** a. Age of the woman: _____

Range: 18-34 _____ 35-50 _____ 51-60_____

b. Age at marriage: _____ c. Age of marriage _____

**3.** a. Age of husband: 20-29_____ 30-39 _____ 40-49 _____ 50-70 ____

b. Age at marriage _____ c. Number of other spouses_____

d. Number of children from other spouses _____

**Education/ Employment Status**

**4**. Highest level of education: Primary _____ High School _____ University degree _____ Postgraduate _____ Others: Specify _____

**5**. Employment status: Employed _____ Not employed _____ Self-employed_____ Retired _____ Others: Specify_____

**Treatment Attempts**

**7**. a. For how long have you been trying to conceive? _____b. Have you tried any treatment? _____ c. For how long? _____ d. Which type? Indigenous practices____ Conventional medicine _____ Spiritual practices _____ e. Please Describe _____

_____

**8**. a. Had your husband sought treatment? _____b. Duration? _____

c. Type? _____ d. Please describe _____

_____

e. What was the verdict? _____

f. What was his reaction? _____

**Section B:** Spirituality

**B1:** ASPIRES

**Note.** ASPIRES is composed of two scales: Spiritual Transcendence and Religious Sentiments. Spiritual Transcendence include Prayer Fulfilment, Connectedness and Universality, totalising 23 items. Religious Sentiments is composed of Religious Involvement and Religious Crisis, all comprising 12 items. ASPIRES is protected by copyright. The French version used in the field was directly provided by the author under license agreement with the mention:

*"© 1999, 2003 par Ralph L. Piedmont".*

Consequently, the 35 items are not displayed here.

**B2:** Kindly, answer the questions.

1. In what ways do you nurture your experience of God?

_____

_____

2. How do you maintain your relationships with God concerning procreation and maternity?

_____

_____

**Section C:** Psychological Resilience

**C1:** CD-RISC-10

**Note.** The CD-RISC-10 is a ten-item scale. It was acquired by license agreement. The French version used for the survey had the mention:

> *All rights reserved. No part of this document may be reproduced or transmitted in any form, or by any means, electronic or mechanical, including photocopying, or by any information storage or retrieval system, without permission in writing from Dr. Davidson at mail@cd-risc.com. Copyright © 2001, 2003, 2007, 2009, 2010, 2013 by Kathryn M. Connor, M.D., and Jonathan R.T. Davidson, M.D. We acknowledge contributions as works made for hire by Laura Campbell-Sills, Ph. D. and Murray Stein, MD.*
>
> *Traduction/rétrotraduction: Chaudieu I, Norton J, Gandubert C, Plante V, Ritchie K. Inserm E361, Montpellier, France*

Consequently, the items are not displayed here.

**C2:** Specific Expression of Resilience.

In your culture, what can help a woman to be or appear strong in the face of infertility and related stigma?

_____

_____

_____

**Section D:** Interplay Spirituality-Resilience

In the table below, please tick (√) all the phrases that describe the mutual effects of your spirituality and resilience regarding the management of your spirituality, and answer the question.

| | Item | Agree | Neutral | Disagree |
|---|---|---|---|---|
| 1 | Spirituality-Resilience Interaction | | | |
| a | My spiritual practices enhance my resilience. | | | |
| b | My resilience helps me to grow spiritually. | | | |
| c | In which ways do your spiritual practices enhance your resilience? And how does your resilience help you to grow spiritually?<br>1. ----<br>2. ----<br>3. ---- | | | |
| 2 | Coping Outcomes | Agree | Neutral | Disagree |
| d | My spirituality helps me to be more resilient and I feel less depressed and less anxious. | | | |
| e | As I'm resilient, I rely more on the will of God and this reduces my self-blame. | | | |
| f | My reliance to God is growing and my resilience is increasing; Now I feel good emotionally. | | | |
| g | Which other coping outcomes do you experience then?<br>1. ----<br>2. ----<br>3. ---- | | | |

**Section E:** Infertility Stigma Management

**E1:** Infertility Stigma: Infertility Stigma Scale Short Form (ISS-SF)

The ISS-SF is a 12-item scale. The scale was used in this study under permission from the developer. The items were accessed in the supplementary data of a paper got via the DOI: 10.1016/j.jpsychores.2025.112160, provided by the developer. The paper was not published under open access license. Consequently, the 12 items are not displayed here.

**E2:** Kindly, describe any other act of stigmatization you face.

_____

_____

**Section F:** Psychological Effects of Infertility**:** Depression Anxiety and Stress Scale (DASS21)

DASS21 is the short form of the Depression, Anxiety and Stress Scale (DASS45). It is a 21-item open access scale.

**DASS21** Name: Date:

Please read each statement and circle a number 0, 1, 2 or 3 which indicates how much the statement applied to you **over the past week**. There are no right or wrong answers. Do not spend too much time on any statement.

The rating scale is as follows:

0 Did not apply to me at all
1 Applied to me to some degree, or some of the time
2 Applied to me to a considerable degree or a good part of time
3 Applied to me very much or most of the time

| | | | | | |
|---|---|---|---|---|---|
| 1 (s) | I found it hard to wind down | 0 | 1 | 2 | 3 |
| 2 (a) | I was aware of dryness of my mouth | 0 | 1 | 2 | 3 |
| 3 (d) | I couldn't seem to experience any positive feeling at all | 0 | 1 | 2 | 3 |
| 4 (a) | I experienced breathing difficulty (e.g. excessively rapid breathing, breathlessness in the absence of physical exertion) | 0 | 1 | 2 | 3 |
| 5 (d) | I found it difficult to work up the initiative to do things | 0 | 1 | 2 | 3 |
| 6 (s) | I tended to over-react to situations | 0 | 1 | 2 | 3 |
| 7 (a) | I experienced trembling (e.g. in the hands) | 0 | 1 | 2 | 3 |
| 8 (s) | I felt that I was using a lot of nervous energy | 0 | 1 | 2 | 3 |
| 9 (a) | I was worried about situations in which I might panic and make a fool of myself | 0 | 1 | 2 | 3 |
| 10 (d) | I felt that I had nothing to look forward to | 0 | 1 | 2 | 3 |
| 11 (s) | I found myself getting agitated | 0 | 1 | 2 | 3 |
| 12 (s) | I found it difficult to relax | 0 | 1 | 2 | 3 |
| 13 (d) | I felt down-hearted and blue | 0 | 1 | 2 | 3 |
| 14 (s) | I was intolerant of anything that kept me from getting on with what I was doing | 0 | 1 | 2 | 3 |
| 15 (a) | I felt I was close to panic | 0 | 1 | 2 | 3 |
| 16 (d) | I was unable to become enthusiastic about anything | 0 | 1 | 2 | 3 |
| 17 (d) | I felt I wasn't worth much as a person | 0 | 1 | 2 | 3 |
| 18 (s) | I felt that I was rather touchy | 0 | 1 | 2 | 3 |
| 19 (a) | I was aware of the action of my heart in the absence of physical exertion (e.g. sense of heart rate increase, heart missing a beat) | 0 | 1 | 2 | 3 |
| 20 (a) | I felt scared without any good reason | 0 | 1 | 2 | 3 |
| 21 (d) | I felt that life was meaningless | 0 | 1 | 2 | 3 |

Source: https://maic.qld.gov.au/wp-content/uploads/2016/07/DASS-21.pdf

**Section G:** Coping Mechanisms

**G1:** COMPI Coping Strategy Scales

The COMPI Coping Strategy Scales is made of 4 scales totalising 19 items. It was used in this study with the permission of the developer who provided it. Consequently, the questions are not reproduced here.

**G2:** Kindly, describe any other way you cope with infertility stigma.

_____

_____

**Section H:** Self: Rosenberg Self-Esteem Scale (RSES)

## Rosenberg Self-Esteem Scale (RSES)

Instructions:

Below is a list of statements dealing with your general feelings about yourself. There are four possible answers for each of the 10 questions, from "strongly agree" to "strongly disagree. Tap the box to indicate how strongly you agree or disagree with each statement.

| | | Strongly Agree | Agree | Disagree | Strongly Disagree |
|---|---|---|---|---|---|
| 1 | On the whole, I am satisfied with myself | **3** | **2** | **1** | **0** |
| 2 | At times, I think I am no good at all | **0** | **1** | **2** | **3** |
| 3 | I feel that I have a number of good qualities | **3** | **2** | **1** | **0** |
| 4 | I am able to do things as well as most other people | **3** | **2** | **1** | **0** |
| 5 | I feel I do not have much to be proud of | **0** | **1** | **2** | **3** |
| 6 | I certainly feel useless at times | **0** | **1** | **2** | **3** |
| 7 | I feel that I'm a person of worth, at least on an equal plane with others | **3** | **2** | **1** | **0** |
| 8 | I wish I could have more respect for myself | **0** | **1** | **2** | **3** |
| 9 | All in all, I am inclined to feel that I am a failure | **0** | **1** | **2** | **3** |
| 10 | I take a positive attitude toward myself | **3** | **2** | **1** | **0** |

Source: https://novopsych.com/assessments/well-being/rosenberg-self-esteem-scale-rses/

**Section I:** Support structures within the church that contribute to managing infertility stigma

In the table hereafter, please tick (√) all the phrases describing the structures that support you in managing your condition, and answer the questions.

| | Item | | | |
|---|---|---|---|---|
| 1 | Support from Individual Interactions | Agree | Neutral | Disagree |
| a | The Church leadership are supportive to me. They pray for me and care for me; they show particular interest. | | | |
| b | I'm in connexion with other women like me and we support each other by praying together. | | | |
| c | Counselling initiatives from people of the Church community strengthen me and increase my resilience. | | | |
| d | In which other ways do you get support?<br>1. ---<br>2. ---<br>3. --- | | | |
| 2 | Church-Based Support | Agree | Neutral | Disagree |
| e | In my Church community, pastoral care exists for women like me. The pastor meets with us to pray for my husband and I and encourage us with Scriptures and listen to us from time to time. | | | |
| f | In my Church community, prayer groups are bound to pray for us often. | | | |
| g | We benefit from faith-based counselling programs set by the Church leadership. | | | |
| h | What else is part of your Church-Based support system?<br>1. ---<br>2. ---<br>3. --- | | | |
| 3 | Community Involvement | Agree | Neutral | Disagree |
| i | Twice a year, the Church develop a program for women with infertility. | | | |
| j | In a year, at least 5 people from the Church community invite me for an encouragement meeting. | | | |
| k | Which other experience do you have of community involvement?<br>1. ---<br>2. ---<br>3. --- | | | |
| 3 | Effectiveness of Support Structures | Agree | Neutral | Disagree |
| l | I like the functioning of the support structures in my community. | | | |

| | | | | |
|---|---|---|---|---|
| m | I often respond to all of the support structures in my Church community. | | | |
| n | With all that is offered, I feel supported in my Church community. | | | |
| m | What change would you like to see in the support structures of your Church community?<br>1. ---<br>2. ---<br>3. --- | | | |

**Section J:** Faith-integrated interventions that can effectively support married women in managing infertility related stigma

In the table hereafter, please tick (√) all the phrases that describe the faith-integrated interventions that support you in managing your condition, and answer the questions.

| | Item | | | |
|---|---|---|---|---|
| 1 | Intervention Strategies | Agree | Neutral | Disagree |
| a | I would like to benefit from faith-based counselling. | | | |
| b | I think that resilience training programs will greatly help me. | | | |
| c | Stigma-awareness workshops will help to educate people on the harm of stigmatizing and reduce our burden. | | | |
| d | Which additional intervention strategies would you like to have in the Church?<br>1. ---<br>2. ---<br>3. --- | | | |
| 2 | Community Education | Agree | Neutral | Disagree |
| e | Addressing misconceptions about infertility will help to reduce stigmatization. | | | |
| f | Promoting empathy in Church communities will increase support. | | | |
| g | What would you add for community education?<br>1. ---<br>2. ---<br>3. --- | | | |
| 3 | Policy Recommendations | Agree | Neutral | Disagree |
| h | Integrating mental health services within faith-based organizations will enhance support and decrease psychological impairments due to infertility stigma. | | | |
| i | Any comment or additional thoughts for policy recommendation?<br>1. ---<br>2. ---<br>3. --- | | | |

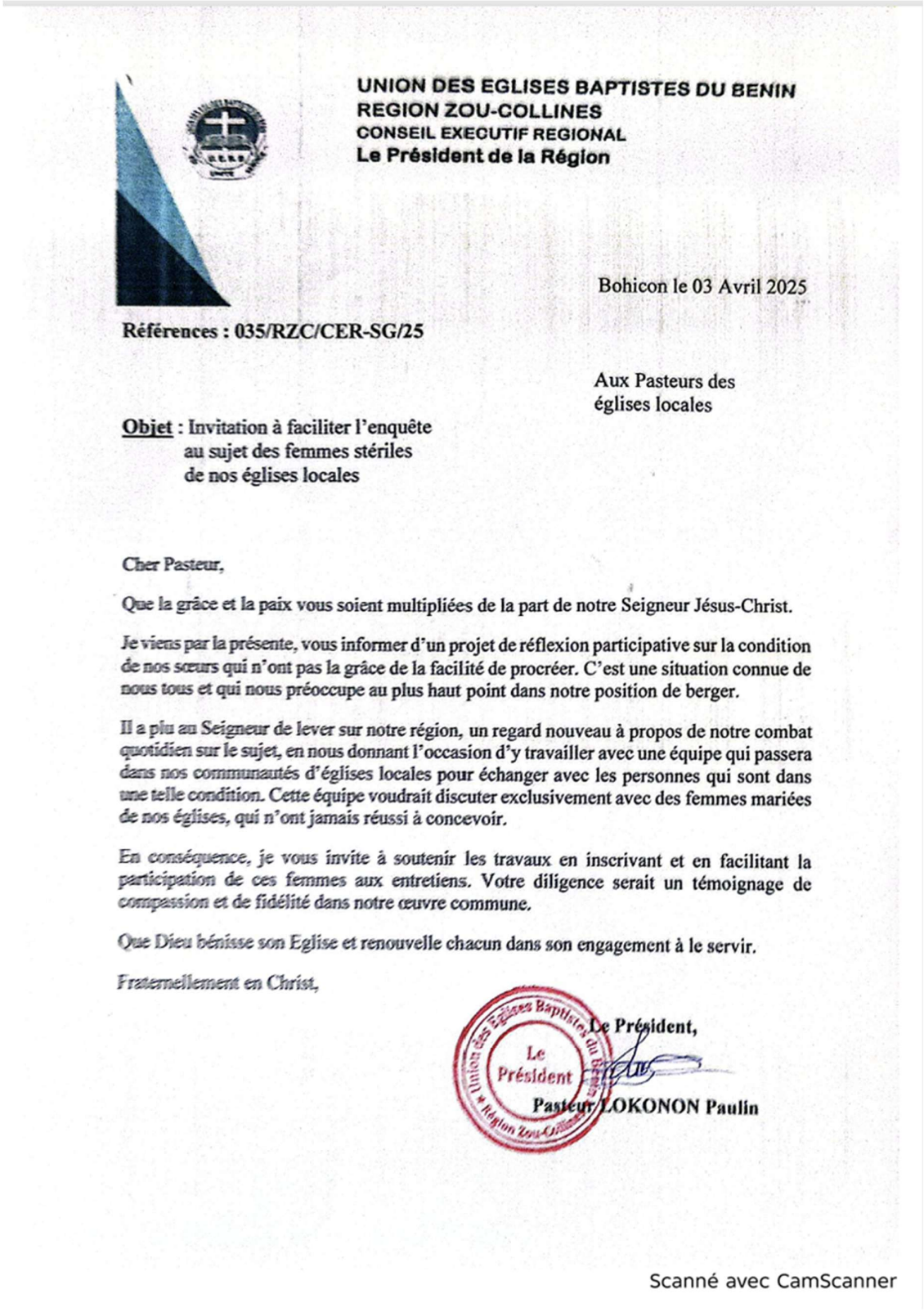
## APPENDIX V – SEMI-STRUCTURE INTERVIEW GUIDE – CHURCH LEADERS

1. Perception of infertility
2. Male infertility
3. The causes of infertility
4. Scope of infertility
5. Infertility stigma
6. Culturally validated solutions
7. Spirituality and culture in the Church
8. Women's coping strategies
9. Women's resilience
10. Evaluation of Church members on the issues of infertility and related stigma
11. Church Policy on infertility
12. Issues in implementing the policy
13. Improvement of the Church policy / intervention strategies
14. Final thoughts.

## APPENDIX VI – SEMI-STRUCTURE INTERVIEW GUIDE – SURVEY PARTICIPANTS AGED 51-60

1. Perception of infertility in the cultural context of the County of Zou
2. Scope of infertility
3. Specific experience of infertility and related stigma (with focus on the duration)
4. Causes of infertility
5. Culturally validated solutions
6. Women's coping strategies
7. Women's resilience
8. The growth process
9. The role of spirituality
10. Spirituality and culture in the Church
11. Evaluation of Church members on infertility and stigma
12. Evaluation of support structures
13. Evaluation of the Church policy on infertility
14. Improvement of the Church policy on infertility
15. Final thoughts.

# APPENDIX VII – COVER LETTER FOR INTERACTING WITH LOCAL CHURCHES



UNION DES EGLISES BAPTISTES DU BENIN
REGION ZOU-COLLINES
CONSEIL EXECUTIF REGIONAL
Le Président de la Région

Bohicon le 03 Avril 2025

Références : 035/RZC/CER-SG/25

Aux Pasteurs des
églises locales

Objet : Invitation à faciliter l'enquête
au sujet des femmes stériles
de nos églises locales

Cher Pasteur,

Que la grâce et la paix vous soient multipliées de la part de notre Seigneur Jésus-Christ.

Je viens par la présente, vous informer d'un projet de réflexion participative sur la condition de nos sœurs qui n'ont pas la grâce de la facilité de procréer. C'est une situation connue de nous tous et qui nous préoccupe au plus haut point dans notre position de berger.

Il a plu au Seigneur de lever sur notre région, un regard nouveau à propos de notre combat quotidien sur le sujet, en nous donnant l'occasion d'y travailler avec une équipe qui passera dans nos communautés d'églises locales pour échanger avec les personnes qui sont dans une telle condition. Cette équipe voudrait discuter exclusivement avec des femmes mariées de nos églises, qui n'ont jamais réussi à concevoir.

En conséquence, je vous invite à soutenir les travaux en inscrivant et en facilitant la participation de ces femmes aux entretiens. Votre diligence serait un témoignage de compassion et de fidélité dans notre œuvre commune.

Que Dieu bénisse son Eglise et renouvelle chacun dans son engagement à le servir.

Fraternellement en Christ,

Le Président,

Union des Eglises Baptistes du Bénin
Le Président
Région Zou-Collines

Pasteur LOKONON Paulin

Scanné avec CamScanner

## APPENDIX VIII – ETHICS CLEARANCE LETTER

Pan Africa Christian University

Thika Road Campus Valley Road Campus
P.O. BOX 56875 - 00200 +254 730955000 +254 730955501/2
enquiries@pacuniversity.ac.ke www.pacuniversity.ac.ke

### Office of the Registrar Academic Affairs

11th December 2025

**TO WHOM IT MAY CONCERN**

Dear Sir/Madam,

**RE: RESEARCH AUTHORIZATION AND ETHICS CLEARANCE LETTER FOR AHOGA JOCELYNE ANNIE MARIE REG. NO: PMFT/21478/0/21**

Greetings! This is an introduction letter for the above named person a final year student at Pan Africa Christian University (PAC University), pursuing a Doctor of Philosophy in Marriage and Family Therapy.

She is at the final stage of the programme and thus preparing to collect data to enable her finalize on the dissertation. The dissertation title is ***"Influence of Spirituality and Resilience on Managing Infertility Stigma Among Married Women in Selected Evangelical Church Assemblies in Zou County, Benin."***

We kindly request that you allow her obtain a research permit so as to proceed and collect data from Married Women in Selected Evangelical Church Assemblies in Zou County, Benin.

Warm Regards,

PAN AFRICA CHRISTIAN UNIVERSITY
REGISTRAR
P.O. Box 56875 - 00200.
TEL: 0721 932050 0734 400694
NAIROBI.KENYA

Dr. Lilian Vikiru
Registrar Academic Affairs
Pan Africa Christian University
Lumumba Drive, Roysambu, off Kamiti Rd, off Thika Rd
P.O Box 56875-00200, Nairobi, Kenya
Email: registrar.aa@pacuniversity.ac.ke
Website: www.pacuniversity.ac.ke

# APPENDIX IX – RESEARCH LICENSE

MINISTÈRE DE LA SANTÉ
RÉPUBLIQUE DU BÉNIN

Secrétariat Général du Ministère
**********
COMITE NATIONAL D'ETHIQUE POUR LA RECHERCHE EN SANTE

Adresse postale : 08 BP 882
Tel : +229 21 33 2178/ 21 33 21 63
Adresse mail : saîte.infos@gouv.bj
Site web: www.sante.gouv.bj

IORG0005695 – MS Cotonou, Bénin (expire le 20/06/2027) **IRB00006860** MS IRB #1-CNPERS - Cotonou, Bénin (expire le 20/06/2027)

N° 024/MS/DC/SGM/CNERS/SA

Cotonou, le 29 Août 2025

**Le président**

**A**

**Madame**
Jocelyne HOUNDEBASSO AHOGA

**COTONOU**

Comité National d'Ethique pour la Recherche en Santé
Le Président

**Objet : Avis éthique favorable Numéro de Réf. : CNERS 013/2025, session du 24 Juin 2025 et autorisant la mise en œuvre de votre recherche**

Madame,

Le Comité National d'Ethique pour la Recherche en Santé (CNERS) du Bénin, a étudié votre protocole de recherche dont les caractéristiques sont les suivantes :

- **1ère Version reçue le** : 05 Mai 2025
- **Rang de soumission** : 1ère soumission
- **Titre de l'étude** : Spiritualité, stigmatisation de femmes infertiles et résilience : cas des églises Évangéliques du Zou au Bénin
- **Investigateurs principaux** : Jocelyne HOUNDEBASSO AHOGA
- **Promoteurs de l'étude** : PAN AFRICA CHRISTIAN UNIVERSITY
- **Coordonnées des demandeurs** : Jocelyne H. AHOGA
  Tel : 01 97 77 04 08 ; lalejoce@gmail.com
- **Date de début estimée** : Janvier 2024
- **Date de fin estimée** : Août 2025

**La session s'est déroulée en ligne le 24 Juin 2025 à 14 heures, avec la participation des membres dont les noms suivent :**

| | | | | | |
|---|---|---|---|---|---|
| **Mesdames** | 1) ALE HACOU | Charlotte | **Messieurs** | 2) GUEDOU | Fernand Aimé |
| | 3) AKINSHOLA | Amélie | | 4) HOUNSA | Assomption |
| | | | | 5) OKRY | Magloire |
| | | | | 6) HOUSSOU | Paul Ferdinand |
| | | | | 7) ALLABI | Aurel Constant |
| | | | | 8) MARTIN-COREA | Louis-Jacques |

- **Sur la base des documents soumis, revus et approuvés :**
  a) Protocole de recherche
  b) Résumé du projet
  c) Note d'information générale
  d) Fiche de renseignement
  e) Fiche de dépouillement des données
  f) Fiche de formation des enquêteurs
  g) Note d'information et formulaire de consentement_ femmes de plus de 52 ans
  h) Note d'information et formulaire de consentement_femme infertile
  i) Note d'information et formulaire de consentement_leaders ecclésiastiques
  j) Questionnaire
  k) Guide d'entretien pour les femmes de plus de 52 ans
  l) Guide d'entretien des leaders ecclésiastiques
  m) Curriculum vitae du chercheur : Jocelyne HOUNDEBASSO AHOGA
  n) Curriculum vitae des experts :
     i. PARI Paboussoum
     ii. ZOUNON Ornheilia Faith Bubune Sitou
  o) Chronogramme
  p) Budget




- **ainsi que sur la base des avis scientifiques fournis par :**

  a) PARI Paboussoum
  **b)** ZOUNON Ornheilia Faith Bubune Sitou

**experts sollicités par les chercheurs.**
Aucun conflit d'intérêt n'a été évoqué, ni par les membres du CNERS, ni par les chercheurs.

Après avoir validé globalement les aspects scientifiques et évalué les aspects éthiques centrés sur les bénéfices attendus pour la santé des participants à la recherche et ainsi que sur la qualité des informations transmises en vue de l'obtention d'un consentement libre et éclairé, le CNERS,

- après avoir validé la dernière version Numéro 3 **déposée le 27 Août 2025**
- a émis un **Avis éthique favorable Numéro de Réf. : CNERS 013/2025, session du 24 Juin 2025.**

**Le présent avis éthique favorable est exécutoire et vous autorise à mettre en œuvre, à compter de la date de signature, la recherche ci-dessus intitulée.**

**Il est valable pour une durée d'un (01) an** à compter de sa date de signature. Passé ce délai, vous êtes tenue de soumettre votre protocole à une nouvelle ré-évaluation du CNERS.

**Par ailleurs, le CNERS vous demande de :**

1) **l'informer de** toute nouvelle information/ modification, qui surviendrait à une date ultérieure à cette approbation-ci et qui impliqueraient des changements dans le choix des participants à la recherche, dans la manière d'obtenir leur consentement, dans les risques encourus ou tout évènement indésirable survenant dans le cadre du déroulement de cette recherche.

   *Le CNERS doit, en effet, dans ces cas, ré-évaluer et donner une nouvelle approbation avant l'entrée en vigueur desdites modifications ;*

2) **utiliser les documents qu'il a validés;**
3) **faire signer au participant, le formulaire de consentement, en deux exemplaires,** dont
   - l'un sera remis au participant et
   - l'autre, conservé dans vos dossiers ;
4) **lui adresser un rapport, au terme de la validité** de cet avis éthique.

Tout en vous souhaitant plein succès dans la réalisation de votre recherche, le CNERS vous prie de recevoir Madame, ses salutations les meilleures.

Comité National d'Ethique pour la Recherche en Santé
Le Président

**Dr Fernand Aimé GUEDOU**
*Président du CNERS*

# APPENDIX X – ASPIRES PERMISSION AGREEMENT

CENTER FOR PROFESSIONAL STUDIES

9603 Deereco Road
#5334
Timonium, MD 21094
Telephone: (410) 929-8178
E-Mail: drralph@thecfps.com

## PERMISSION AGREEMENT

Dear Jocelyne Ahoga:

In response to your recent request, permission is hereby granted to you, Jocelyne Ahoga, to use the *ASPIRES* in your study entitled, "Influence of Spirituality and Resilience on Managing Infertility Stigma Among Married Women in Selected Evangelical Church Assemblies in Zou County, Benin" subject to the following restrictions:

(1) Any and all materials used will contain the following credit line: "ASPIRES copyrighted 2020 by the Center for Professional Studies, LLC. Further reproduction is prohibited without permission of the Publisher." This line **must appear** before the initial presentation of the items in the survey

(2) None of the materials may be sold or used for purposes other than those described above.

(3) You are permitted to perform 425 administrations of the ASPIRES electronically.

(4) A licensing fee of $255.00 will be paid. If more than 425 administrations are needed, you will pay an additional 60 cents US per additional administration.

(5) Items will be presented in the same order as they appear in the paper version of the instrument.

(6) This agreement will expire one year from 09/12/2025.

Please make two copies of this Permission Agreement. One should be signed and returned to me to indicate your agreement with the above conditions. Keep the other copy for your records.

ACCEPTED AND AGREED:

By: Ralph L. Piedmont, Ph.D.

Date: 09/12/2025

BY: Jocelyne Ahoga

JOCELYNE AHOGA

PRINTED NAME: _____

Date: 9th December 2025

# APPENDIX XI – CD-RISC-10 PERMISSION AGREEMENT

Dear Jocelyne:

Thank you for your interest in the Connor-Davidson Resilience Scale (CD-RISC). We are pleased to grant permission for use of the French CD-RISC-10 in the project you have described under the following terms of agreement:

1. You agree (i) not to use the CD-RISC for any commercial purpose unless permission has been granted, or (ii) in research or other work performed for a third party, or (iii) provide the scale to a third party without permission. If other colleagues or off-site collaborators are involved with your project, their use of the scale is restricted to the project described, and the signatory of this agreement is responsible for ensuring that all other parties adhere to the terms of this agreement.

2 You may use the CD-RISC in written form, by telephone, or in **secure electronic format whereby the scale is protected from copying, downloading, alteration, repeated use, unauthorized distribution or search engine indexing. In all use of the CD-RISC, including electronic versions, the full copyright and terms of use statement must appear with the scale. The scale should neither be distributed as an email attachment, nor appear on social media, nor in any form where it is accessible to the public and should be removed from electronic and other sites once the activity or project has been completed. The RISC can only be made accessible in electronic form after subjects have logged in through a link, password or unique personal identifier.**

3 Further information on the CD-RISC can be found at the www.cd-risc.com website. The scale's content may not be modified. If you need translations, please indicate here the **translation(s) needed: French**_____. We can provide up to four at no extra cost. Beyond four there is a fee of $10 per translation.

4 Three forms of the scale exist: the original 25 item version and two shorter versions of 10 and 2 items respectively. When using the CD-RISC 25, CD-RISC-10 or CD-RISC 2, whether in English or other language, please include the full copyright statement and use restrictions as it appears on the scale. **Please indicate which version of the scale you require CD-RISC-10**_____

5. A student-rate fee of $ 16 US is payable to Jonathan Davidson at 2434 Racquet Club Drive, Seabrook Island, SC 29455, USA either by PayPal (www.paypal.com, account david011@mc.duke.edu), cheque or bank wire transfer (in US $$). Money orders are not accepted. It is kindly requested that payment be made within 30 days of signing this agreement below.

6. Complete and return this form via email to jonathan.davidson@duke.edu.

7. In any publication or report resulting from use of the CD-RISC, you do not publish or partially reproduce items from the CD-RISC without first securing permission from the authors.

If you agree to the terms of this agreement, please email a signed copy to the above email address. **Upon receipt of the signed agreement, we will email a copy of the scale.**

For questions regarding use of the CD-RISC, please contact Jonathan Davidson at the above email address. We wish you well in pursuing your goals.

Sincerely yours,

Jonathan R. T. Davidson, M.D.

Agreed to by:



Jocelyne Ahoga . _9/26/2025_____
Signature (printed) Date

__Mrs_Jocelyne Ahoga_____
Title

Pan Africa Christian University (PACU)_____

# APPENDIX XII.1 – COMPI CSS PERMISSION AGREEMENT

## (The Request)

Gmail

Jocelyne Ahoga <lalejoce@gmail.com>

**Permission Request to Use COMPI Coping Strategy Scales in Research**

**Jocelyne Ahoga** <lalejoce@gmail.com> 10 septembre 2025 à 09:37
À : lone.schmidt@sund.ku.dk

Dear Dr. Schmidt,

I hope this message finds you well. My name is Jocelyne Ahoga, and I am currently engaged in research exploring the intersection of existential coping, spirituality, and psychological resilience – particularly in contexts of infertility and emotional trauma.

In reviewing the literature, I came across the COMPI Coping Strategy Scales developed as part of the Copenhagen Multi-centre Psychosocial Infertility (COMPI) project. I deeply appreciate the scale's nuanced approach to capturing coping mechanisms in sensitive psychosocial contexts, and I believe it aligns meaningfully with the aims of my study.

I would like to respectfully request your permission to use the COMPI Coping Strategy Scales in my research.

The study explores how women navigating infertility in Benin Republic, West Africa engage existential and spiritual coping strategies to foster resilience and meaning-making. By integrating the COMPI Coping Strategy Scales, I aim to assess psychosocial responses to infertility and examine how culturally embedded spiritual practices influence emotional adaptation and well-being. The research seeks to contribute to holistic approaches in pastoral care and trauma-informed support, bridging empirical assessment with existential theory.

I intend to use the scale for data collection and analysis, with appropriate citation and adherence to any conditions you may specify.

If there are guidelines for use, licensing requirements, or preferred formats for citation, I would be grateful if you could share them with me.

Thank you for your time and for your valuable contributions to the field. I look forward to your response.

Warm regards,

Jocelyne Ahoga

PhD student PAC University, Kenya

Email: lalejoce@gmail.com

# APPENDIX XII.2 – COMPI CSS PERMISSION AGREEMENT

Gmail

**Jocelyne Ahoga <lalejoce@gmail.com>**

## Permission Request to Use COMPI Coping Strategy Scales in Research

**Lone Schmidt** <lone.schmidt@sund.ku.dk> 15 septembre 2025 à 12:19
À : Jocelyne Ahoga <lalejoce@gmail.com>
Cc : Mariana Veloso Martins <mmartins@fpce.up.pt>

Dear Jocelyne Ahoga,

Thank you for your interest in our COMPI Coping Strategy Scales.

You have my permission to use the COMPI Coping Strategy Scales for your own project.

Please, find attached an overview of items included in the different COMPI psychosocial scales including the COMPI Coping Strategy Scales.

Furthermore, is attached our paper explaining how the COMPI Coping Strategy Scales were developed (Schmidt et al., 2005b).

Also, I have attached the Summary of my Doctor of Medical Science thesis (Schmidt, 2006). Please, refer to these two papers in your own publications regarding coping with infertility.

Kind regards,

**Lone Schmidt**

Professor emerita

DMSci, PhD, MD

**University of Copenhagen**

Department of Public Health

Section of Social Medicine

Øster Farimagsgade 5, PO Box 2099

1014 Copenhagen K

# APPENDIX XIII.1 – ISS-SF PERMISSION AGREEMENT

## (The Request)

Gmail Jocelyne Ahoga <lalejoce@gmail.com>

**Permission Request to Use the Infertility Stigma Scale (ISS) in Research**

**Jocelyne Ahoga** <lalejoce@gmail.com> 10 septembre 2025 à 09:17
À : leijunbao@126.com

Dear Professor Lei,

I hope this message finds you well. My name is Jocelyne Ahoga, and I am currently conducting a mixed methods study on infertility-related stigma and spiritual coping among women with infertility in Benin Republic, West Africa. I came across your publication on the Infertility Stigma Scale (ISS), and I found it highly relevant to the psychosocial dimensions I aim to explore.

I am writing to respectfully request your permission to use the ISS in my research. The scale's emphasis on perceived and self-stigma aligns closely with the experiences I am studying, and I believe it would contribute meaningfully to both the empirical and contextual depth of the project.

If there are any formal licensing requirements, conditions for use, or preferred citation formats, I would be grateful for your guidance. I am committed to upholding all ethical standards and ensuring proper attribution of your work.

Thank you for your time and consideration. I deeply appreciate your contribution to this important area of research and would be honoured to incorporate your scale into my study.

Warm regards,

Jocelyne Ahoga

PhD student PAC University, Kenya

Email: lalejoce@gmail.com

# APPENDIX XIII.2 – ISS-SF PERMISSION AGREEMENT

Gmail Jocelyne Ahoga <lalejoce@gmail.com>

**Permission Request to Use the Infertility Stigma Scale (ISS) in Research**

**leijunbao** <leijunbao@126.com> 14 septembre 2025 à 04:41
À : Jocelyne Ahoga <lalejoce@gmail.com>

Dear Jocelyne Ahoga,

I hope this email finds you well. I'm delighted to receive your message regarding your interest in using the Infertility Stigma Scale (ISS) for your research. I think you can use our scale for an academic purpose.

I am pleased to inform you that our team has recently published a shortened version of the ISS scale (ISS-SF), designed to enhance practicality while maintaining robust psychometric properties. The validation study, titled "Development and validation of the infertility stigma scale short form (ISS-SF): A cross-sectional study", is now available in the Journal of Psychosomatic Research (2025, Volume 194, Article 112160). You may access the full text via DOI: 10.1016/j.jpsychores.2025.112160.

Given its enhanced practicality, I believe the ISS-SF (a 12-item short form) will be a valuable asset to your research.

Best regards,

Jun Lei